1870

Jan - Jun

year, it is only necessary to observe that the decrease of tonnage is in the quantity of Government stores only. This will of course vary from year to year with the requirements of the works in progress.

7. Of private boats carrying private goods, the numbers were in 1867-68, 128 boats with 489 tons, against 563 boats with 1,179 tons in the following year, showing an increase in the traffic connected with private trade of 690 tons, or 122 per cent., that is to say, that the private boat traffic on the river which is that of principal interest, increased nearly two and a quarter-fold in the year. This was chiefly owing to the final suppression of the Government Agency by which the food of the work-people was formerly supplied. The trade in rice and all other provisions having been thrown into the hands of private parties, a proportionate extension of this description of traffic took place.

8. With regard to the light which these returns may throw on the question of the navigability of the river at the different times of year, the following is a comparison of the arrivals of boats at the 1st Barrier in each quarter for each of the two years :—

		Arrivals in 1867-68.		Arrivals in 1868-69.	
		Boats.	Tons.	Boats.	Tons.
Monsoon.	1st Quarter, June to August ...	41	707	52	290
Monsoon.	2nd „ September to November...	42	238	166	352
Dry Weather.	3rd Quarter, December to February	162	1,265	382	754
Dry Weather.	4th „ March to May ...	56	252	274	578
	Total ...	301	2,462	874	1,974

This, however, includes Government boats, which being towed by steamers form no part of the ordinary sailing boat traffic. Excluding these, the return for the private boat traffic only is as follows :—

	Arrivals in 1867-68		Arrivals in 1868-69.	
	Boats.	Tons.	Boats.	Tons.
1st Quarter ...	9	42	21	112
2nd „ ...	29	76	118	109
3rd „ ...	47	210	225	482
4th „ ...	30	90	199	476
Total ...	128	489	563	1,179

In the first year the dry-weather traffic is three times, in the last year four times that in the monsoon. It will be observed also that in the last year, 1868-69, the traffic on the last quarter, when the river had fallen lower than had ever been known before, was almost equal to that in the preceding quarter, and much greater than in any quarter of the previous

9. It is satisfactory to notice in connexion with this increase of traffic, that freights have not risen. It might have been supposed that in a year of such very bad navigation, the charges for transport would have been higher. They remained, however, about the same, or slightly less than in the previous year, *viz.*, 14 annas per bag from the Coast to Badrachellum, 105 miles, and Rs. 1-1 to Rs. 1-2 to Dumagoodium, 120 miles, being at the rate of 1 anna 11 pie to 2 annas per ton per mile. Since the freshes have set in, and the improved chan-

between Badrachellum and Dumagoodium has been opened, freights have fallen to 15 annas per bag to Dumagoodium, which is now the ruling rate, equivalent to 1 anna 8 pie per ton per mile. This is for carriage up-stream without return loads.

10. The *number of boats that entered* the canal at the Tail Locks, whether to unload at the Dumagoodium Wharf, or to proceed further up river, was—

Government boats	420
Private „	615
Total ...	1,035

of these, the number that passed through the Canal was—

Upwards.

	No.	Tons.
Governments boats	102	268
Private „	75	234
Total ...	177	502

Downwards.

Government boats	75	226
Private „	78	55
Total ...	153	281

Total traffic through the Canal ... Boats 330, Tons 783

11. Statement No. 3 gives an abstract of the traffic with its estimated value. From this it appears that the Imports to the 1st Barrier from the Coast were—

	At 1st Barrier.		At 2nd Barrier.		Total.	
	Tons.	Value.	Tons	Value.	Tons.	Value.
		Rs.		Rs.		Rs.
[illegible] 1867-68 ...	...	...	...	...	2,462	2,43,540
In 1868-69 ...	1,974	2,48,058	502	78,321	2,476	3,26,379

[illegible]e Ex

	1st Barrier.		2nd		Timber from above 1st Barrier.		Total.	
	Tons.	Value.	Tons.	Value.	Logs		Tons	Logs tim- [illegible]
		Rs.		Rs.		Rs.		
1867-68 ...	28	7,600	...	...	19,162	77,292	28	19,
1868-69 ...	137	18,225	55	2,829	14,021	84,126	192	14,

The Exports consisted chiefly of country produce, as hides, horns, wax, whe[illegible]. The Imports consisted chiefly of rice and salt, with a large variety of other articles. A go[illegible] many passengers were carried in the Native boats, the charge being very small, only 8 annas to a Rupee per head from Dumagoodium to Dowlaishwarum, a distance of 120 miles; 1,305 pa[illegible]ngers are returned as arriving at, and departing from, the 1st Barrier in this way, and about a fifth of that number from 2nd Barrier. I herewith enclose a specimen of a Traffic Register Form used at the Tail Locks.

No. 1.

COMPARATIVE STATEMENT of the Traffic between the 1st Barrier and the Coast in the years 1867-68 and 1868-69.

Month.	Arrivals of Private Boats										Arrivals of Government Boats				Total Arrivals of Boats.		Total Tonnage.		Total Arrivals of Private Boats with Private Goods.		Tonnage.	
	With Government Stores.				With Private Goods.						With Government Stores.											
	For 1867-68.		For 1868-69.		Unloaded at Badrachellum.				Unloaded at Booragoola & Dumagoodium.		1867-68.		1868-69.									
					1867-68.		1868-69.		1867-68.													
	Boats.	Tons.	Boats.	Tons.	Boats.	Tons.	Boats.	Tons.	Boats.	Tons.	Boats.	Tons.	Boats.	Tons.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.
June ...	...	...	...	...	2	9	2	8	4	8	2	58	...	...	8	15	75	274	6	10	7	13
July ...	...	...	...	...	7	39	1	2	3	9	5	236	9	40	15	12	274	49	10	3	48	31
August ...	...	...	...	...	6	31	...	...	7	17	5	310	22	138	18	33	358	220	13	11	48	82
September ...	...	...	...	...	3	14	13	14	7	13	1	26	3	37	4	29	16	58	4	26	16	21
October ...	...	...	...	...	2	12	12	16	6	16	...	...	14	33	9	45	54	80	8	31	28	47
November ...	...	...	...	...	3	14	13	21	7	18	6	263	31	173	29	92	168	214	10	61	32	41
December ...	...	...	...	...	1	4	15	36	5	13	...	...	33	92	42	102	497	207	6	69	17	115
January ...	...	...	...	...	2	10	32	122	11	28	...	...	19	11	64	109	403	237	13	75	38	192
February ...	...	...	...	...	25	148	34	81	3	7	...	...	52	14	56	171	365	310	28	81	155	175
March ...	...	...	...	...	4	18	58	285	7	18	...	...	30	46	25	127	152	410	11	95	36	350
April ...	...	...	...	...	3	14	57	68	5	12	2	2	8	4	11	117	64	129	8	88	26	103
May ...	...	...	...	...	2	8	13	21	9	20	2	3	5	1	20	30	36	39	11	16	28	23
Total ...	150	1,085	85	206	60	321	250	674	68	163	23	888	226	589	301	874	2,462	1,974	128	563	489	1,179

F. T. HAIG, *Lieut.-Colonel*, R. E.,
Supdg. Engr., Upper Godavery Circle.

DUMAGOODIUM, *September* 1869.

No. 2.

STATEMENT showing the traffic through the 1st Barrier Canal for 1868-69.

Months.	UPWARDS.						DOWNWARDS.					
	Government Boats.			Private Boats.			Government Boats.			Private Boats.		
	Boats.	Tons.	Rs.	Boats.	Tons.	Rs.	Boats.	Tons.	Rs.	Boats.	Tons.	Rs.
June 1868	...	...	...	...	...	...	...	...	...	...	...	...
July „	...	...	...	...	...	...	...	...	...	...	...	...
August „	10	8	12,105	...	...	...	...	...	...	...	...	...
September „	...	...	...	...	...	...	...	...	...	...	...	...
October „	4	26	6,556	...	...	...	...	...	...	15	23	1,005
November „	8	15	14,630	32	185	29,300	15	96	9,031	10	6	230
December „	23	35	1,486	11	25	3,800	12	69	7,009	11	5	138
January 1869	9	6	372	12	3	290	11	18	6,090	20	16	956
February „	13	...	...	20	21	3,500	10	28	4,500	22	6	500
March „	3	38	6,282	...	...	...	27	15	2,450	...	...	...
April „	...	...	...	...	...	...	...	...	...	...	...	...
May „	...	...	...	...	...	...	...	...	...	...	...	...
... 10	268	41,431	75	234	36,890	75	226	29,080	78	55	2,829

DUMAGOODIUM
The 20th September 1869.

F. T. HAIG, *Lieut.-Colonel*, R. E.,
Supdg. Engr., Upper Godavery Circle.

No. 3.

ABSTRACT of Traffic Return from 1st June 1868 to 31st May 1869.

	Arrivals at 1st Barrier, *viz.*, Dumagoodium and Badrachellum, from the Coast.						Departures for the Coast and intermediate points from the 1st Barrier.						Passed through Canal.											
													Upwards.						Downwards.					
	Government Boats.			Private Boats.			Government Boats.			Private Boats.			Government Boats.			Private Boats.			Government Boats.			Private Boats.		
	Boats.	Tons.	Rs.	Boats.	Tons.	Rs.	Boats.	Tons.	Rs.	Boats.	Tons.	Rs.	Boats.	Tons.	Rs.	Boats.	Tons.	Rs.	Boats.	Tons.	Rs.	Boats.	Tons.	Rs.
From 1st June 1868 to 31st May 1869 ...	226	589	91,877	874	1,974	2,48,058	207	301	54,557	288	137	18,225	102	268	41,431	75	234	36,890	75	226	29,080	78	55	2,829

DUMAGOODIUM,
the 20th September 1869.

F. T. HAIG, *Lieut.-Colonel*, R. E.,
Supdg. Engr., Upper Godavery Circle.

REGISTER of Traffic at Tail Locks, 1st Barrier Canal, for 1869.

AND PLACE OF DEPARTURE.	DATE OF ARRIVAL AT TAIL LOCKS.	No. OF BOAT.	OWNER OF BOATS.	MEASUREMENT OF BOAT.			DRAUGHT OF BOAT.		PLACE WHERE LOADED.	PLACE WHERE UNLOADED.	NAME OF THE TYNDAL.	CARGO TO WHOM CONSIGNED.	DESCRIPTION OF GOODS.	BAGS.	MAUNDS.	PASSENGERS.		
				Length.	Breadth.	Depth.	Feet.	Inches.								1st Class.	2nd Class.	3rd Class.

F. T. HAIG, *Lieut.-Colonel*, R. E.,
Supdg. Engr., Upper Godavery Circle.

COMPARATIVE ABSTRACT OF TRAFFIC ON THE INDIAN RAILWAYS FOR THE 1st, 2nd & 3rd QUARTERS OF 1869 AND 1868.

	East Indian.				Eastern Bengal.		Calcutta and South-Eastern.		Oudh and Rohilkund.		Punjab.		Delhi.		Madras.				Great Southern-of-India.		Great Indian Peninsula.		Bombay, Baroda and Central India.		Sind.		Total of all Lines.	
	Main Line.		Jubbulpore Line.				State Line.								South-West Line.		North-West Line.											
	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
FIRST QUARTER.																												
Total Earnings	709,450	540,974	30,924	20,344	43,006	38,345	2,238	2,412	5,780	5,785	29,540	23,327	30,726	2,923	94,823	91,150	23,096	22,499	16,346	16,321	499,950	427,676	130,409	107,189	16,804	26,007	1,633,071	1,324,862
Mean Mileage open	1,131	1,131	223	223	113	113	28	28	42	42	246	246	174	53	492	492	185	153	168	169	874	862	307	306	107	109	4,091	3,926
Average P[illegible] per week ...	54,572	41,613	2,738	1,557	3,308	2,950	172	186	445	446	2,272	1,794	2,363	224	7,294	7,012	1,776	1,731	1,257	1,255	38,458	32,898	10,031	8,245	1,292	2,000	[illegible],620	101,912
Average Rec[illegible]er week per mile	48·2	36·8	10·7	6·9	29·2	26·0	6·1	6·6	10·6	10·6	9·2	7·3	13·5	4·2	14·8	14·2	9·6	11·3	7·5	7·5	44·0	38·2	32·6	26·9	12·0	18·3	30·7	25·9
SECOND QUARTER.																												
Total Earnings	683,233	549,638	23,757	21,378	39,906	39,379	2,410	1,971	6,139	6,151	27,967	28,820	32,797	3,910	104,692	111,139	35,195	50,331	17,189	17,950	383,013	435,965	122,541	140,955	25,129	32,165	1,452,047	1,432,632
Mean Mileage open	1,131	1,131	223	223	113	113	28	28	42	42	246	246	174	53	492	492	185	153	168	168	874	873	307	306	106	109	4,089	3,937
Average Receipt per week ...	46,717	41,732	1,627	1,644	2,992	3,029	185	151	395	473	2,151	2,217	2,523	301	8,053	8,549	2,707	3,871	1,322	1,381	29,463	33,536	9,426	10,843	1,933	2,474	111,696	110,202
Average Receipt per week per mile	41·1	36·9	8·9	7·3	26·4	26·7	6·6	5·3	9·4	11·3	8·7	9·0	14·5	5·7	16·3	17·3	14·6	25·3	7·8	8·2	33·7	38·4	30·7	35·4	18·2	2·7	27·3	28·0
THIRD QUARTER.																												
Total Earnings	491,820	473,977	16,700	15,346	41,689	40,117	1,470	1,583	4,672	5,919	24,132	20,211	23,712	3,622	101,973	91,585	45,503	31,447	17,871	17,354	202,161	230,337	60,621	46,944	12,519	21,034	1,040,643	999,518
Mean Mileage open	1,131	1,131	223	223	113	113	28	28	42	42	246	246	187	53	492	492	204	163	168	168	873	874	308	306	106	109	4,131	3,948
Average Receipt per week ...	37,836	36,460	1,284	1,180	3,206	3,086	113	121	359	455	1,856	1,554	1,824	278	7,844	7,045	3,500	2,419	1,374	1,335	15,550	17,718	4,663	3,611	963	1,618	80,049	76,886
Average Receipt per week per mile.	33·4	32·2	5·7	5·3	28·3	27·2	4·0	4·3	8·5	10·8	7·5	6·3	9·7	5·2	15·9	14·3	17·1	14·7	8·1	7·9	17·8	20·3	15·1	11·8	9·0	14·8	19·4	19·4

No. 3 of 1870.



SUPPLEMENT TO.

The Gazette of India.

CALCUTTA, SATURDAY, JANUARY 15, 1870.

OFFICIAL PAPERS.

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Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 7th January 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding*.
His Excellency the Commander-in-Chief, K. C. B., G. C. S. I.
The Hon'ble G. Noble Taylor.
Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble Gordon S. Forbes.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey, C. S. I.
The Hon'ble Francis Steuart Chapman.
His Highness Saramadé Rájáhée Hindústán Ráj Rájendra Srí Mahárájá Dhiráj Sivái Rám Singh Bahádur, of Jaypúr, G. C. S. I.
The Hon'ble F. R. Cockerell.

The Hon'ble MR. COCKERELL took the oath of allegiance, and the oath that he would faithfully discharge the duties of his office.

AGROR VALLEY BILL.

The Hon'ble MR. STEPHEN introduced the Bill to remove the Agror Valley from the jurisdiction of the tribunals established under the general Regulation-

and Acts. He said he did not think he need say more than a very few words on the subject, because the object of the Bill was simply to confirm an Ordinance which was fully considered some months ago by His Excellency the Governor General. The Ordinance was rendered necessary by the condition of the Valley at that time, and that condition still remained unaltered. It was hoped that the Bill introduced during the last session of Parliament would have invested the Governor General in Council with power to make laws, executively, for those parts of the empire which were in a wild and unsettled condition, and for which, practically, before 1862, the Governor General legislated. This would have superseded the necessity of legislation by the Council. That Bill, however, as passed, did not make the anticipated provision. In fact, the Bill was hardly discussed at all: it was introduced at the very end of the session, and was reduced to the narrowest limits. The consequence was that it was necessary to legislate on the subject now before the Council in respect of the measures to be taken for the government of the Agror Valley. The territory was in an unsettled state, and it was necessary, for various reasons, to invest the authorities with unusual powers. The Bill was little but a transcript of the Ordinance, which had been carefully settled with the Government of the Panjáb, and had worked satisfactorily since its promulgation. There was therefore every presumption in favour of the policy of continuing the existing powers.

SUBORDINATE JUDGES AND MUNSIFS' BILL.

The Hon'ble MR. COCKERELL presented the Report of the Select Committee on the Bill to provide for the appointment of additional Subordinate Judges and Munsifs in the Presidency of Fort William.

QUARANTINE RULES' BILL.

The Hon'ble MR. CHAPMAN presented the Report of the Select Committee on the Bill to provide rules relating to quarantine.

The Council adjourned to Friday, the 14th January 1870.

WHITLEY STOKES,
Secy. to the Council of the Governor General for making Laws and Regulations.

CALCUTTA,
The 7th January 1870.

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

COTTON CULTIVATION IN THE N. W. PROVINCES DURING 1868-69.

No. 321, dated 30th March 1869.

From—W. C. PLOWDEN, Esq., *Secy. to the Board of Revenue,*

To—*The Secretary to the Government of the N. W. Provinces.*

I am desired by the Board of Revenue to submit, for the information of the Hon'ble the Lieutenant Governor, a statement of the area and estimated out-turn of the cotton crop in the Districts of the North-Western Provinces for the year 1868-69 as compared with 1867-68.

2. On reference to the details given in the statement, it will be observed that the extent of land brought under cultivation, and the aggregate produce in the several divisions of the North-Western Provinces during 1868-69, fall considerably below that of the preceding year. The large decrease is, without doubt, entirely attributable to the drought, which has injuriously affected [illegible] culture generally.

3. In every District in the Meerut Division, except Boolundshuhur, the estimated yield and the land cultivated are much less this year than in the previous year. In Boolundshuhur, however, the area cultivated is almost double that of last year, and the out-turn is, comparatively speaking, equally as good. This is very remarkable, and it is to be regretted that the Collector has not explained the cause of it.

4. Kumaon is not a cotton-growing district, and consequently no remarks on the part of the Board appear to be called for. A small quantity has been grown for private consumption, but none for sale or export.

5. The area sown in the Rohilcund Division is less than in the previous year by 15,984 acres, and the out-turn is less by 31,287 maunds. The decrease is entirely owing to want of rain.

6. The land devoted to cotton in the Agra Division is less by one-sixth than in the previous year, but there is great falling off in the out-turn, which in 1867-68 was to 2,50,743 maunds, and in 1868-69 1,46,389 maunds, or almost two-fifths less.

7. In the Jhansie Division much cotton was sown, but very little germinated. The area brought under cultivation was almost equal in extent to that of the previous year, but the yield was considerably less, *viz.*:—

In 1867-68	... ...	23,747 maunds.
„ 1868-69	... ...	9,550 „

8. There has been no material variation in the Allahabad and Benares Divisions. The season in these divisions was more favourable than in other parts of these Provinces, and the crops have yielded a fair out-turn.

9. In Ajmere the crop is very scanty.

10. Extracts from the reports of the District Officers, who have given an opinion on the condition of the cotton trade, as also the ruling prices of cotton during 1868-69, are attached as an appendix to this report.

11. A copy of this letter has been sent direct to the Chamber of Commerce, and the table appended will be published in the Gazette.

COMPARATIVE STATEMENT of the area and estimated out-turn of the Cotton Crops in the Districts of the North-Western Provinces during the years 1867-68 *and* 1868-69.

DISTRICTS.	ESTIMATED OUT-TURN IN CLEANED COTTON, 1867-68.		ESTIMATED OUT-TURN IN CLEANED COTTON, 1868-69.		REMARKS.
	Acres.	Maunds.	Acres.	Maunds.	
Saharunpore	28,417	26,133	21,265	15,764	* The produce is described by the Tehseeldars to be about half of that of last year, but even this estimate is supposed to be excessive.
Mozuffernuggur ...	28,532	41,096	15,879	18,803	
Meerut*	54,171	74,707	37,282	37,871	
Boolundshuhur ...	21,168	26,441	59,969	79,129	Return of 1867-68 believed to be erroneously low. Crop good and productive.
Allygurh	55,515	54,586	37,539	50,000	The area was less than in the preceding year; but from the market returns, it is clear that, in proportion to area, the produce of the present year has been greatly in excess of that of the previous year. The amount estimated is therefore probably near the truth.
TOTAL MEERUT DIVISION	487,803	222,963	171,934	199,567*	

COMPARATIVE STATEMENT of the area and estimated out-turn of the Cotton Crops in the Districts of the North-Western Provinces during the years 1867-68 *and* 1868-69—continued.

Districts.	Estimated out-turn in cleaned cotton, 1867-68.		Estimated out-turn in cleaned cotton, 1868-69.		Remarks.
	Acres.	Maunds.	Acres.	Maunds.	
Bijnour ...	29,519	27,536	24,224	14,294	The out-turn was everywhere, owing to drought, less than that of 1867-68. But both area and out-turn were large in the low lands, where, in ordinary years, owing to inundations from the river, the cotton crop is usually a very poor one.
Moradabad ...	40,337	29,552	23,095	11,619	
Budaon ...	35,312	15,500	45,985	17,661	
Bareilly ...	20,180	14,890	20,740	16,943	
Shahjehanpore ...	16,897	11,693	12,217	7,367	
Terai Pergunnahs ...	909	587	1,061	793	
Total Rohilcund Division ...	143,154	99,758	127,322	68,677	
Muttra ...	97,302	101,474	63,773	46,000	The out-turn was probably even less than the amount entered, which is the estimate of the Tehseeldars. Sufficient allowance was perhaps not made for drought. Only irrigated lands brought a full crop, and the frost in January nipped whatever was left on the bushes.
Agra ...	95,697	80,047	83,014	51,200	
Furruckabad ...	12,109	8,113	11,856	5,732	
Mynpoorie ...	27,648	11,180	28,000	15,300	
Etawah ...	47,066	35,460	42,312	23,179	
Etah ...	32,910	25,649	31,316	20,250	
Total Agra Division ...	312,732	261,923	260,271	161,661	
Jaloun ...	27,555	10,290	27,236	4,895	
Jhansie ...	25,246	13,141	21,164	4,393	
Lullutpore ...	1,696	376	987	262	
Total Jhansie Division ...	54,497	23,747	49,387	9,550	
Cawnpore ...	73,727	30,176	69,970	22,185	The rains having commenced favourably account for the increased area under cultivation, but the crop suffered from the drought.
Futtehpore ...	28,589	7,280	23,653	5,630	
Banda ...	82,893	31,426	99,584	39,499	
Allahabad ...	24,033	7,841	21,689	12,616	A better out-turn than what was at first anticipated from the drought. The heavy showers in September restored life to the withered crops, and the out-turn (as compared with the area sown) will be more than last year.
Humeerpore ...	43,121	9,940	41,291	16,889	
Jounpore ...	856	349	565	174	
Total Allahabad Division ...	253,219	87,012	256,752	96,993	

COMPARATIVE STATEMENT of the area and estimated out-turn of the Cotton Crops in the Districts of the North-Western Provinces during the years 1867-68 *and* 1868-69,—concluded.

Districts.	Estimated out-turn in cleaned cotton, 1867-68.		Estimated out-turn in cleaned cotton, 1868-69.		Remarks.
	Acres.	Maunds.	Acres.	Maunds.	
Goruckpore ...	9,406	2,654	7,419	2,449	
Bustee ...	315	135	154	102	
Azimgurh ...	706	128	653	79	
Mirzapore ...	6,339	2,353	7,320	2,292	
Benares ...	347	523	387	376	
Ghazeepore ...	6,416	962	3,977	630	
Total Benares Division ...	23,529	6,755	19,910	5,928	
Ajmere ...	12,792	24,868	5,868	10,140	
Grand Total ...	1,287,726	727,026	890,444	552,516	

Meerut.—Mr. W. A Forbes, Collector, says:—"There have been no marked changes in the ruling prices of cotton during the year, notwithstanding the scarcity of the article. The rates have varied from Rs. 13-5-4 to Rs. 20 per maund, and the average price between October 1867 and November 1868, both inclusive, was Rs. 16-10-3 per maund. The very difficulty of procuring cotton in any large quantities has probably prevented purchasers from entering the field."

The following extract of a letter from Messrs. Middleton, Cohen and Co., who are large purchasers for the English market in the Meerut District, is given by Mr. Forbes:—

"In further reply to your letter of the 16th ultimo, the following are the rates on which we purchased cotton from August 1867 to December 1868:—

"August 1867 ... ... Rs. 13 8 0
"September 1867 ... ... „ 12 0 0
"April 1868 ... Rs. 16-4-0, 16-2-0, 16-0-0, 15-8-0, 15-4-0, 14-8-0 and 14-0-0.
"May 1868 ... „ 15-8-0, 15-12-0, 16-0-0, 16-4-0, 16-8-0, 17-0-0, 17-4-0, 17-8-0 and 18-0-0.
"December 1868 ... Rs. 17-8-0, 18-0-0, 18-4-0, 18-8-0 and 18-12-0.

"The highest price paid this year was in last month, *viz.*, Rs. 19-4-0

"*Quality.*—The cotton last year was better than that of the preceding year, but the quality of this year's crop is far better than any I have ever seen at Meerut. It possessed very little seed, and scarcely any discoloration; whilst the cotton I see at Cawnpore, or the largest portion thereof, is very seedy.

"I do not think the price is likely to rise; the mofussil price is too high now to execute orders for this market or for England. I presume the price is maintained owing to the scarcity of the crop, but the shipments from Calcutta have been very light."

Allygurh.—Mr. G. H. Lawrence, Collector, says:—"Owing to the present scarcity, there is no great demand for cloth."

Moradabad.—Mr. R. Manderson, Collector, says:—"The price of cotton is, however, still very little higher than in the plentiful year, and far lower than in 1866.

"This is due (1), to diminished exports; and (2), to the flooding of the market with English cloths at low prices, which, re-acting on the price of native manufactured cloths, keep down the price of the raw material.

"Weavers are still employed on their looms, but if scarcity continues, it must be anticipated that many of them will be thrown out of work.

"The cotton drought of former years has taught them to betake themselves to other modes of subsistence, and no doubt they will act accordingly, should the necessity arise."

Bareilly.—Mr. H. D. Willock, Officiating Collector, says:—"There is now no perceptible demand for country cotton in the English markets; we have not exported any worth mentioning, and the prices have, as was to be expected, gone down.

"Good cotton can now be had at Rs. 21 to Rs 22 per maund of the local seer, or for one rupee less than what it commanded at the beginning of the season.

"The cultivation has also fallen off, and has reverted to the normal standard previous to the breaking out of the American civil war.

"The manufacture of country cloth has revived, but there is not the most distant apprehension of its ever being able to compete successfully with English piece-goods. They are very coarse, and, though durable, are never preferred by the rich and middle classes."

Muttra.—Mr. B. Hardinge, Collector, says:—"The native cloth trade is very slack, and the demand very small; the distress has affected the sale, as the poorer classes have enough to do to keep their families in food without spending their customary amount in clothes. English cloth has become much cheaper, as the stock in the country is large, and was imported when cotton was neither so scarce nor so dear as at present, and is under-selling the country products. For instance, the better-to-do classes can now buy common *markin* at 2½ annas a yard, while *guzzie* costs 1½ annas a yard; the English cloth is nearly double the breadth, and of much superior quality, wear, and appearance.

"The average price of cotton in Muttra, during the last twelve months, ranges from Rs. 15 to Rs. 20 per maund."

Agra.—Mr. H. W. Dashwood, Collector, says:—"I give in the margin the price of cotton in the Agra market for the last six months of 1867 and 1868.

Month.	1867.			1868.			Remarks.
	Rs.	A.	P.	Rs.	A.	P.	
July ...	16	0	0	20	8	0	Wholesale per maund.
August ...	14	0	0	20	8	0	
September ...	14	0	0	22	0	0	
October ..	13	8	0	18	0	0	
November ...	13	0	0	19	0	0	
December ...	13	0	0	19	8	0	
January 1869...	0	0	0	18	0	0	
Average ...	13	11	8	13	14	8	

"The Secretary of the Agra Municipality informs me that the importation of English cloth into Agra during eight months of 1868-69 shows a falling off equal to one-fourth as compared with the import of the preceding year. This, however, may be partly accounted for by the fact that four of the eight months were those of the rainy season, when trade always falls off. With regard to native cloth, it does not appear from the records of this (Octroi) office that there is any import or export trade beyond a very trifling extent, and that the native cloth used in Agra is manufactured here."

Furruckabad.—Mr. E. Montague, Deputy Collector, says:—"For the last nine months of 1867, the average price of cotton was Rs. 13-5-0 per maund, and for a similar period in 1868, the average was Rs. 17-12-0.

"Little or no foreign cotton is cultivated in this district; three years ago some was sown, but the cultivators unanimously declare that, when a foot or two high, the plant is burnt up by the heat of the soil.

"From the want of rain and high prices of grain, the demand for country cloth has greatly fallen off, and the market being glutted, the price has consequently fallen. Several weavers, it is reported, have left the trade for other more remunerative work.

"The ultimate effect of the scarcity will, no doubt, be a stimulus to the sale of native cloth, for people being poorer will not be able to afford English cloth, and will have to put up with the coarser and stronger article. *Dosuti* in any case holds its ground, as there is a constant demand for it for tent-making, and no similar European fabric to compete with it. It is made in Rujeepore and Guddunpore in the Mohumdabad Tehseel.

"The coarse country cloths are (except a few special manufactures, such as fine *pugrees*) the only native fabrics which have not been beaten out of the field by English goods,—*garrah, guzzie, adhotar* and *charkhana* (the latter being merely striped *garrah*) have the market to themselves until some coarse, strong, cheap English-manufactured article may appear. In the towns, the sale of country cloth is inconsiderable. The Superintendent of Octroi reckons that 50 men in Furruckabad buy English cloth to one who buys country; but the cultivators and the poor, who find that *garrah* lasts well, and who do not care about appearance, go to the country cloth market. An excellent *garrah* is made near Goorsuhaigunj and sold at the Terah Jakut bazars. It is nearly equal in fineness to *markin* (or English unbleached calico), and of twice the strength.

"A *pugree* of fine thread is made in the Kaimgunj Tehseel at Shumsabad. *Susie* (for women's pyjamas) of fine thread is made in the Mohumdabad Tehseel. A figured muslin, called *dodami*, used to be made five or six years ago in the Kaimgunj Tehseel, but like all native cloth, except of the coarsest kind, it vanished before the fine and cheap muslins of England."

Etawah.—Mr. H. M. Chase, Collector, says:—"The general dearness of food has affected the sale of country cloth, and the manufacturers are depressed in consequence. The price of the staple is higher than last year, the rate being during the year from Rs. 18 to Rs. 26 against Rs. 15 to Rs. 21 for the maund during the previous year.

"The local demand is so small that it must rather be the rates in the English market which have raised the price in this country than the increased use of the staple here."

Etah.—Mr. H. C. Barstow, Deputy Collector, says:—"Cleaned cotton is now selling at Rs. 19½ per maund in Kasgunj, the only considerable market of this district."

Jaloun.—Lieutenant-Colonel A. Ternan, Deputy Commissioner, says:—"Cotton is now selling at Rs. 24 per maund."

Jhansie.—Mr. G. L. Lang, Deputy Commissioner, says:—"The manufacture of native cloth has been very limited this year. Many families of Korees have altogether deserted their villages, owing to the poverty of the people and want of a market for their *ikree*, which is commonly called and sold as *kharrooa*.

"English manufactures are, however, rapidly replacing native cloths; they are cheaper and better, and Natives appreciate the fact."

Banda.—The Collector says:—"The prices of cloth, both of English and native manufacture, have declined, the latter in consequence of the fall in the former, and also as neither the khurreef nor rubbee harvests were good.

Jounpore.—Mr. W. R. Benson, Officiating Collector, says:—The price of English cloth is the same as it was at this time last year. The native manufacture of cloth has been inconsiderable, the demand for this article having decreased in consequence of the high price of grain, and a greater quantity of it having been worked up than the demand for the article required."

Mirzapore.—Mr. F. S. Wigram, Collector, says:—The price of cotton in the town of Mirzapore fluctuates in proportion to the demand in the London and Liverpool markets.

"As Natives for the most part give preference to English-manufactured cloth, the country stuff is not much in demand; the poorer classes of people only like to make use of it, as it is obtained somewhat cheaper than the other."

Dated 10th April 1869.

From—C. A. DANIELL, Esq., *Officiating Collector of Boolundshuhur,*

To—*The Secretary to the Government, North-Western Provinces.*

Offers remarks on the cotton crop for 1868-69 as an addenda to the figured statement which was submitted through the Board on the 2nd of February.

MEMORANDUM OF COTTON REPORT FOR 1868-69.

Boolundshuhur.—I am glad of this opportunity of adding the following remarks to the figured statement which was submitted on the 2nd of February.

2. In that statement the details were as follows:—

Area in acres	39,189
Out-turn in maunds	48,641

These figures show what was estimated to be the case, and although these are higher than the figures of the three preceding years, I find them to be far below the actual results.

3. I have now got my crop returns (Jinswar Statements) completed for this past khurreef, in which the following are the details of "cotton":—

Area in acres	59,969
Out-turn in maunds	9,129

I believe these figures to represent the facts of the case as correctly as can be expected from returns which are made up by so many hands.

4. These are the first returns of the sort which have been prepared in this District. The Putwarees and Kanoongoes have been well instructed in their work by myself and my Settlement Assistant, Mr. J. G. Robertson, and the papers have gone through a very careful and thorough office scrutiny. Until, therefore, I can find that any grave error has crept into these statements, I must consider the present actual returns of this cotton crop to show an area of close upon 60,000 acres and an out-turn of 79,000 maunds.

5. I have furthermore the following statement of figures to bear out my crop returns. This statement will show the comparative annual returns for the past six years with approximate sales at Khoorja, which I believe fairly represent the probable annual out-turn of cotton:—

Estimated Cotton Return.

	Area in acres.	Out-turn in maunds.	Sales at Khoorja in maunds.
1863	89,566	199,132	120,000
1864	83,627	140,656	110,000
1865	24,817	36,716	95,000
1866	22,679	31,158	90,000
1867	23,299	33,168	80,000
1868	59,969	79,129	80,000

The third column gives an approximate amount which is reported to me by seven of the chief dealers to be about the amount of sales each year.

6. It can easily be understood that the *area* for 1863 and 1864 are not too highly entered. It may, however, be possible that the *out-turn* for 1863 is too highly put down, as from the returns of other districts I think an average of two maunds one seer per acre is doubtful. The out-turn for 1864 is probably nearly correct, but I am afraid the returns for the three next years must be condemned as being very far from the truth.

7. In 1863 and 1864, the out-turn of the district, according to the returns, exceeded the sales at Khoorja.

In 1865,	the out-turn was	367,950	of	sales
„ 1866,	„	„ 312,900		„
„ 1867,	„	„ 332,800		„
„ 1868,	„	„ 791,800		„

Now I believe that the sales at Khoorja very fairly represent the out-turn of the district.

Khoorja is now the only market for cotton; and as regards the comparison between the amount of sales at Khoorja and the district out-turn, I believe that the amount of cotton grown in this district which does not reach Khoorja is made up as nearly as possible at Khoorja by the cotton which comes in from the neighbouring pergunnahs of Allygurh, Goorgaon, &c.

8. Assuming 80,000 maunds to be the district out-turn, one-fourth may be consumed in the district and one-eighth may find its way out of the district without going to Khoorja, *i. e.*, in all 30,000 maunds. It is, as far as I can learn, probable that about this average of cotton comes in to Khoorja from other districts, *i. e.*, to every 50,000 maunds of cotton of this district's growth sent to Khoorja, 25,000 to 30,000 maunds come in from outside. I write this under correction when I can secure accurate information; but whether it is a matter of 10,000 maunds more or less, the result as far as the returns for the past three years (1865-67) stands the same.

9. Believing, then, that the Khoorja sales fairly represent the district out-turn, it must, I think, be presumed that the estimates sent in for 1865, 1866, and 1867 are very far below the truth.

It is true that the sales only partially consume the cotton grown in each year, as the cotton is plucked towards the close of the year; but taking the demand or rather consumption for the three years (1865-67) to average 88,000 maunds per annum, it is very unlikely that the out-turn only averaged 84,000 maunds per annum.

10. I am at a loss how to account for the low returns of those three years, beyond the probability that the Putwarees prepared mere estimates instead of furnishing actual facts. I confess myself to have been taken aback when I saw the result of the papers of this last khurreef; but I have no reason to think that there can be any remarkable error in the present actual returns.

BOOLUNDSHUHUR; *The 10th April 1869.*

C. A. DANIELL,
Offg. Collector.

No. 409, dated 17th April 1869.

Memo. from—W. C. PLOWDEN, Esq., *Secy. to the Board of Revenue,*

To—*The Secretary to the Government of the North-Western Provinces.*

In continuation of No. 321, dated 30th March, forwards a return showing the area of land under cotton cultivation during 1867-68 and as estimated for the present year.

No. 63, dated 30th March 1869.

Memo. from—E. COLVIN, Esq., *Superintendent, Terai District,*

To—The Secretary to the Board of Revenue, N. W. Provinces.

In answer to his Office memorandum No. 313, dated 24th instant, has the honor to forward the cotton return :—

District.	Tehseelee or Pergunnah.	Area estimated for 1867-68. Beegahs.	Acres.	Estimated out-turn in cleaned cotton, maunds.	Area estimated for the present year. Beegahs.	Acres.	Estimated out-turn in cleaned cotton, maunds.	Remarks. Condition and prospects of the crop.
1	2	3	4	5	6	7	8	9
				Mds.			Mds.	
Terai.	Bagpore ...	2,346	385	197	2,704	449	451	
	Rooderpore ...	1,863	298	243	2,096	335	117	
	Gudurpore ...	710	114	64	887	142	125	
	Kilpooree ...	257	41	34	321	51	52	
	Bilheree ...	91	15	8	114	19	11	
	N. Mutta ...	346	56	41	403	65	37	
	Total ...	5,613	909	587	6,525	1,061	793	

TERAI SUPERINTENDENT'S OFFICE;
The 29th March 1869.

E. COLVIN.
Superintendent.

No. 994, dated 30th April 1869.

RESOLUTION—By the Govt. of the N. W. Provinces, Revenue Department.

Read a letter No. 321, dated the 30th ultimo, from the Secretary to the Board of Revenue, North-Western Provinces, submitting a statement of the area and estimated out-turn of the cotton crop in the Districts of the North-Western Provinces for the year 1868-69 as compared with 1867-68.

OBSERVATIONS.—The tabular statement of the area under cotton during the past season, and its estimated out-turn, submitted by the Board and now completed and corrected, is subjoined* to this Resolution.

* Printed with Board's letter No. 321, dated 30th March 1869, with this Proceeding.

It shows that while in 1867-68 nearly 1,300,000 acres were sown with cotton, only 890,000 acres were sown in the past season; and whereas in 1867-68, 727,026 maunds were produced, last year only 552,516 were obtained. Reduced to lbs. the produce of 1867-68 was 58,162,080, and of 1868-69, 44,201,280 lbs.; and even this estimate is probably too favorable, as in the past year there was considerable loss not only from drought, but from severe frost in December.

The crop of the former year (1867-68) was very short, there having been extensive and heavy losses in consequence of the prolonged and untimely rain, which injured the plant and destroyed the pods. In the present year, the deficiency is of course due to the directly opposite cause of the long-continued drought.

Taken by divisions, the area and estimated out-turn are as follows :—

Divisions.	1867-68. Area.	1867-68. Maunds.	1868-69. Area.	1868-69. Maunds.
Meerut	487,803	222,963	171,934	199,567
Rohilcund	143,154	99,758	126,261	68,677
Agra	312,732	261,923	260,271	161,661
Jhansie	54,497	23,747	49,387	9,550
Allahabad	253,219	87,012	256,752	96,993
Benares	23,529	6,755	19,910	5,928
Ajmere	12,792	24,868	5,868	10,140
Total ...	1,287,726	727,026	891,444	552,516

Thus in almost every Division there is a falling off from last year; and in all a very heavy falling off from the normal crop, which is shown in the margin in lbs. for the last six years.

1861-62	95,980,000
1862-63	114,000,000
1863-64	81,493,200
1864-65	132,257,280
1865-66	62,663,280
1866-67	85,684,920
1867-68	58,162,080
1868-69	44,201,280

The causes of this deficiency were various in different localities. Everywhere there was a very sufficient inducement for the cultivator to sow cotton largely, for the average price throughout the Provinces steadily rose by about one rupee every month from Rs. 17 per maund in April to Rs. 22 in September.

In the lower cotton districts, as Banda, an unusually large area was sown in consequence of the apparent early setting in of the rains; but then followed their long suspension, and it seemed as if the crop would entirely perish from the drought. Much was lost, but "the heavy showers in September restored to life the withered crops, and the out-turn (as compared with the area sown) will be more than last year." This is the case generally throughout the greater part of the Allahabad Division.

Elsewhere the setting in of the rains was so long deferred that the ordinary season for cotton sowing passed away. But nevertheless when rain fell in the latter half of July, sowings did take place, though to a less extent than in ordinary years. Then supervened the drought of August, which was broken only by occasional and partial showers, and not relieved as in the eastern districts by a general fall in September. Hence the area which was sown produced but a scant return. There is an exception to some extent in the districts of Boolundshuhur and Allygurh, where, partly from the help of the canal and partly from better seasonal conditions, the out-turn has greatly exceeded expectation.

As regards Boolundshuhur, Mr. Cairns Daniell is satisfied that his estimate is close to the truth. He has ascertained that the sales for the year in the Khoorja bazar have been about 80,000 maunds, and the sales at Khoorja represent nearly the total amount grown, for about one-fourth of the crop is consumed in the district, and about an equal quantity is imported from other districts into Khoorja. In this view the statement in the margin, which shows the sales at Khoorja from 1863 to 1868, is of interest; the quantity has gradually decreased from 120,000 maunds to 80,000.

	Maunds.
1863	120,000
1864	110,000
1865	95,000
1866	90,000
1867	80,000
1868	80,000

The growth of cotton as an article of commerce continues practically unknown in the Benares Division and in the hills.

The same causes which affected the fertility of the indigenous crop prevented the Hingunghât seed from having a fair trial. The supply of seed also reached Collectors at a very late period. There seems some doubt whether it is suited to the soil and climate of these Provinces; but Collectors should every where be enjoined to give it a full and complete trial in the coming season, carefully to watch the results, and duly to report them in their annual cotton return. A report on the subject is shortly expected from the Board.

Appended to the Board's letter are some extracts of interest relating to the price of cotton, the injurious effect of the scarcity on the cloth market, and the comparative demand for English and country manufactures. With the upper and middle classes the preference is no doubt for the English manufacture; but the lower classes, it appears, still hold to the cheap and strong country cloth. The remark of Mr. Montague, Deputy Collector of Furruckabad, is of importance in this respect:—"The coarse country cloths are (except a few special manufactures, such as fine *pugrees*) the only native fabrics which have not been beaten out of the fields by English goods,—*garrah, guzee, adhotar, and charkhana* (the latter being merely striped *garrah*) have the market to themselves, until some coarse, strong, cheap English-manufactured article may appear."

The Elgin Cotton Mills at C[illegible] find a good demand for their thread, but the Lieutenant Governor was informed on lately visiting them that there was little demand for the[illegible] if the Hingunghât staple could be successfully cultivated in the Doab and Bundelcund, it would prove a great assistance to this spirited undertaking, and the subject demands the attention of the Commissioner of Allahabad.

In future the Lieutenant Governor would wish any information of collateral interest or importance to be embodied by Collectors in their annual cotton reports. For example—

The quantity of cotton which comes into the local market from other districts or foreign territory, the probable amount of local consumption, and the balance exported. In 1862 it was estimated that, of 96,000,000 of lbs., one quarter was used in the districts which grew it; one quarter was taken for consumption in the eastern districts which grew no cotton; and one half found its way for eventual exportation by sea. The yield being less in the present year, the proportion locally consumed is probably the greater, and the proportion exported less.

The Lieutenant Governor was given to understand that a great portion of the cotton purchased by our merchants in the Agra market comes from the Rajpootana and Central India States.

Any information regarding the quality of the cotton crop of the year will be of interest, and also any particulars as to the extent to which it is screwed. Both at Agra and Cawnpore progress is being made in this direction. The number of screws and the estimated work done by them should, as far as possible, be stated. Complaints were made to His Honor at Agra by the European merchants of their liability to frauds in purchase; and it was said that a modification of the Cotton Frauds Bill would be useful if it only afforded facilities of effective prosecution. It was admitted, however, that there were great practical difficulties in fixing the blame upon the guilty parties, as the person who comes into the market is generally a middle-man who is unable to guarantee the quality of the bales throughout. The subject is one of great importance, and deserves the attention of those Collectors who have large cotton marts within their jurisdiction.

The progress of the Elgin Mills should be noticed by the Collector of Cawnpore, with any particulars bearing on the manufacture and sale both of English and native pieces and thread.

ORDERED, that copy of the foregoing be forwarded to the Secretary to the Board of Revenue, North-Western Provinces, for the information and guidance of the Board, with reference to his letter No. 321, dated 30th ultimo.

GOVERNMENT OF INDIA.

PUBLIC WORRS DEPARTMENT.

PROPOSED BRANCH RAILWAY FROM THE GREAT INDIAN PENINSULA LINE TO CHANDA AND THENCE TO SOME POINT BELOW THE 3RD BARRIER OF THE GODAVERY.

No. 29, dated 6th December 1869.

From—T. W. ARMSTRONG, ESQ., M. I. C. E., *Offg. Secy. to the Chief Commr., Central Provinces, in the P. W. Dept.*,

To—*The Secretary to the Government of India*, P. W. DEPT.

I am directed to forward, for the consideration and orders of the Government of India, a Minute by the Officiating Chief Commissioner on a branch Railway from the Great Indian Peninsula Line to Chanda, and thence on to some point below the 3rd Barrier of the Godavery, and to solicit early instructions regarding the carrying out and completion of the surveys for the line, as proposed in the last paragraph of the same.

Dated 4th December 1869.

Minute by J. H. MORRIS, ESQ., *Officiating Chief Commissioner, Central Provinces, on a Branch Railway from the Great Indian Peninsula Line to Chanda, and thence on to some point below the 3rd Barrier of the Godavery.*

The importance of this Railway has long engaged my attention, and as this line was mentioned in the recent State papers on Railway extension as one of the Great Indian Peninsula Railway branches which ought soon to be constructed, I propose in this Minute to set forth shortly the considerations which make the early commencement of the branch line desirable.

2. I will *first* describe the country through which the branch Railway will pass; *secondly*, I will advert to the special advantages to be secured by the early opening of this branch line; and *thirdly*, I will notice a few points connected with the direction, cost, and possible future extension of the Chanda Railway.

3. The section of the Great Indian Peninsula Line known as the Nagpoor extension leaves the main line at Bhosawul, a station 276 miles from Bombay. Thence it runs through the vertile valley of Berar, and onwards through the Wurdah District into Nagpoor. One hundred and ninety-four miles from Bhosawul and 49 short of Nagpoor is the station of Wurdah, the head quarters of the Wurdah District. From Wurdah a road, metalled and bridged for the most part, leads to Hingunghât, the well-known cotton mart. This road runs for 21 miles through the best cotton-growing country of these parts; and at Hingunghât are centred the cotton, piece-goods, salt, and other trades of at least 1,500 square miles of country. This tract bears a population of about 130 souls to the square mile; it grows cotton, wheat, millet, linseed, and other oilseeds and pulses. According to the trade returns of the year 1867-68, the total value of the registered trade of Hingunghât was £250,445

sterling. Last season (1868-69) there were about 24,000 bales (400 lbs. each) of cotton sent from Hingunghât to Bombay, and at Hingunghât during the cotton season are effected the largest cotton transactions in these Provinces.

4. From Hingunghât a short (metalled and bridged) branch road, 6 miles in length, leads into the southern road, which connects Chanda with Nagpoor and with the Railway stations of Sindhee and Boree. The Hingunghât branch strikes into this southern road at the village of Jam, and from Jam runs a partially metalled and bridged road straight to Chanda, a distance of 55 miles. This road skirts the great strip of broken and wooded country which forms the water-shed of the Wurdah and Wynegunga Rivers. The road runs nearly parallel to the line of the Wurdah River. Between the road and the river stretches a belt of well cultivated country, over which the staple products are cotton, wheat, and millet. The average breadth of this belt of open plain is about 6 miles, and its population is about 120 to the square mile. The only place of any commercial importance between Hingunghât and Chanda is Wurrora, where a steady, though not an increasing, trade in cotton goes on.

5. Across the Wurdah, opposite to Hingunghât and Wurrora, is situate the East Berar District of Yeotmahal (or Woon), and behind or south of Woon lies the fine cotton-producing country of Edulabad in the Nizam's territory Hingunghât is the market to which the cotton growers of Woon and Edulabad take their produce, and whence they draw their supplies of piece-goods, hardware, and other European manufactures. The river Wurdah is easily fordable for eight months of the year; and there are scores of fords by which the traffic of the country crosses into Chanda, and takes the road to Hingunghât.

6. Although the country to the north-east of the southern road is wooded and thinly peopled, still this tract contributes largely to the road traffic. The open country of Wurdah and Central Berar has no jungles near at hand, and it draws a great part of its petty timber, grass, bamboos, baskets, fuel, and other forest produce from the wooded country of Chanda. No statistics of this trade have yet been registered, but the right to collect forest dues on exported jungle produce is annually farmed out. This lease fetches from Rs. 10,000 to Rs. 12,000 per annum; the rates of duty range from four annas to one rupee per cart-load for the different kinds of forest produce. It is therefore tolerably safe to assume that from ten to fifteen thousand cart-loads of forest produce pass annually from the north-eastern corner of the Chanda District into the Wurdah country. The quarries of excellent building stones (sandstones) which exist along the southern road are as yet unworked, save by the Government departments and the villagers of the neighbourhood. Some good sandstone is, however, taken yearly to Hingunghât, and the trade will increase as the people grow richer and communications become better.

7. The present terminus of the southern road is the town of Chanda, which contains a population of neary 19,000 souls. Chanda is the head quarters of a district. It was in past years the seat of a dynasty of Gond kings, and it possesses some important industries, among which weaving and leather working are the most conspicuous. It stands at the mouth of the outlet by which the whole trade of the lower valley of the Wynegunga, of Aheree and the great forest uplands between the Wynegunga and the Indrawuttee, threads its way through a thirty-five mile belt of jungle and reaches the markets of Wurdah and Berar. According to the trade returns of 1867-68 the total commerce of the town of Chanda amounted to £304,897.

8. The whole trade of the country is, however, not done inside the towns of Chanda and Wurrora. The people of those parts are very fond of making their petty purchases for a year or six months at one of the two great fairs which are held annually at Chanda and at Bhanduk,—a place midway between Chanda and Wurrora, which enjoys a high repute on account of the sanctity and antiquity of its temples. From the statistics for 1866, I extract a few

figures illustrative of the business done at the Chanda and Bhanduk fairs. In that year 229,000 persons came to these fairs; Rs. 30,80,555 (£308,055) of goods were brought, and Rs. 20,55,843 (£205,584) of goods were sold. Nearly all of this traffic would either be brought or be taken away by any branch Railway which might be constructed between Chanda and the Great Indian Peninsula Railway.

9. It is difficult to offer any reliable statistics regarding the miscellaneous forest products of the Chanda District. All these products find their way to the open country in the west either by the southern road, or by rugged tracks through the central jungles, or by circuitous route on the northern confines of the forest. It would occupy too much space to describe at length all the staples of this important commerce, and it will suffice to extract a short paragraph from the Settlement Officer's report, in which the forest produce of Chanda is thus described:—"Forest and jungle cover three-fifths of the district, and supply in immense profusion almost every thing necessary for life. Thus they yield timber for building, furniture, implements, carts, and boats; wood for warmth and light; bamboo and grasses for thatching, fencing, matting, basket-work, and vessels; fruits, leaves, roots, and barks for food and medicine; and fibres, oils, resins, gums, tanning substances, and dyes. From the labour of the insect world of the woods, honey, wax, tussa silk and lac are obtained, and the larger animals furnish flesh and horns and skins."

10. The mineral products of Chanda and their value can best be noticed under the *second* head to which I referred, *viz.*:—

The special advantages to be gained by the early construction of the Chanda Branch Railway.

11. The first and great advantage will be the opening of the Chanda coal-field to the Great Indian Peninsula Railway and to Central and Western India. At present all the Railways, all the factories for cleaning, pressing, and spinning cotton, all the saw-mills and other industries which employ steam power, are obliged to use English coal all over Central and Western India. The price of this coal ranges from Rs. 20 and Rs. 25 a ton in Bombay to Rs. 35, Rs. 50, and even Rs. 70 a ton in Berar. In Bengal, where the use of Indian coal is almost universal, and where Indian coal does form one-half to two-thirds the duty per ton which English coal yields, the price of coal varies from Rs. 5 a ton at the pit's mouth to Rs. 12 and 14 a ton at Calcutta, or places 150 miles distant from the coal-fields. The gain in economy of Railway working, the benefit to manufactures of all kinds, would be immense, if Chanda coal could be put on the Great Indian Peninsula Line at the same rates as Bengal coal reaches the main line of the East Indian Railway. It is quite clear that Chanda coal cannot come into practical use on the Great Indian Peninsula Railway, or in the Berar and Khandeish factories unless the Chanda coal-field be connected with the Great Indian Peninsula Line by a branch Railway. It is 60 miles from the coal-field at Googoose (a village some 14 miles due west of Chanda) to Wurdah in a straight line, and the length of a road or railway might be about 65 miles between these two points. Even if a good road metalled and bridged were made between these two points, the cost of carting the coal would be at least Rs. 12 a ton; while the cost of a really good road would come to about half the cost of a branch Railway. It seems then that a branch Railway from Wurdah to Chanda or thereabouts is absolutely required, if the Chanda coal-field is to be opened out.

12. The question then naturally arises:—Is the Chanda coal worth opening out? Our present information is not sufficiently full and precise to enable me to say definitely that the Chanda coal-field is worth opening out by a special branch Railway. The position at present stands thus: Coal was discovered on the Wurdah within a few miles of Chanda by Major Lucie Smith in 1867.

Since then coal has been found at four places in a small field (containing about three square miles) at Googoose, 14 miles west of Chanda. Coal has also been found at Chanda itself, at Bullarpoor, four miles south of Chanda, at another place 30 miles down the river Wurdah, south-east from Chanda. Rocks belonging to the Indian coal-bearing series have been found, if not continuously, at intervals over some hundreds of square miles of country above and below Chanda. These rocks extend into, and coal has been found in, both Berar and the Nizam's territory across the Wurdah opposite the Chanda coal-field.

13. During the last ten months continuous and persistent effort has been made to prove or test the coal and ascertain its thickness by putting down bore holes at several points on the supposed coal-bearing area. The appliances and skilled labour required for successful boring operations were not at first available, and our borings have gone on more slowly than I could have wished. The bore holes put down at and near Chanda itself and at Bullarpoor, though not altogether favourable as far as they go, are as yet inconclusive. A bore hole was also put down on the left bank of the Pranheita about half a mile from Bullarpoor, and six and a half feet of coal were proved at a depth of some 120 feet from the surface. The bore hole was carried on through a hundred more feet of rock, and no further seams of coal were met.

14. The only portion of the coal-field which has been so far examined as to warrant our drawing any inference, is the small (three square miles) field near Googoose. In this field a pit, sunk last season in the bed of the river Wurdah, reached good workable coal 28 or 29 feet thick. A bore hole put down 330 yards away from this pit has gone through 34 feet of good workable coal. Of the two other bore holes put down in this field, one has been stopped, owing to a breakage in the machinery, after it had gone through 11 feet of fair coal; but before it had gone down through the beds where all the thick seams of coal ought to be, the other owing to a similar accident has been stopped before it reached the beds where we expect to find coal. A steam boring machine and three more sets of hand boring tools are close to, if they have not already reached, Chanda, and fresh bore holes will be put down at the points C. and D. These borings will be done, and the proving of the Googoose field will probably be complete in another four weeks' time.

15. Dr. Oldham, Superintendent of the Geological Survey, the Deputy Superintendent, Mr. Blanford, two Assistants, and the Mining Engineer, Mr. Mark Fryar, are all at this moment in the Chanda District, examining and proving the supposed coal-bearing areas. Now that efficient machinery has reached Chanda, I have no doubt that not only the Googoose field, but a considerable area of the coal-bearing rocks will be proved by the end of this open season.

16. While the existence and thickness of the coal was being proved by borings, the quality of the Googoose field has been tested in locomotives on the Great Indian Peninsula and East Indian Railways, and in a stationary engine at Kamptee. The coal was taken from the out-crop in the bed of the river Wurdah, and so was not a fair specimen of what the seam will produce. Still it did about half the duty of English coal, and about three-quarters the duty done by Raniguj coal. Dr. Oldham, Superintendent of the Geological Survey, writes that the Chanda "coal, however, did the work required of it, and in a satisfactory manner." And he adds that the different tests to which the coal has been put "prove that good useful fuel exists near Googoose in considrable quantity." Moreover, during the present month, the pit at point B. on the sketch map has reached the uppermost coal seam which is four feet thick. The coal from this seam is pronounced to be much superior to what was sent to the Railway for

trial from the river bed pit marked A. Dr. Oldham saw some of this coal stacked on the surface, and pronounced it to be "good Indian coal." A sufficient sample of this B. pit coal will shortly be sent for trial on the Great Indian Peninsula Railway.

17. Thus though our information is as yet imperfect, it may be safely said that a large supply of good useful coal exists in the Chanda coal-fields; and that the borings of the next six months will fully prove whether or no the Chanda coal-field is very large and practically inexhaustible.

18. The next advantage to be gained by the opening of the branch Railway to Chanda would be the connection of the largest cotton field in Central India (Berar only excepted) with the Great Indian Peninsula Railway. It seems quite unnecessary to dwell here on the advantages which 60 or 70 extra miles of Railway would confer upon the Indian producers; upon the English manufacturers and mill hands; and upon consumers of Hingunghât cotton all over the world. Mr. Rivett-Carnac's picturesque and yet faithful reports have set forth the difference between the carriage of unpacked cotton in clumsy bundles on little country carts along dusty roads, and the transport of clean cotton, well packed and pressed into bales in the closed waggons of a Railway line. The cotton produce of Hingunghât and the cotton-fields to its south and east will never be properly packed, nor will it reach the home market in the cleanest possible state, until pressing and packing establishments grow up in different parts of the cotton field. Such establishments will never be supplied in sufficient numbers until a Railway runs through the field. The Government of India recognised the need which the cotton traffic had for Railway facilities, when it ordered the construction of the branch Railways to Khamgaon and Oomrawuttee. It is of course difficult to set a money value upon the benefit which a Railway from Wurdah through Hingunghât to Chanda would confer upon the Wurdah River cotton field; but it is at any rate safe to predict that the construction of such a Railway would result in the cheapening of the Hingunghât cotton at Liverpool, without reducing the price which reaches the producer, and that it would be a powerful, perhaps the only effectual, means of securing the introduction of packing and cleaning machinery over the Hingunghât cotton field.

19. There is one feature about the Chanda grown cotton which makes it more particularly in need of Railway carriage. Cotton grown round Hingunghât is picked in November and December, and most of it is cleaned, pressed and put on the Railway by the following March or April. But the cotton grown south and east of Wurrora is picked in the month of April, and it rarely happens that the whole crop is cleaned and carried to the Railway before the rainy season begins. Only last season just as the rainy season began, long strings of cotton carts from Wurrora, Chanda and the Woon country were seen making their way to Hingunghât, and it appeared on enquiry that much cotton was still left behind. When once the rain falls cotton carts cannot get along the country roads, and a good deal of the Chanda spring (or "jhirree" as it is locally called) cotton crop is kept back every year, and does not reach the market till the ensuing open season. In this way the farmers lose six months' interest on their money, and the cotton is late in reaching the Lancashire looms. If a branch Railway ran to Chanda, this cotton could all be put upon the waggons, and carried off to Bombay as soon as it might be ready for export.

20. Among the many indirect advantages which the Railway would confer upon cotton growers, would be the certainty that no farmer, even if he gave up all his land to cotton, would ever be in difficulties for food so long as there were good harvests along any part of the Great Indian Peninsula Railway. I will offer just one instance of the way in which the present imperfection of our communications acts upon the price of food during the rainy season, and so compels farmers to grow food grains when their lands might be more profitably occupied in the production of cotton. The town of Wurrora is, as I have mentioned

the chief market of the country between Hingunghât and Chanda. At this place the price of millet, the staple food of the country, ranged during the whole of the rainy season from 10 to 12 seers the rupee. This price had shown scarcely any symptoms of falling even by the middle of October, although there was absolute certainty that a bumper rice crop and a full millet crop would be garnered in a few weeks' time. Prices continued to hold up because the stocks were very low, and there was no possible way of replenishing them until the cross roads had become passable. During the last week of October and first week of November several convoys of pack bullocks reached Wurrora with millet which they had brought from the nearest Railway station. The price of millet at once went down to 17 seers the rupee at Wurrora and in all the country round. This is only an instance of what may happen, and generally does happen, every year during the rainy season in the Chanda country. Where people may fall into straits like this, they are obliged to grow a certain proportion of food grains, whether it pays as well as cotton or not.

21. The advantages then which the branch Railway would bring to the cotton trade of the Wurdah valley, would be that it would take the cleaner cotton more swiftly and more safely to Europe; that it would ensure its reaching markets before the fall of the next rains, and that it would enable the farmer to grow as much cotton as he could without fear of starvation or want.

22. The next special object which the Chanda branch would subserve is the opening out of the Aheree timber forests. About 60 miles east of Chanda are the forests of Aheree, 32 square miles of which the Government Forest Department is now working. There appear to be broad forests of fine timber for many miles north of Aheree; but the two richest and best situated patches of teak and sheshum forests are being worked by the Government Forest Department. These two forests can, it appears, easily yield 4,000 first class logs per annum, besides an abundance of petty timber. Each of these logs will yield an average of 30 cubic feet, and first class timber has for some years averaged from 2¼ to 3 rupees a cubic foot in the Nagpoor market. Notwithstanding the great store of Aheree timber which is past its prime, and absolutely wants to be cut, and notwithstanding the great demand for, and the high price of, teak at Nagpoor and in Berar, still the Forest Department has hardly been able to bring a single Aheree log into the Nagpoor market during the last two years. The obstacle has been not the difficulty of working the forest, but the absolute impossibility of carrying large logs from Aheree to the Railway. In 1867 some Native carriers undertook to haul Aheree timber to Nagpoor at a very high rate. They brought some 30 logs or so, none of which contained much more than 30 cubic feet; some magnificent pieces of timber had actually to be cut into three lengths before they could be got along at all! Since 1868 no contractors have come forward, and the Aheree forests are at present virtually closed to the Nagpoor markets.

23. The Inspector General of Forests in a recent note on the Aheree forest question, recorded his opinion that a tramway or a good road would have to be made from Aheree to the Railway, before the Aheree timber could come into the market. Aheree is 60 miles beyond Chanda, and the Aheree timber trade alone would not suffice to support a branch Railway between Chanda and Aheree. Still this timber trade would benefit enormously, if it found the Railway at Chanda instead of at Wurdah; and the Aheree timber route, whether by river, or by road, or by a light tramway, would be a very valuable feeder to the Chanda Branch Railway. When the Aheree forests are really opened, a net annual revenue of nearly one lakh of rupees will accrue to the Forest Department; a good and sure supply of fairly cheap timber will be assured to the woodless countries of Nagpoor and Berar, and a market will be opened for the products of the Aheree and Bustar forests.

24. *Fourthly.*—The Chanda Railway would, if produced 60 miles to Dewulmurree, or some other place close to the Aheree Government forests,

connect the Godavery river navigation with Western India. Dewulmurree and Moogeylee are at the foot of the 3rd (the highest and the most insuperable) Barrier of the Godavery. After an outlay of about 60 lakhs (£600,000), and after more than ten years of designing, estimating, working and writing, and after the expenditure of several valuable lives, the Godavery will probably, in the course of two or three years, be in some shape navigable from the sea to the foot of the 3rd Barrier. The navigation will indeed be far from perfect, and it will be practicable for only seven or eight months of the year. But still the river will in some sort be open, and the navigation will be improvable. But when the Godavery navigation reaches Dewulmurree, the scheme will still be quite incomplete. The navigable head of the river will still be 60 miles from the nearest town, 60 miles from the nearest stretch of cultivated British territory, and 130 miles from the Railway, or from the fertile cotton fields of the Wurdah and Poornah valleys.

25. It is quite clear that the Godavery navigation scheme, if it is to take effect at all, can never stop at Dewulmurree. The trade between the sea and the foot of the 3rd Barrier could not pay the cost of maintaining the navigation, much less meet the cost of interest on the capital outlay. The problem will then be, what is the best mode of connecting Dewulmurree with the Railway system of Western India and with the countries whence the Godavery must draw its trade? The Godavery officers advocate a canal across the chord of the arc of the river where the 3rd Barrier occurs, and they contemplate the canalisation of the Wurdah and Wynegunga above the 3rd Barrier. No precise designs and estimates have yet been submitted for the works at the 3rd Barrier. The canalisation of the Wynegunga has been pronounced impossible, save at an enormous expense: that of the Wurdah as far as Hingunghât would probably cost much less, and the Wurdah might perhaps be made navigable on to Poolgaon (where there is a Great Indian Peninsula Railway station) at a fairly moderate outlay. Although no precise estimate has yet been framed of the expense of the 3rd Barrier works, yet it was stated some years ago on the best authority that they would cost about 30 lakhs (£300,000). During the last year or so 50 lakhs (£500,000) have been taken as the sum to which the 3rd Barrier works' estimates would probably reach. Considering how the Godavery estimates have grown as the work went on, we should probably be quite safe in taking 75 lakhs (£750,000) as the ultimate cost of the 3rd Barrier works and the canalisation of the Wurdah. Now the distance from Chanda, in a direct line to Moogeylee (a place situated on the right bank of the Pranheita, just opposite Dewulmurree) at the foot of the 3rd Barrier, is about 50 miles. Probably a Railway between these points would be 60 miles long: the line would cross the Pranheita at or near Kirmirree on the rocks which form the head of the 3rd Barrier. Sixty miles of Railway at £7,000 a mile would cost 42 lakhs (£420,000). And a Railway from Wurdah on the Great Indian Peninsula Railway *viâ* Hingunghât and Chanda to Moogeylee, would connect the two lower reaches of the Godavery with the cotton lands of Central and Western India; it would give means of transit all the year round, instead of for only seven months, and it would secure to the public treasury and to the people of Berar and Nagpoor the valuable timber of the Aheree forests.

26. It seems unnecessary to speculate here on what the Godavery trade will be. A full exposition of the sources from which this trade will come has been set forth in Sir R. Temple's Godavery Minute and in other papers. But it may suffice to state that the Godavery scheme and its huge outlay will be quite unfruitful of results, if the navigation stops at the foot of the 3rd Barrier, and if the river is not by some means linked in with the Great Indian Peninsula Railway system. Of the two schemes for bridging the gap between the railway and the river, the plan of a Railway from Chanda to Moogeylee would be the more secure, the more effective, the more speedily executed, and the more economical.

27. I have now enumerated the four special objects which will be gained by a branch Railway from the Great Indian Peninsula Line to a point below the 3rd Barrier of the Godavery. They are briefly—

1.—The opening up of the Chanda coal-field.

2.—The opening out of the Hingunghât cotton country.

3.—The utilisation of the great timber forest of Aheree.

4.—The completion of the Godavery scheme, and the connection of the Godavery navigation with Central and Western India.

28. But there are a number of other incidental advantages which would flow from the establishment of the Railway. When the coal-field shall be opened and regularly worked, the rich iron ores of Chanda would before long be smelted at foundries near the coal-field. Then again the coal will be carried to the Gadavery, used in its steamers, and carried to the coast, and thence on to Madras and Southern India in exchange for salt and rice. Then again the Hyderabad and Madras lines of Railway may some day be linked with the Central Indian. If such were the case—and the day when we shall see this is not, I trust, very distant—then the Chanda coal would compete at an advantage with English coal on the Hyderabad and Southern Indian lines of Railway. Possibilities and probabilities such as these do not of course deserve much weight, when the expediency of commencing the Chanda branch line is being considered, but the existence of such possibilities merits incidental mention in a note of this kind.

29. I will now advert briefly to a few points connected with the direction, the gauge, and the possible cost and earnings of the Chanda branch line.

30. It has been proposed that the Chanda Railway should start from the Boree Station (18 miles west of the Nagpoor terminus), and take the same line as the southern road. But the preferable route seems to be for the branch line to leave the main line at Wurdah, and thence to make for Hingunghât. From Hingunghât, where the Wunna River would be crossed at such point as the surveys might dictate, the Railway should take the best line for Kanbarra, crossing the Pothru Nuddee at some place where the foundations might be favourable. From Kanbarra it would naturally take a direction very nearly, if not quite the same, as the southern road. If the Googoose field turns out to be the main coal-field, then the line would go either from Wurrora to Googoose, or *viâ* Bhanduk and Goorpete to Googoose. If the branch Railway is carried on to Chanda and Moogeylee, then there would, supposing Googoose to be the main coal-field, have to be either a branch from Goorpete to Googoose, or the line would go from Wurrora round *viâ* Googoose to Chanda. The total distance from Wurdah to Chanda, including a branch nine miles long to Googoose, would be something less than 80 miles. If the branch to Googoose were not undertaken, or if the line were taken to Googoose only and not to Chanda, the total length would be less than 70 miles, and the gradients throughout the whole distance would be exceedingly easy. Until the completion of the surveys, the exact direction of this Railway must remain more or less conjectural, nor is it possible at present to make any reliable estimate of the bridge work necessary on the line. But I think it would be safe to say there are only five streams between Wurdah and Chanda which would require more than 60 feet of waterway. The only really considerable bridge out of the five would be the viaduct over the Eraee in the neighbourhood of Chanda. There would be scarcely any outlay for taking up land; the roadway of the Hingunghât and the southern road would be available for rails for a considerable portion of the whole distance; and sleepers of excellent teak could be delivered from the Aheree forests at an average cost of about 1 rupee to 1¼ rupee per cubic foot. Throughout the whole length of the line excellent building stone is very abundant close at hand; and lime also is at most points easily collected. Any estimate for such a line must, of course, be more or less conjectural; but it seems to me that a State Railway with light rails, but of the full Indian gauge, could be constructed from Wurdah to Chanda at a cost of not more than £5,000 a mile, including rolling-stock.

31. As this Minute discusses the extension of the Chanda Railway to Moogeylee, at the foot of the 3rd Barrier of the Godavery, that portion of the proposed line must not be left unnoticed. The country through which this line would have to pass is crossed by no metalled road, and comparatively little information exists regarding its gradients and its drainage. Still the Civil Officers and the Godavery Engineers have repeatedly been over the ground, and the following information regarding the distances may be relied on:—

Chanda to Kirmirree	...	...	... 34 *miles.*
Kirmirree to *Moogeylee*	...	...	... 23 „

The drainage to be crossed would be greater than in the case of the other section of the line; the Pranheita bridge, though the foundations would stand on the solid gneiss dyke which forms the river barrier, would be a heavy work; population is more scanty and labour would be dearer along this length, and I would therefore put down the cost of this section of the line at not less than £7,000 per mile.

32. The total cost of the line from Wurdah *viâ* Hingunghat and the Chanda coal-field to the navigable reaches of the Godavery would thus be—

	£
Wurdah to Chanda with branch to Googoose, 80 miles at £5,000 per mile	400,000
Chanda to Moogeylee with bridge over Pranheita, 57 miles at £7,000 per mile	399,000
or about £800,000 in all.	

This total, it will be observed, is very little more than would be required to construct the navigation works at the 3rd Barrier of the Godavery, and to canalise the Wurdah up to Poolgaon.

33. Now if the branch Railway were completed at the above cost, then it would require £80,000 of gross earnings to cover working charges, and pay 5 per cent. on the capital outlay. Any estimate of what the traffic may hereafter reach must of course be somewhat conjectural; but it may be pretty safe to assume that in any one year 10,000 bales of cotton would want to be carried 50 miles to Hingunghât; 5,000 more bales would go 120 to Moogeylee for the supply of Calcutta and the East Coast; 30,000 tons of coal would want to be carried 70 miles to the Great Indian Peninsula Railway; 10,000 tons of coal would go 80 miles to the Godavery navigation; 4,000 tons (4,000 logs averaging a ton each) of Aheree timber would want to be carried 120 miles from Moogeylee to Wurdah; 20,000 tons of miscellaneous goods, such as forest produce, piece-goods, country cloth, hardware, salt, grain, cocoanuts, hides, &c., would have to be carried 120 miles. The above estimates must, I think, be regarded as low, when the resources of the tract are considered. The money out-turn of such a traffic would probably stand thus:—

		Rupees.
Cotton receipts at 3 annas per ton per mile	...	41,250
Coal „ at ¾ anna „ „	...	1,36,000
Timber „ at 1 anna „ „	...	30,000
Miscellaneous at 2 annas „ „	...	3,00,000
Total	...	5,07,250

This would give 5 lakhs (£50,000) out of the desired 8 lakhs (£80,000), without taking credit for any passenger traffic, or for any fresh trade between the Godavery River and the Great Indian Peninsula Railway. There would certainly be more coaching earnings, and there can be no doubt whatever but that a very considerable traffic would arise between the East Coast and Central India as soon as the Godavery navigation and its connection with the Great Indian Peninsula Railway system are completed. I offer a low estimate of the Chanda Railway trade in coal and cotton and miscellaneous goods, becaus-

it seems best always to under-estimate than to over-estimate the anticipated receipts in a proposal of this kind. But if the Chanda coal should ever come into use on any part of the Great Indian Peninsula Railway beyond Bhosawul, or on the Hyderabad and Southern India lines, or on any other line (as for instance a Chuteesgurh line), the coal traffic would increase indefinitely. And it has often been stated in papers on the Godavery that the trade between the East Coast and Central India is certain to expand enormously.

34. I have in the foregoing paragraphs taken for granted that the Chanda Branch Railway should be of the same gauge as the Great Indian Peninsula main line. I have done this because I understand that a branch, which is to bring coal on to the main line, ought never to break gauge. Breaking gauge would, it is acknowledged, involve the shifting of every ton of coal from one truck into another at Wurdah, and it would also involve a good deal of breakage and wastage. I am unwilling to pronounce an opinion on this question of breaking gauge, for I have no access to any reliable estimates of the saving which a reduction of gauge would secure; but it strikes me that any mechanical difficulty in shifting the coal once at Wurdah from the narrow gauge trucks into the main line trucks should not be insurmountable; and if the Chanda coal is worth anything, and I believe it to be good sound coal, it ought to bear shifting once at Wurdah, without involving very great loss by wastage and breakage. The question of the gauges has doubtless been under the consideration of the Government of India. I confess that I am myself greatly in favour of cheap Railways, with a narrow gauge or light rails, for this country; and if it should be deemed desirable to try a narrow gauge branch Railway in any part of India, then it would seem that the Chanda Railway might not be unsuited for such an experiment. For there is not I fear much probability that the eastern terminus of this branch Railway will be linked, at any very early date, into the Madras and Hyderabad Railway system.

35. In conclusion I would say that from time to time further information shall be promptly submitted to Government regarding the progress of the coal borings and coal testings. Fresh facts are being discovered every day; while this paper was being written, more coal indications have been brought to light, and it is more than probable that by the time this Minute has reached the Government, Dr. Oldham will be in a position to pronounce favourably regarding the quantity of the coal in the Chanda field. Meanwhile I solicit that the Supreme Government be pleased to allow us to take advantage of the present open season, and complete the surveys for the line as far as Chanda and Googoose, if not to the foot of the 3rd Barrier. The Officers required for the work could be spared without difficulty from some of the divisions where work is at present slack, and the surveys could be finished this season without asking the Government for a single extra Officer, and without costing more than Rs. 5,000 or Rs. 6,000 for contingencies. In this way the surveys and the estimates could be submitted to Government during next rains, as soon as full information regarding the coal-field and its capabilities are available.

No. 8 R, dated 3rd January 1870.

From—COLONEL R. STRACHEY, R. E., *Offg. Secy. to the Govt. of India*, P. W. DEPT.,

To—*The Chief Commissioner of the Central Provinces.*

I am directed to acknowledge the receipt of your Officiating Secretary's No. 29, dated 6th December 1869, submitting a Minute by yourself, proposing to undertake the survey of a line of Railway from the Great Indian Peninsula Railway to Chanda, and thence to some point on the Godavery below the 3rd Barrier; the construction of such a line being advocated in the special interests of the coal of Chanda, the cotton of Hingunghât, and the forests of Aheree, as well as with a view to the connection of the Godavery navigation with Central and Western India.

2. The importance of these several objects is fully recognized by the Government of India, and although the available information as to the extent of the Chanda coal-fields, and their probable yield, is still imperfect, there appears to be good ground for the expectation that the construction of a cheap Railway in this direction, at least as far as the coal-fields, will be justified. The Governor General in Council is therefore pleased to sanction the employment of the Officers whose services are stated to be available, for surveying and investigating this project, and drawing up an estimate of the probable cost of carrying it out. The first object of the survey should be a line of Railway as far as the coal-fields, but if the time will admit of it, and you have Officers available, the Governor General in Council will not object to your extending the surveys as far as the 3rd Barrier of the Godavery.

3. The information which is at present before the Government of India is not sufficiently complete to enable the course of the line to be indicated with any precision, but it is evident that Hingunghât, as a great cotton mart, and the chief collieries of the Chanda District, are obligatory points. And since Hingunghât is to be on the line, the map shows that Wurdah, as recommended by you, should probably be the point of junction with the Great Indian Peninsula Railway, in order that the cotton may have as direct a route to Bombay as is consistent with keeping down to the lowest the total mileage of new Railway to be constructed.

4. The precise point where the coal-field should be entered cannot be named, until more certain knowledge has been attained of the extent and locality of the coal measures of the district. If the coal found near the town of Chanda is sufficient in quality and quantity to meet all demands on it, the line might go there: if Googoose is the more favourable locality for coal working, the line should go to this place. Again, if works at the three sites where coal has been found, *viz.*, Chanda, Googoose and Bullarpoor, are likely to find simultaneous employment, it will become matter for consideration how the main line should be carried so as to serve all the localities in the most convenient manner, and whether branches would be needed or not. Possibly the coal from the Googoose pits might be brought down the river to Bullarpoor, if an extension of the line to that place was desirable.

5. Beyond the coal-fields the main object of the line would be to give a connection with the navigable portion of the Godavery, and thus open out a route for the export of coal and the produce of the Central Provinces, to the sea and to the Madras Presidency.

6. The possibility of an eventual junction with Hyderabad should be also kept in view in considering the general direction of the line near Chanda. When the line from the Great Indian Peninsula Railway to Hyderabad is constructed, a junction from Chanda to Hyderabad would give the means of distributing coal all over the southern part of the Deccan and the northern portion of the Madras lines, a matter of the greatest economical importance. Such a junction, if crossing the Pranheita River near Chanda, might, it is believed, be carried through some of the best cotton districts in the Nizam's territories, and from it the communication to the Godavery might, perhaps, be made on the right bank of the river. These points call for careful consideration.

7. In any event, it may be concluded that Wurdah, Hingunghât, and the neighbourhood of Chanda will be on the line. Between Wurdah and Hingunghât there exists a road 21 miles long, and for the most part bridged and metalled. A line drawn south-east from Hingunghât strikes at a distance of 12 miles the southern road to Chanda, which is partially metalled and bridged. If then the levels and curves of these roads can be adapted to any suitable kind of Railway, and if they possess sufficient width for a single cart-way, and a single Railway track, the expense of the embankment, of the land, and possibly of some of the bridges will be saved. Nor is this the only advantage to be gained by utilising the road, for all materials can be carted to

the works at less cost, and existing branch roads will act as feeders to the Railway, while such commerce as the construction of the present road has created in the villages in its neighbourhood, will form the nucleus of an expanding trade. So far, therefore, as present information extends, there seems ground for enquiry whether the line of the road should not be followed where practicable.

8. It is possible that this condition might necessitate the adoption of a narrow gauge, and it is almost certain that the bridges would, if utilised, not bear the weight of a broad gauge locomotive. Considering the absolute necessity for economy of first cost in the construction of Railways by the State, the question of the gauge cannot be finally decided without reference to the comparative cost of different gauges. But it is so certain that the economy in the use of a gauge of say 3 feet 6 inches over that of the Great Indian Peninsula Railway will be very great, that the Governor General in Council has little doubt of its superiority in this case, whether the width and circumstances of the existing road render such a limit necessary or not. The line, therefore, where it deviates from the road, might be located with sharp curves, and the whole designed for a 3 feet 6 inches gauge, but an alternative estimate for a 5 feet 6 inches gauge Railway for low speed on the same location should be also framed. In the estimate for the narrow gauge, the special arrangements proposed for the transfer of coal and other goods at Wurdah should be included, and their details explained. On this subject the Governor General in Council will only further remark that the cost of shifting goods at a junction is an absolute amount which may be determined for each article, and balanced against the saving which might result from the use of a narrow instead of a broad gauge for a given number of miles, and that mechanical means can be adopted for reducing the cost of transhipment of any particular kind of traffic to a minimum.

9. It may be added that the coal traffic on the Great Indian Peninsula Railway will probably be mainly to supply the wants of the eastern portions of the Great Indian Peninsula system of lines, and can hardly develop into a very large business. The main demand on the Chanda coal will, so far as an opinion can now be formed, eventually be for the Railways of the central and southern portions of the Deccan and Madras, and attention should from the outset be given to this feature of the question.

10. It should be impressed on the Officers entrusted with the investigation of this scheme, that the greatest economy must be studied in designing this Railway for the special wants that it is desired to supply. The expected traffic is not a highly organized one, comprising passengers of many grades in society, but that of a few staple articles of produce requiring little special accommodation, and the principles embodied in the general instructions* to Officers employed in drawing up projects for State Railways are entirely applicable to this line. The road and sub-way must be good and substantial, while all elaborate buildings and expensive works may be postponed until the development of the country and of its trade has made their construction desirable.

* See Memo. appended.

IRRIGATION OPERATIONS OF FUSL RUBBEE IN THE N. W. PROVINCES UP TO 30TH NOVEMBER 1869.

LAND IRRIGATED (APPROXIMATE). Zillah.	Acres.	RAIN-FALL. Total from 1st April to 30th November 1869.	Average of nine preceding years for the same period.	REMARKS.
Saharunpoor ...	7,879	16·9	36·8	The closure of the Ganges Canal came to an end on the 22nd instant, the Myapor regulator being opened on that date at 2 P. M. The expenditure of water was due to absorption principally, as there was but little demand for irrigation.
Moozuffernuggur	4,755	27·8	24·6	
Meerut ...	6,109	16·4	22·7	
Boolundshuhur ...	...	19·3	19·1	No rain fell during this month in any of the districts.
Allygurh ...	...	22·5	24·9	Water for sugar-cane was in slight demand towards
Muttra ...	...	18·8	23·6	the close of the month.
Agra ...	...	25·7	23·9	The Eastern Jumna Canal re-opened on the 4th instant.
Etah ...	...	21·5	27·7	
Mynpoorie ...	...	32·4	30·0	
Futtehgurh ...	...	31·6	29·5	
Etawah ...	...	36·7	28·1	
Cawnpoor ...	...	34·0	29·2	
Dehra Doon ...	1,498	70·1	67·1	
Bijnour ...	...	27·7	28·5	
Terai ...	...	43·6	42·1*	
Bareilly ...	...	39·0	35·7	
Jhansie ...	...	51·9	32·0	
Humeerpoor ...	...	38·2	31·0	
TOTAL ...	20,241	...	...	

CANAL DIVISIONS.	WATER DISTRIBUTED DURING NOVEMBER 1869. Depth in Canal at Regulating Gates. Full supply, feet.	Actual through, one foot.	Gross consumption, cubic feet, per second. Estimated full Discharge.	Actual average throughout.	NAVIGATION RETURN, GANGES CANAL. Nature of Traffic.	Up. Mds.	Up. No.	Down. Mds.	Down. No.	Total Up and Down. Mds.	Total Up and Down. No.
(GANGES CANAL. Northern ...	9·00	0·79		200							
Meerut ...	6·80	0·35		62							
Futtehgurh ...	6·50	...		...							
Boolundshuhur	5·75	...	5,585	...							
Allygurh ...	6·00	...		38							
Etawah ...	4·80	...		...							
Cawnpoor ...	6·00	...		...							
			TOTAL	300							
Eastern Jumna Canal. ...	...	3·33	...	636							
Doon Canals ...	...	...	...	151							
Rohilkund Canals. ...	...	...	...	...							
TOTAL ...	...	...	...	...	TOTAL ...						

* Average for five years only. Rain-fall previous to 1864 not registered.

W. G. ROSS, *Lieut., R. E.,*
Asst. to Chief Engr., Irrigation Works, N. W. P.

ALLAHABAD;
The 21st December 1869.

PAPER BY MR. MEADOWS RENDEL ON STEAM FERRIES.

If a fixed bridge over the Hooghly is not to be constructed on account of its cost, and the question for the best substitute for it is brought under discussion, a good system of ferries will deserve consideration, beside the other proposition, which has met with favor in India, of a floating pontoon bridge.

For the purposes of their present ferry, the East Indian Railway Company has lately completed, at a cost of upwards of £ 70,000, the erection of two large pontoons, 350 feet long and from 60 to 80 feet broad,—the one at Howrah in front of their station, the other at Armenian Ghaut on the Calcutta side. These pontoons have comparatively deep water alongside them at low water, and the distance between them is a bare quarter of a mile.

For the last fifteen years, the Company has worked a steam ferry boat between the sloping jetties which these pontoons have replaced, but the jetties were of so inconvenient a nature, and the steam boat plied at such long intervals, that practically the ferry was useless, except to persons going to meet or coming from trains, and indeed such were the delays of this steamer that very many of even these persons,—myself frequently among the number,—crossed in the native row boats, or on a native steamer which ran in competition with the Company's boat and beat it.

The jetties being removed, I believe that the present Railway ferry may be made on the whole more satisfactory than a pontoon bridge, at a fourth part of its cost, and free from all its risks and interference with the river.

For passengers nothing can be better than the present boats, if only like the Liverpool boats they would run from bank to bank as quickly as they could, making the double run in say 15 minutes as they might easily do; and I do not think foot-passengers would care to exchange such a conveyance for a walk over a pontoon bridge exposed to the sun and rain.

But the present boats are quite unfit for wheeled carriages and animals, though they do occasionally carry them, the decks being encumbered with deck-houses, paddle-boxes and hatchways.

For such traffic new boats are required of a different build; suitable boats might be placed on the river for a sum certainly not exceeding £15,000 each. They should have great breadth of unencumbered deck, and be divided transversely by barriers into a series of pens to receive carriages and horses.

Steam-boats cross the River Hooghly in a course which forms the figure of the letter S, starting and bringing up with their heads against stream. Carriages would, therefore, always arrive with the horses' heads in the right position for disembarking.

The ends of the boats and perhaps, as in the present boats, an upper deck might be set apart for passengers.

There are occasional fogs on the river, but I satisfied myself, when in Calcutta, that they need be no serious inconvenience if proper lights were provided.

I am therefore of opinion that if such boats as I describe were supplied, the pontoons being also partially roofed and provided with seats, &c., a ferry would be as good a substitute for a fixed bridge as a pontoon bridge, and a much cheaper one. Indeed, I am sure it would be preferred by the native passengers, the mass of whom go of course on foot, because they would be saved a walk, and would be under shelter during the transit.

There is another system of ferry which might be adopted. It requires, however, the use of chains laid along the bed of the river which might be said to be inconvenient to vessels dropping up and down the river, as they do, dragging their anchors, though this does not seem a real objection. I mean the so-called "floating bridges" introduced by the late Mr. Rendel, 40 years ago, and still in use across Portsmouth and Saltash, the Ftchen at Southampton, and on the Clyde.

These bridges, which are merely pontoons, hauling themselves by steam power across the stream on chains, and, therefore, not subject to the influence of the tide, receive and discharge carriage and cart traffic with the greatest ease, by means of flaps or bridges hinged to each end, and but for the introduction of railways they would have been brought very largely into use.

The cost of a new boat of this class of very large dimensions lately supplied to Portsmouth was about £11,000. The working expenses of this ferry are about £2,200 a year, exclusive of Directors' fees, and the revenue is now approaching £6,000 a year. It is freely used for carriage and horse traffic of all kinds, and I never heard of difficulty in regard to it.

I have no doubt that two of these boats could be set to work between the Company's pontoons or anywhere in Calcutta for the sum of £40,000, and that their working expenses would not exceed £3,000 a year. The lowness of their working expenses is due to their requiring very little skilled labor, and that of the cheapest kind, for their management, and to the power they consume being of a more economical description than an ordinary steam boat. A single European in each boat would be enough for India. I should state that two of these boats were sent out to Calcutta some 30 years ago, but from a series of fatalities they were never put together. I should have proposed them some years ago to the Railway Company, but for a fear that the chains laid along the bed of the river would sink. I now believe this to be improbable. The only risk would be during the rains when the boats would probably require to be worked occasionally at night to lift the chains, or to be hooked and suspended at say two points to small boats.

However, on the whole, I believe that a suitable boat of the ordinary kind would in this case suffice, and I am quite certain that one such boat running at short intervals between the existing pontoons, with a second boat in reserve for accidents, would, on the whole, be more satisfactory to the traffic, would certainly be cheaper both to work and maintain, and would be free not only from the risks to which a pontoon bridge must be exposed, but from the inconvenience to the river traffic generally, which that kind of bridge must occasion.

The 9th October 1869. A. M. RENDEL.

REPORT ON RECENT INSPECTION OF THE UNOPEN PORTION OF THE GREAT INDIAN PENINSULA RAILWAY TO JUBBULPOOR.

No. 2336, dated 20th December, 1869.

From—The Secretary to the Government of Bombay, Railway Dept.,

To—The Secretary to the Government of India, P. W. DEPT.

In continuation of my letter No. 1891, dated 5th October 1869, I am directed to forward copy of a report by the Consulting Engineer on his recent inspection of the unopen portion of the Great Indian Peninsula Railway to Jubbulpoor, and to state that the portion of the Railway from Jubbulpoor to Gurrawara is not likely to be in a fit state to open for traffic much before the date fixed for the through opening from Bombay. A large number of sleepers have to be put in, and a considerable quantity of ballast must be spread before the line can be pronounced safe for passenger traffic.

The sleepers have all been procured, but have to be conveyed where they are wanted, and some girder tops have also to be fixed. An engine is runni[illegible]

through to Gurrawara now with materials for the line west of that place, but this engine will have to be stopped soon to permit of the bridges being completed.

No. 3578, dated 15th December, 1869.

From—LIEUT. COLONEL J. S. TREVOR, R. E., *Consg. Engr. to the Govt. of Bombay,*

To—The Secretary to the Government of Bombay, Railway Dept.

I have the honor to report that, in company with the Agent, Traffic Manager, and Chief Engineer of the Great Indian Peninsula Railway, I have just completed an inspection of the unopen portion of the Great Indian Peninsula Railway between Bheer and Jubbulpoor.

2. The line from Bhosawul to Jubbulpoor, distance of 339 miles, was originally let out in three contracts. The first from Bhosawul to Hurda, 138 miles 50 chains, was let to Messrs. Wythes and Company in 1861. The first 98 miles of this contract have been open for some time for traffic; on the remaining 40 miles, a bridge across the Kalee Machun River, a small bridge of three spans of 60 feet, a bridge across the Bringee River, two small bridges at Palusnair, and two others at Moodgul, remain to be completed.

3. The Kalee Machun is a bridge of 5 spans of 100 feet each. The masonry is well advanced, the piers are to be completed with cylindrical iron tops purchased from the Sindh Railway Company, and the girders are to be the old girders sent out for the Chinnee Creek Bridge at Kurrachee. These girders are different to those in use on the Great Indian Peninsula Railway. They require to be laid for a double line, and the pieces are not interchangeable. Considerable difficulty has arisen from the intermixture of the several parts and from the obliteration of marks. The difficulties have now been nearly overcome, but the bridge will not be completed before 1st June 1870. A diversion has been laid in, over which trains can work at low speed till the bridge is finished. This diversion is now ready and in use.

4. The small bridge beyond the Kalee Machun has had a diversion laid alongside of it through the river bed, and traffic can be carried on without interruption. The bridge can, however, easily be completed by 1st March 1870. The bridge of 4 spans of 30 feet at Beringher may be said to be finished, and as also may the three bridges consisting of 15-feet girders at Palusnair; only a little wood-work was required at these bridges to complete them when I passed over.

5. A diversion has been laid in alongside the two bridges each of 30-feet span at Moodgul. These bridges have their foundations laid, and can be completed as soon as stone is available from the other works.

6. Sleepers are required for relaying the road from the Buringhee to the Machuk River, a distance of about four miles. The sleepers in the other portions of the line are in fair order. Ballasting with broken stone is in progress, and the stations are well advanced, the buildings at Hursode, Kukraun and Mandwa being finished; but the water arrangements are still defective.

7. Engines will run through to Hurda by the 1st of January 1870 at latest, and the line will be ready for passenger traffic by 1st March 1870 with only one diversion at the Kalee Machun River.

8. The second contract, a length of 82 miles, was let to Messrs. Hood, Winter and Mills in 1861. With the exception of the Towa River, and a few sleepers north of that stream, the line is complete. But one bridge at Sewnee has been condemned, and is being rebuilt at the expense of the contractors. A diversion is laid in at this place, and engines and trains can pass over it with safety. The new bridge will be completed by 1st June 1870. Another bridge at Hurda, about which there was doubt, has been opened out. The work under ground has been found not to be as well put together as it ought to have been, but as the upper work is good, it has been decided not to rebuild the bridge, but to strengthen the parts below ground by short piling and concrete filling round the masonry. The masonry for the bridge over the Towa, 4 spans of 202 feet and 2 spans of 132 feet, has been complete for some time, and three of the larger spans were put in place before last monsoon. The other three spans will be in place by the 15th of January 1870, and trains will run through to Sohagpoor by the 1st of February 1870 at latest. Up to the Towa River, engines can run as soon as they can reach Hurda, but the sleepers along the whole of Messrs. Hood, Winter and Mills' contract are very bad, and extensive renewals are necessary before the line can be safely opened for passenger traffic. These renewals will, however, easily be effected to an extent sufficient to ensure safety by 1st March 1870.

9. The third contract, 119 miles in length, extended to Jubbulpoor, and was let to Messrs. Norris and Weller in 1861. These gentlemen were relieved from the work some time back, and the works are carried on partly departmentally and partly by small contractors. A great deal of work still remains to be completed on this length. The most backward section is the first 20 miles to Bunkerry Station. On this length there are incomplete at present three viaducts, the Machyee, Rampore and Bunkerry; one bridge of 2 spans of 60 feet, two bridges of 100-feet span each, four bridges of from 15 to 20-feet span, and six of about 10-feet span.

10. The Machyee viaduct, two spans of 78 feet each, is the most backward work on the section; one abutment is about 10 feet above ground line. At the other the wells are in, but no masonry has yet been put over them. At the pier work is just commenced. The girders are on the ground; great exertions must be made to get this bridge complete by 1st March 1870. There is a diversion alongside, but this diversion is not fit for passenger traffic.

11. The masonry of the Rampore viaduct of 5 spans of 60 feet is well advanced, only one pier and one abutment not being complete. The girders are on the ground, and are being put together.

12. The Bunkerry viaduct of 8 spans of 30 feet each is nearly ready for girders, there being only one abutment not complete; six pairs of girders of this bridge are not on the ground, but are lying some 40 miles on the Jubbulpoor side.

13. The masonry of the bridge of 2 spans of 60 feet, and also of the two bridges of 100-feet span each, is complete. The girder for the former are ready to hoist, but for the two latter, pieces are still deficient, and the same difficulty has arisen as at the Kalee Machun. The pieces, however, I was given to understand, have now been all found, and the work will be pushed on rapidly in future.

14. The smaller bridges and culverts are in different stages of progress, but no delay in opening need be apprehended on their account; rails are laid over the whole diversion, but the sleepers are bad as a rule, and the ballast deficient.

15. Between Bunkerry and Gurrawara, a distance of 19 miles, the unfinished works are, a bridge of 100-feet span, two bridges one of 30 and the other of 2-spans of 34 feet each, and six culverts and drains of less than 10-feet openings. The masonry, except in the case of two or three of the smaller openings, is complete. But there are no girders on the ground except for the 100-feet opening, and all the pieces of this have not yet been collected, as it is one of the Chinnee Creek girders. Sleepers are required for the last eight miles to Gurrawara, and a considerable quantity of ballast has yet to be spread, but the rails are laid, and there is no doubt of the line being fit for passenger traffic by 1st March 1870.

16. The Sukkur Bridge at Gurrawara of 4-spans of 150 each is being pushed on with remarkable vigor; the abutments and one pier are complete,

one other pier will be finished by the middle of January, and the last by the beginning of February. The girders are on the ground, and are now about to be put together. There is much to be done, but the energy that is being displayed in this neighbourhood will, I believe, ensure the completion of the bridge by the time appointed for the opening.

17. Engines can run in from Gurrawara to Jubbulpore, a distance of 79 miles, but there are several bridges to complete. The masonry of all these but the Baloo Rewa, and a few small 10-feet openings, is finished. But the iron girders are not put over the openings. These girders are now nearly all on the ground, and the bridges as well as the small culverts will soon be completed. At the Baloo Rewa a diversion has been laid in, and over this the traffic will have to be conducted till the bridge can be completed. It consisted of one span of 132 feet, and this portion of the bridge is complete. But the waterway was considered insufficient, and Mr. Brereton recommended the addition of a span of 78 feet on each side of the 132-feet opening. The design he submitted was not sanctioned on account of the heavy expense and delay its adoption would occasion, and a suggestion was made for obtaining the additional waterway by means of screw piles. Unfortunately, before the orders of Government could reach him, Mr. Brereton had dug out the foundations and cleared the river bed for a bridge on his own design. The work done rendered it impossible to carry out the suggestion of Government without filling up again a great part of the river bed that had been dug out. Under these circumstances, it has become necessary to allow the work to proceed as first proposed by Mr. Brereton. The necessity is much to be regretted, both on the ground of the increased expenditure that has had to be incurred, and also on account of the line having to be opened with a diversion at this point. But Mr. Brereton acted solely with a desire to push the work on as fast as possible.

18. Ballast is required all along the line from Gurrawara to Jubbulpoor, and a large proportion of the sleepers will have to be renewed. The station buildings are well advanced and the fences are being erected.

19. The joint station at Jubbulpoor is to be built by the East Indian Railway Company. The running engine-shed and the houses for the drivers, &c., are in progress.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

SECOND SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, JANUARY 15, 1870.

GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

THE PUNJAB TENANCY ACT.

No. 20 R, dated 14th January 1870.

From—C. U. AITCHISON, ESQ., *Offg. Secy. to the Govt. of India*, FOREIGN DEPT.,

To—*The Secretary to the Government of the Punjab.*

With reference to your letter to the Secretary to Government in the Home Department, No. 616, dated 29th April 1869, with which you submitted a memorial from certain of the chiefs and landholders of the Punjab, regarding Act XXVIII of 1868 (The Punjab Tenancy Act), and a memorandum thereon by the Hon'ble the Lieutenant Governor, I am directed to forward, for the information of His Honor, the enclosed copy of a despatch from the Secretary of State, dated 28th October, No. 80.

2. The Lieutenant Governor will perceive that, after a very careful consideration of the provisions of the Act, and all the information collected during the protracted discussions which preceded its enactment, as well as of the memorial above referred to, the Secretary of State in Council has determined that the Act should not be disallowed. It is the wish of Her Majesty's Government, however, that the operation of the Act should be most carefully watched, and that cheap and ample means should be provided by which all classes whose rights in the land may be affected, may, if dissatisfied, prove by a regular suit that those rights are more correctly recorded in the revised settlement than in first.

3. I am therefore to draw the attention of the Lieutenant Governor to the general review of the Act contained in the Secretary of State's despatch, and more particularly to paragraphs 25, 26, and 27 thereof, and to request that His Honor will inform the Viceroy and Governor General in Council whether, in his opinion, any further measures are necessary to provide every possible facility to all classes, whose rights are affected, to prove in a regular suit cheaply and easily any errors which the first settlement may have involved.

4. His Excellency in Council further desires that His Honor the Lieutenant Governor will carefully watch the effect of the Act on the rights and interests of individuals, and will from time to time bring to the notice of the Government of India any symptoms, either of public satisfaction or of dis-

content with its operation which may come under notice, and will report, if necessary, after experience of its working, whether, in the opinion of His Honor, any of the provisions of the Act will require to be revised and amended.

REVENUE.
No. 80.

INDIA OFFICE;
London, 28th October 1869.

To His Excellency the Right Hon'ble the Governor General of India in Council.

MY LORD,—*Para.* 1.—I have had under my consideration in Council your despatch of the 25th May last, No. 37, transmitting a memorial from certain of the chiefs, gentry and landholders of the Punjab, regarding Act XXVIII of 1868 (The Punjab Tenancy Act), and a Minute on the subject of the memorial by the Hon'ble the Lieutenant Governor of the Punjab.

2. You do not yourself express any opinion on that memorial, nor do you give me any indication of the course which you would wish to be taken by me upon the important and very difficult subject to which it refers.

3. Under these circumstances, I have to determine on that course, guided by the information which had already been supplied in previous papers, and by any further light which may be cast upon the subject by the memorial itself. That information appears to be very full. All the proceedings of the Government of India on the Act, all the debates in Council, as well as all the Minutes of the Lieutenant Governor of the Punjab, and of his Officers, are before me. I gather from your silence that no change has occurred in the view finally taken of the matter by the Government of India, a view which was embodied in the Act now appealed against.

4. In considering the very grave question, whether it be expedient to disallow the Punjab Tenancy Act, there are three preliminary questions which naturally arise. The first of these is the question whether legislation was or was not imperatively required to settle the difficulties which had arisen in respect to land tenures in the Punjab. The second question is, whether the Government of India proceeded to such legislation with full knowledge of all the circumstances of the case. And the third question is, whether there is any prospect of your Government being prepared to pass another Act materially different from that which was passed in October 1868.

5. As regards the first of these questions, I find the strongest evidence in the papers that by all parties concerned in the controversies which had arisen on the land tenures of the Punjab, a legislative solution was considered necessary.

6. So long ago as August 1865, a Draft Bill had been prepared by the Supreme Government, and remitted for consideration to the authorities in the Punjab. From that time forward no doubt seems ever to have been expressed as regards the necessity for some legislative measure. Attempts even earlier than this had been made to avoid the evils which were arising from disputed principles of settlement. So long ago as October 1860, the Officiating Financial Commissioner, Mr. Cust, had drawn up a "Draft Code to define the rights of landlords and tenants," and in reference to this attempt, the Lieutenant Governor observes that "the subject appeared too vast and intricate for the Punjab Government to deal with authoritatively."

Para. 8, Minute of Lieutenant Governor, dated 10th February 1868.

Para. 6, same Minute.

7. But, indeed, if any doubt existed on this question of the necessity for legislation, it seems to be settled by the 35th and other paragraphs of the Minute by the Chief Court of the Punjab:—"Coming now to the second of

the two heads into which this reply is divided, the Judges have at once to express their opinion that legislation is absolutely required. The confusion into which this subject has been thrown cannot be remedied in any other way."

8. As regards the second question, whether the Government of India proceeded to legislation on this subject with full information on all the facts of the case, I must observe that, although the memorial you have forwarded contains many allegations of fact, and many arguments which are well worthy of careful consideration, none of these can be new to the Government of India, because I find that all of them are to be found in one or other of the papers which that Government has transmitted to the Government at home.

9. It appears from these papers that not only the subject generally, but successive Draft Bills in regard to it, had been referred during a period of three years to four successive Committees consisting of local officers, and had been submitted in one edition to ample discussion in the Supreme Legislative Council.

10. It is unfortunately true that, notwithstanding all this long preparation, no general agreement had been arrived at on some of the principles, and on many of the most important details, of the proposed measure. But there is no evidence that longer delay or more discussion would have resulted in any such agreement. There is indeed much evidence in favour of an opposite conclusion. The Lieutenant Governor of the Punjab, in his Minute already quoted, which is dated eight months before the passing of the Bill, observes:—"On particular points a closer scrutiny of Native opinion may be deemed desirable, but I do not think it is possible, under existing circumstances, or practically necessary, to collect more reliable information than has now been supplied to guide the Legislature in determining the general course which legislation should follow." The Lieutenant Governor also, in the same paragraph of his Minute, refers to, and quotes approvingly, a passage from Mr. Prinsep, in which that distinguished officer says, "if a new Commission (of inquiry) be appointed, nothing will result from it except confusion and diversity of opinion."

Para. 14.

11. And this conclusion I find to be farther confirmed by the very nature of the dispute which had arisen on the land tenures of the Punjab. That dispute involved a radical difference between two schools of theoretical opinion, who regard from two opposite points of view the slender basis of fact which alone appears to be ascertainable. These differences of theoretical opinion were not inoperative in practice. The proceedings of the Settlement Officers were coming into collision with the legal principles which ruled the decisions of the Civil Courts, and there could be no prospect of peace in the Province without the action of the Legislature. Under these circumstances, I am of opinion that the Government of India did not proceed to legislation without being urged to that course by very powerful arguments of policy, and that it was in full possession of all the facts and arguments by which its legislative action should be guided.

12. As regards the third question, whether, if this Act were disallowed, there is any prospect of your Government being prepared to pass another materially different, or more likely to reconcile opposite opinions, you have given me no indication of such a probability, and I see none in the nature of the case.

13. Having disposed of these preliminary questions, I have only farther to consider whether there is anything in the Punjab Tenancy Act itself so violent or so inexpedient as to call for its disallowance by the Crown.

14. After a very careful consideration of its provisions, and of the objections urged against them, I am of opinion that, whilst some of these pro-

visions appear to require in their operation very careful watching, none of them are of such a nature as to call for a sweeping condemnation of the Act.

15. The first great leading feature of the measure is that it sets up, as presumably correct, the first regular settlement of the Province, thereby setting aside, as of authority, the records of right contained in the revised settlement which was being conducted by Mr. Prinsep and his officers. It appears to be well established that this first settlement contained many errors. It could not be otherwise, conducted as it was soon after our acquisition of the Province, and when the people hardly understood the nature of the questions which we asked, or the effect of our record upon questions of land tenure. But as that settlement had lasted about 15 years, and as rights of occupancy had been roughly recorded on the basis of a previous holding for 12 years, it follows that the existing condition of the tenures had lasted somewhere about 25 or 27 years, and presumably, therefore, it must be held as affording a safer basis for legislative action than a later settlement, which had become the subject of violent controversy.

16. I find, indeed, in these papers abundant evidence of the ability, care, and desire to ascertain the truth, which have distinguished the proceedings of Mr. Prinsep. Nor can I entertain any doubt whatever that in very many cases his settlement would have rectified real errors in the settlement which had been first recorded. But neither can I doubt that the changes he would have effected had these two characteristics, first, that they were very sweeping and extensive, and secondly, that their legal force was more than doubtful. That the changes he sought to effect were very sweeping is admitted on all hands, and this fact is not the less important that these changes were recommended as a mere correction of previous mistakes. The Lieutenant Governor of the Punjab says expressly, that "among our Settlement Officers none had more keenly felt the necessity for *a radical change in the relations between landlord and tenant*, and the correction of what had been erroneously laid down at the previous settlement, than Mr. Edward Prinsep." (Paragraph 7, Sir D. M'Leod's Minute.)

17. Rough as may have been the process of inquiry by which the first settlement was established, it must be very full of errors indeed to render it expedient for the Legislature to assume as a safer basis of recognition another settlement which is new, and which is admitted to effect a "radical change" in the relations between landlord and tenant as they were recognized at the first settlement and so recorded, having thus been in force for a period of about 25 years over a populous and extensive Province.

18. If, indeed, the Punjab Tenancy Act had the effect of absolutely stereotyping the first settlement, and rendering all its mistakes permanent and irreversible, I should entertain very strong objections to it. But this is not its effect. The Act provides for the rectification of all errors through the means of a "regular suit," which may be prosecuted by all who may think themselves aggrieved. And by a "regular suit" is meant, as I am led to understand, not necessarily an expensive law plea before the ordinary Civil Courts, but a suit prosecuted before a Court of Revenue Officers, which may be, and I trust will be, rendered cheap and easily accessible to all classes of the people.

19. This view of the object or effect of the Act I find to be clearly indicated in the language held by Mr. Brandreth, when, in January 1868, he was advocating a former edition of the same measure in the Supreme Legislative Council. He spoke of the Bill as "not so much an attempt to settle anything definitively, as to open a way for the claims of the landowners being dealt with by the Settlement Officers or by the Civil Courts." Again, he said:—"Those landowners who clearly had rights of ejectment, and complained of having been deprived of them under

British rule, would, he hoped, have no great difficulty in re-establishing their rights in the way that would be open to them if this Bill became "law; . . . . two or three suits here and there would settle the matter." Nor does it seem to have been contemplated that Mr. Prinsep's revision of the old settlement should be ignored, or his labours considered as thrown away. Mr. Brandreth, on that occasion, proceeded to say that "the general inquiries that had recently been made by the present Settlement Officers ought to make it sufficiently clear in most cases what classes of tenants had, and what classes of tenants had not, rights of occupancy in those districts that were under settlement. There was nothing in the Bill to prevent the Government, if it should think it worth while, making such inquiries in every district."

20. This language applies equally to the Act as it was finally passed in October 1868, and it appears to me that, if your Government conducts its operation in this spirit, a satisfactory solution of all difficulties may be attained.

21. I have already referred to some of the causes which in the nature of things must have imported many errors into the record of rights established by the first settlement of the Punjab. There is one other cause, the operation of which seems to be admitted on all hands. That cause is this,—that the rights of landowners, whatever they were before, have acquired altogether a new value under our rule. Formerly the necessities of a military government, and the arbitrary character of its administration, subjected all classes to a scale of taxes and to exactions which depressed agricultural industry, and rendered all property in land, beyond the most ordinary profits of cultivation, altogether uncertain and precarious. Under our rule, on the contrary, a system of fixed and moderate assessment has stimulated agricultural prosperity, and has given a new value to all rights, whether of occupancy or of ownership, which are connected with the soil. Inquiries into the respective rights of these classes, even if such inquiries had been otherwise complete, instituted at a time when those rights were of little value, cannot itself be regarded as giving a satisfactory result. A record of rights so important to the welfare of the people ought to be founded, not only on the fullest inquiry, but on the fullest inquiry conducted at such a time, and under such conditions, as shall assure the Government that the people are awake to the value of those rights which we are engaged in recording.

22. I observe, indeed, that the fact here adverted to has been used as the basis of an argument in favour of the Government exercising a very large and free discretionary power over the rights of the landowning classes. It is said that the value which has arisen out of our system of government is a value which we are free to deal with and regulate as we like. It appears to me that this reasoning is of a very doubtful character, and may be used to justify the most sweeping confiscations. It would not be just towards any class interested in the soil to call upon them to give up well known and long established rights in return for our promise not to be oppressive and unjust in the amount of our assessments. There is no right belonging to any class of society which does not acquire a new value under a Government which is good as compared with the value attaching to it under a Government which is bad. The doctrine which, on this account, would assert a power of free dealing with those rights is a doctrine which requires very cautious application. We must not put a price upon our abstinence from one kind of injustice by taking leave to inflict another.

23. I rejoice, therefore, to see that, although such arguments as these have been used in the course of the discussion, all parties profess to be bound by one principle, which ought to render all such reasoning irrelevant. That principle is the very simple one, that it is our duty to ascertain, as nearly as we can, what the relative rights and relations of landowners and land-occupiers actually were before we took the country, to give to those rights and relations a new sanction, and not to upset or to interfere with them.

24. Here, however, we are encountered by another of the main facts of the whole case, namely, that the pre-existing rights and relations of the agricultural classes were complex, and are to us obscure;—that in no case do they rest, as in Europe, on written documents, or on a long course of judicial decisions, or, in fact, on any thing but local customs. These customs are of infinite diversity, they have been handed down by tradition only, and they have long been liable to such invasion by the agents of arbitrary Governments, and have consequently been so broken and disturbed that the widest differences of opinion may arise on the ultimate principles of tenure which they involve.

25. Under those circumstances, I am well aware that it is almost impossible to prevent pre-conceived ideas of what the relative rights of land-owners and land-occupiers ought to be from intruding into the inquiry as to what those rights actually are. But in setting up the record of rights founded on the first settlement as presumably correct, no permanent injustice will be done, provided cheap and ample means be given whereby the two great classes, whose rights in lands are affected, may prove that those rights are more correctly recorded in the revised settlement than in the first. Whatever objections may be taken to Mr. Prinsep's method of operation, in so grave a matter as the final adjudication of legal rights, that method appears to me to have been at least carefully and conscientiously devised in order to arrive at facts in so far as they could be ascertained, and I cannot doubt that many of the results arrived at by him will, on judicial investigation, be found to be correct.

26. I will not enter upon those details of the Punjab Tenancy Act the exact effect of which is not very easily intelligible without minute local knowledge, and which cannot perhaps be certainly known until the provisions of the Act have been made the subject of judicial interpretation. I am glad to observe that the Clauses providing for augmentation of rent during the period of the settlement are such as materially to mitigate the hardship of any mistakes which may have occurred in granting rights of occupancy as against the landowner, when none such really existed. But in this, as in all similar provisions, the whole value will depend on the facilities which are given for bringing the remedies of the Act into operation, and for meeting the conditions of proof which it imposes.

27. I have already intimated to you that Her Majesty's Government do not contemplate resorting to a disallowance of the Act. But I have to request that the operation of it be watched by your Government with the closest care, and especially that you will devise measures for affording every possible facility to all classes, whose rights are affected, to prove "in a regular suit," but cheaply and easily, any errors which the first settlement may have involved. I desire to be informed of the steps you may take for the purpose of securing this most essential object, and I cannot doubt that in any matter in which you see cause to think that the provisions of the Act, as they become more generally understood, are exciting discontent, or otherwise require revision, you will not hesitate to pass an amending Act.

I have, &c.,

ARGYLL.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 4 of 1870.

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, JANUARY 22, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 14th January 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding.*
His Excellency the Commander-in-Chief, K. C. B., G. C. S. I.
The Hon'ble G. Noble Taylor.
Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble Gordon S. Forbes.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey, C. S. I.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
His Highness Sarámade Rájáháe Hindústán Ráj Rájendra Srí Mahárájá Dhiráj Sivái Rám Singh Bahádur, of Jaypúr, G. C. S. I.
The Hon'ble F. R. Cockerell.

QUARANTINE RULES BILL.

The Hon'ble MR. CHAPMAN moved that the Report of the Select Committee on the Bill to provide Rules relating to Quarantine be taken into consi-

deration. He said that, when he introduced the Bill, he stated that it would provide for both inland and maritime quarantine. On further consideration, however, it had been found that, in order to secure effectual sanitary rules for the multitudes resorting to fairs and sacred places, it would be necessary to pass a far more comprehensive measure. Thus, it would not only be necessary to meet the case of places where infectious diseases prevailed, but also the case of places where there were grounds for apprehending an outbreak of such diseases. Above all, it would be necessary to authorize the levy of taxation to cover the expenditure on account of the medical and other arrangements that would have to be made. On these grounds, the Select Committee had come to the conclusion that it would be advisable to limit the Bill to seaports, leaving for further consideration, either by this Council or the Councils of the several Local Governments, the question of inland quarantine. He believed that a law to regulate inland quarantine was greatly needed, and that it would be found to interpose an effectual barrier against the inroads of cholera. It was with extreme regret that the Select Committee found themselves obliged to confine the operation of the Bill to the establishment of a system of quarantine in the seaport towns ; but the subject of inland quarantine would not be lost sight of.

The Motion was put and agreed to.

The Hon'ble MR. CHAPMAN then moved that the Bill as amended be passed.

The Motion was put and agreed to.

SUBORDINATE JUDGES AND MUNSIFS BILL.

The Hon'ble MR. COCKERELL moved that the Report of the Select Committee on the Bill to provide for the appointment of additional Subordinate Judges and Munsifs in the Presidency of Fort William be taken into consideration. In doing so he said that, in the opinion of the Select Committee, the provisions of the Bill as introduced were sufficient to attain its objects, and no alteration had therefore been recommended.

The Motion was put and agreed to.

The Hon'ble MR. COCKERELL then moved that the Bill be passed.

The Motion was put and agreed to.

COURT FEES BILL.

The Hon'ble MR. COCKERELL also presented the Report of the Select Committee on the Bill to provide for the better regulation of Court fees.

AGROR VALLEY BILL.

The Hon'ble MR. STEPHEN moved that the Bill to remove the Agror Valley from the jurisdiction of the tribunals established under the general Regulations and Acts be passed.

The Motion was put and agreed to.

HINDU WILLS BILL.

The Hon'ble MR. STEPHEN also presented the Report of the Select Committee on the Bill to regulate the Wills of Hindús and Buddhists in the Presidency Towns.

HIGH COURTS (COSTS OF PETITIONS) BILL.

The Hon'ble MR. CHAPMAN introduced the Bill to enable the High Courts at the presidency towns to deal with costs of petitions for certain monies transferred to Government, and moved that it be referred to a Select Committee with instructions to report in a fortnight. He said that the Bill would deter parties from making idle and unfounded applications, as it would enable the Courts at their discretion to saddle such parties with costs.

The Motion was put and agreed to.

FEMALE INFANTICIDE BILL.

The Hon'ble MR. STRACHEY, in moving for leave to introduce a Bill for the prevention of female infanticide, said that the prevalence of female infanticide in many parts of India had long been a matter of unhappy notoriety. From time immemorial, this crime had been practised in many parts of India, and especially in the North of India, by many tribes of Rájputs. Although, speaking generally, it might be said that the crime was peculiar to the Rájputs, still this was not, strictly speaking, true ; for there were other tribes of Hindús with whom the practice was common, and in some parts of the country female infanticide was practised even by some classes of Muhammadans. The first Englishman, he believed, who, he might say, discovered the existence of this horrible system of crime, was the well known Jonathan Duncan, who, after eighty years, was still remembered with respect and affection in the Benares District. In 1789, when he was Resident at Benares, he first made known the wide-spread prevalence of this crime among the Rájputs of the Benares Division, and he exerted his influence to the utmost to induce the people who practised it to abandon the commission of the crime. Two Regulations were passed not long afterwards specially directed against this crime, Regulation XXI of 1795 and Regulation III of 1804; but the measures taken under those Regulations practically had very little effect, and they certainly had led to no permanent result. For some forty years after those Regulations had been passed, almost nothing seemed to have been done on this side of India with the object of repressing the practice of infanticide. It was not till the year 1836, when Mr. Thomason was making a settlement of Azimgarh, that he discovered the prevalence of the crime in that district. This admirable man and wise statesman, to whom India owed, on many grounds, a deep debt of gratitude, was the first, in modern times, on this side of India, who directed his mind to the prevention of this crime. He found that it was commonly practised in the Azimgarh District by Rájputs on the borders of the Oudh territories, and he stated that, among a body of Rájputs numbering some 10,000, "not a single daughter was forthcoming." MR. STRACHEY was quoting from the excellent account of Indian Infanticide by the Revd. Cave Browne :—

> "I do not think," Mr. Thomason wrote, "it is generally known that the horrible practice so extensively prevails even at our own doors. I myself discovered it accidently whilst engaged in revising the settlement of the pargana. In conversation with some of the zamíndárs, I happened to mention one of them as the son-in-law of another. The mistake raised a sarcastic laugh, which was explained by the brief exclamation of a bystander:—'Where will you find a daughter in Kooha?' Inquiry once roused, the truth was palpable. They freely admitted the practice themselves, and it was a matter of notoriety. These Rájputs," Mr. Thomason went on to say, "are a fine, manly, independent race of men. There are few whom I have seen of more prepossessing address. Their tribe have formed of old high alliances, and they have served on regal establishments. * * They pride themselves on giving their daughters in marriage only to the members of certain tribes on an equality with themselves or their superiors. Matches are difficult to be obtained, and attended with great expense, which they can ill bear, and are almost certain to cause the alienation of the whole, or a great part, of their hereditary lands. Hence the birth of a daughter is considered a most serious calamity, and the unfortunate infant is very seldom spared."

Mr. Montgomery, now Sir Robert Montgomery, was then an Assistant to Mr. Thomason. Shortly afterwards he became Magistrate of Allahabad, and he

found that the crime prevailed also in that district to a terrible extent. Soon after similar investigation showed the extreme prevalence of the crime in the Northern parts of the Doáb. Mr. Unwin, the Magistrate and Collector of Mainpuri, was the first to bring the fact to light in that part of the country: he found in that district that, among the Chohán Rájputs, who were very numerous, there was hardly a single female child, young or old, forthcoming. In Etáwa, Mr. Monckton soon afterwards found the same, and Mr. Gubbins made the same discovery in Agra. The higher the rank of the family, the more commonly and the more systematically was the crime practised. Thus, Mr. Raikes, who was Magistrate and Collector of Mainpuri and who devoted himself most energetically and successfully to the suppression of the crime, in his work called "Notes on the North-Western-Provinces," wrote as follows:—

"There is at Mainpuri an old fortress, which looks far over the valley of the Eesun River. This has been for centuries the stronghold of the Rájá of Mainpuri Chohans, whose ancient blood, descending from the great Pirthá Ráj and the regal stem of Ním-rána, represents *la crême de la crême* of Rájput aristocracy. Here, when a son, a nephew, a grandson, was born to the reigning chief, the event was announced to the neighbouring city by the loud discharge of wall-pieces and matchlocks; but centuries had passed away, and no infant daughter had been known to smile within those walls."

Shortly afterwards the first Panjáb war occurred, and in 1846 the Jalandhar Doáb was annexed to the British territories. Lord Lawrence was Commissioner of the new Division, and he found this practice equally prevalent there. It was found, subsequently, that there were other tribes besides the Rájputs in the Panjáb, who commonly practised the same crime, especially the Bédis, a numerous and very influential class of Sikhs of a sacerdotal character, said to be descended from Guru Nának, the founder of the Sikh faith. From that time, the more enquiries were made, the more was the prevalence of this crime in Northern India established. In 1856 an officer was appointed to make special investigations into the facts in the Benares Division, and MR. STRACHEY would quote to the Council some of the facts discovered by Mr. Moore during his enquiries carried on at Benares. Similar facts were quite as true in many other parts of the North-Western Provinces, of Oudh and of the Panjáb. In the Benares Division, Mr. Moore personally visited and made most minute investigations into the facts in three hundred and eight villages in which he found reason to suspect that the crime prevailed. In sixty-two of these villages he found that there were no female children under the age of six years. In one sub-division of the district he visited thirty-eight villages, and in ten of them he found no girls at all. He found that marriages of girls were of very rare occurrence; in some villages there had not been any within the recollection of the present generation. In one village, in which there was not a single girl under six years and only two above that age, the Rájputs could give no account whatever with what tribes they intermarried, nor of the expenses attending marriages. In another village there, no girl had been married for twenty-five years. In another part of the Division, Mr. Moore found a community of Hárá Rájputs, inhabiting villages on the borders of Oudh, regarding whom he said—

"Not only are there no girls to be found in their houses now, but there never have been any, nor has such an event as the marriage of a daughter taken place for more than two hundred years. This is their own confession, nor have they the remotest idea as to what tribes their daughters would be married with, nor how much such a marriage would cost."

Whenever Mr. Moore went amongst these particular classes, he found the same results. In another group of thirty villages he found that, in twenty, the total number of female children under six years of age was only thirty-seven, while there were three hundred and thirty-nine boys of the same age: in eleven villages there were no girls at all, and no marriage of a girl had taken place within the recollection of the oldest inhabitant.

Shortly after these enquiries occurred the mutinies of 1857, and, as might have been expected, the whole subject was then for some time lost sight of. But

after the re-establishment of order the subject again attracted the attention of Government. In Oudh, in particular, it was found that the custom was terribly prevalent, and active measures were taken by Sir Charles Wingfield with the help of the taluqdárs to put a stop to the practice.

Although in many parts of the country, a great deal had undoubtedly been done to check the crime, MR. STRACHEY feared that there could be no question that it was really at the present time almost as prevalent as ever. Only a year ago a minute investigation was made by the orders of the Lieutenant Governor of the North-Western Provinces in the District of Basti by Mr. Hobart. He conducted his investigation with great care and judgment, and the conclusions to which he came were the same as those arrived at ten years previously by Mr. Moore, of which MR. STRACHEY had just given some account to the Council. For example, Mr. Hobart examined a group of ten villages inhabited by Rájputs, and in seven of them he found one hundred and four boys and only one girl, and the people admitted that, for the previous ten years, only one girl had been married. In another group of twenty-seven villages, he found, in twenty-three villages, two hundred and eighty-four boys, but only twenty-three girls, and in ten other villages he found that the marriage of a girl was an unknown ceremony. Again, there was another group of sixteen villages, in four of which no girls existed, and in nine other villages there were seventy-one boys and seven girls.

But MR. STRACHEY need not continue these terrible illustrations of the prevalence of this crime. The accounts that were given would seem absolutely incredible if they were vouched for on less unimpeachable authority.

The causes which had led to this terrible prevalence of female infanticide had already been generally indicated in the passage from Mr. Thomason's Report which MR. STRACHEY had read to the Council; but he would also read a passage from Mr. Raikes' book, which stated very plainly what the real causes of the crime were. Mr. Raikes, than whom there could be no higher authority, for he was one of the first and most successful of the officers who had endeavoured to contend against this crime, wrote as follows:—

"At the very root of the evil stands this principle—The Hindú disbelieves the purity of the sex; a daughter arrived at puberty *must*, he thinks, be married or be disgraced. When he seeks a husband for her, it *must* be in his own caste; but it *must* also be in a sub-division of that caste, higher, if possible, but at all events differing from, his own. To marry in one's own sub-division is impossible; such an union would be set down as incestuous. Disgrace is attached to marriages with men of inferior relative rank. 'The owner of a hyde of land, whether Sisodia, Ráhtor, or Chohán, would scorn the hand of a Járejá princess.' What then is a Rájput father to do with his marriageable daughters? He must, it is clear, seek a husband for them in a rank equal to his own, or in a higher rank. But if his own sub-division be high, if he be a Chohán or a Ráhtor, he will not easily find such a son-in-law; or, if he do find him, will have to pay high in hard coin for blood and rank. And this is why a Rájput mourns when a daughter is born to him, and rejoices when he has a son. The one brings disgrace, anxiety, or at least heavy expense upon his house; the other increases his wealth and his dignity."

Thus this necessity of getting his daughter married to a man of at least the same class as himself, and if possible of a higher rank than himself, brought on the high caste Rájput something of personal degradation. The father of a married daughter came to be looked upon as inferior to her husband, and the very name of "father-in-law" had become one of the commonest terms of insult and reproach.

"A Rájput, of the present day," writes Mr. Raikes, "is subject to his son-in-law hand and foot, can refuse him nothing, and, without disgrace, cannot accept so much as a meal at his hands."

Although all this was not strictly true, except of some classes of Rájputs, still there could be no doubt that these feelings of family pride had been at the root of this great evil. It had followed as a natural consequence that the most extravagant and ruinous expenditure had been incurred by these people in

the marriages of their daughters, and this had been admitted on all hands to be one of the greatest immediate causes of the crime. Marriage-expenses were frequently so enormous that the marriage of a daughter literally proved the permanent ruin of the family, and under these circumstances a Rájput preferred that his daughter should perish rather than that he should be placed under the necessity of incurring expense for her dower to an amount, than which if he gave less he would consider himself disgraced. But after all, the real great reason for the crime at the present moment might be considered to be custom—immemorial custom—which Manu declared must be looked upon "as transcendent law and the root of all piety." There could be no doubt that these people murdered their children from generation to generation mainly because their forefathers had done so before them, with hardly an idea that there was anything criminal in the practice.

As to the remedies to be applied to this great evil, there was fortunately no reason to doubt, because we had ample actual experience to show us how the crime could be dealt with. The measures that had been taken had been of two kinds. The first class of measures had been those which aimed at the removal of the causes which led to the commission of the crime, and especially to the prevention of extravagant expenditure on marriages. The second class of measures had been of a coercive and directly preventive character. The first sort of measures evidently must mainly depend on the action taken by the people themselves; the other class of measures on the action of the Government. There had been considerable success in some parts of the country in inducing the Rájputs themselves to agree to limit their marriage-expenses. Mr. Raikes was the first to initiate measures of this kind at Mainpuri; they were afterwards followed up on a great scale, and with very great success, in the Panjáb, under the orders of Lord Lawrence, Sir Robert Montgomery, Sir Donald Macleod and others, and also in Oudh and elsewhere, and, there could be no doubt, had been very useful. There was a strong sense among the people themselves of the extreme folly of spending all this money on marriages, and it had been proved by experience that, with a little help and pressure put on them by the officers of Government, they were often glad to limit these expenses. While MR. STRACHEY believed that measures of this character, which struck at the very root and causes of the evil, were of the utmost value and importance, he thought there could be no doubt that the measures which had been practically the most successful had been those of active though judicious prevention and coercion. The measures of this character on this side of India were, MR. STRACHEY believed, first adopted by Sir Robert Montgomery. They were followed up afterwards very actively by Mr. Unwin, Mr. Gubbins and others, in the North-Western Provinces, in the Panjáb, and in Oudh, and MR. STRACHEY might give illustrations of the great success of those measures by a few facts. In 1842, Mr. Raikes found that there was hardly a Rájput girl living in the District of Mainpuri. Nine years afterwards, in 1851, there were one thousand four hundred and eighty-eight girls found alive, and, in 1855, the number had risen to two thousand five hundred and thirty. Similar results had been observed in the Agra District. The measures taken by Mr. Gubbins led, in a very few years, to the doubling of the number of female Rájput children; the same had happened in the Panjáb and Oudh, and indeed everywhere where preventive measures had been taken. These measures had been of a very simple character. They had consisted mainly, in the first place, in the introduction of an effective system of registration of births and deaths in suspected localities, and in a constant system of periodical inspection and enumeration of children. It had been found, in practice, that these measures had the effect of saving the lives of a large number of children when they were born. If a child was not killed immediately after birth, it might be considered safe; and it might be confidently said that experience had proved in a most unmistakeable way, that it was quite in the power of the Government of India to eradicate, or at any rate enormously to diminish, this crime. But the authorities in all parts of the country where the crime was practised had come to the most decided conclusion that it was necessary that measures for the prevention of the crime should be taken much more systematically and continuously than any that had hitherto been attempted, and to enable them to carry out completely the measures that were necessary, legislation was absolutely required. It had been acknowledged on all hands that the existing law was altogether insufficient.

MR. STRACHEY said that he could not now enter into details regarding the Bill which he proposed to introduce; that would be done more properly hereafter. It was sufficient now to say that the Bill proposed little more than to give to the Local Governments legal authority to do, completely and systematically, that which had already been imperfectly done in many parts of the country. There was no real novelty in what was now proposed. The Bill had been already sent to the several Local Governments and Administrations and in all substantial respects it had been entirely approved by them. He thought that the Council would agree with him when he said that a stronger case for legislation could hardly be imagined. The British Government had borne too long with this abomination, and he hoped that the time had come in which the Government would show to the world that it had finally and firmly resolved that these things should cease. He could not, for his part, doubt that it was in the power of the Government to bring about this end. Some people had talked of the political danger of rudely interfering with these atrocious practices. For his own part, MR. STRACHEY was quite confident that there was no danger of the kind. We were told the same thing when suttee was prohibited, and there were not wanting people to tell us the same at every such step that was made for the moral improvement and enlightenment of the people of this country. This talk of political danger was baseless and foolish, but he would say, for his part, that even if it were true that such danger existed, that was no reason for allowing such abominations as this to continue. Whatever might be the consequences, it was the duty of the British Government to declare that it would not suffer any longer the continuance of these horrible practices in any part of its dominions, and that it would put forth the whole of its power for their repression.

The Motion was put and agreed to.

The following Select Committee was named:—

On the Bill to enable the High Courts at the Presidency Towns to deal with costs of petitions for certain monies transferred to Government—The Hon'ble Messrs. Stephen, Gordon Forbes and Cockerell and the Mover.

The Council adjourned to Friday, the 21st January 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

CALCUTTA,
The 14th January 1870.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

LATE TRAINS ON THE PUNJAB AND DELHI RAILWAYS.

No. 72 R, dated 12th January 1870.

From—The Government of India, PUBLIC WORKS DEPT.,

To—The Joint Secy. to the Govt. of the Punjab, P. W. Dept., Railway Branch.

I am directed to acknowledge the receipt of your letters noted in the margin, submitting late train reports of the Punjab and Delhi Railways for the months of September and October 1869.

Nos. 2391 and 2561, dated 13th and 22nd December 1869.

2. I am desired by the Governor General in Council to point out that the object of the Government of India in calling for these returns was to draw the attention of the local authorities to the unsatisfactory working of the lines, in view to their taking such steps as would insure better management; but that though the returns have now been submitted for seven months, and have received repeated comment in the letters noted in the margin, the results are still as follows:—

P. W. D., No. 1122 R, dated 12th August 1869.
" " 1589 R, " 11th October 1869.
" " 1822 R, " 4th December 1869.

	Percentage late.		
	Ghazeeabad to Umballa.	Lahore to Mooltan.	Lahore to Beas.
April	83	30	36
May	37	22·6	12
June	57	47	46
July	62	23	46
August	16	22	32
September	14	23	16
October	39*	12	

These figures show that some improvement has been made, but that vigorous measures of reform are still required.

3. I am again to call your attention to the request contained in Public Works Department No. 1122 R, dated 12th August 1869, for a report on the steps which have been taken to remedy these serious and constantly recurring delays in the train service, and to beg that it may be submitted without further delay.

* Ghazeeabad to Loodiana.

GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

OPERATIONS AT BAHREIN.

No. 12, dated 8th January 1870.

From—E. H. PERCIVAL, ESQ., *Acting Under Secy. to the Govt. of Bombay, Political Dept.,*

To—The Secretary to the Government of India, FOREIGN DEPT.

I am directed to forward to you, for submission to His Excellency the Governor General in Council, copy of a despatch from Lieutenant-Colonel Pelly, C. S. I., with accompanying plan, reporting on the recent operations at Bahrein.

No. 207, dated the 9th December 1869 (received in Bombay on the 7th January 1870).

The pirate Chiefs, five in number, arrived here in Her Majesty' Ship *Daphne* on the 31st ultimo, and have been forwarded to Asseerghur for detention there as prisoners of war.

No. 207, dated 9th December 1869.

From—LIEUT. COLONEL L. PELLY, C. S. I., *H. B. M.'s Political Resident, Persian Gulf,*

To—The Secretary to the Government of Bombay, Political Dept.

In continuation of my letter as per margin, and of previous correspondence, I have now the honor to report proceedings at Bahrein in punishment of the recent piracy. And as these proceedings have been conducted by Commander G. A. Douglas, Senior Naval Officer of Her Majesty's ships present, and myself in complete concert and harmony, I propose, in this report, whenever I refer to matters arranged in common by us, to use the plural we, instead of reiterating Captain Douglas' and my own names.

No. 204, dated 14th November 1869.

2. On the 14th November we had the honor of receiving at Angaum His Excellency's telegram, instructing us as to the mode of procedure to be followed at Bahrein, and directing me to intimate our orders to Her Majesty's Chargé dé Affairés at Tehran for the information of the Persian Government. A copy of the telegram sent to Tehran is appended.

3. As regards the mode of procedure, His Excellency's instructions were based on four recommendations submitted in my letter No. 184 of the 5th of October 1869.

4. Of these four recommendations, one related to the blockade of the Wahabee ports; but, as the fulfilment of this recommendation was postponed by His Excellency, pending a reference to the Viceroy, and as the question of the Wahabee Ameer's complicity in the Bahrein piracy has since formed the subject of a separate report, we do not propose further alluding in the present letter to this particular recommendation.

Vide my report sent by this opportunity, No. 209, dated 9th December 1869.

5. The three remaining recommendations which we were directed to carry into effect were as follows:—

"*Firstly*, to blockade and otherwise use force against Bahrein, until the leaders of the piracy, *viz.*, Mahomed bin Abdullah, Nauser bin Mubarek, also Mahomed bin Khalifeh himself, supposing him to be still alive, should be surrendered.

"*Secondly*, and supposing the choice to be eligible on general considerations, to recognize the son Esau, of the late Chief Alee bin Khalifeh, as Chief.

"*Thirdly*, to come to an understanding with whatever Chief might be recognized, to the effect that the estates and other available property of the pirates and traitors,' Mahomed bin Khalifeh, Mahomed bin Abdullah, and Nauser bin Mobarek, should be considered as forfeited, and that the produce or value of such property should be applied, in the first instance, towards the reimbursement of persons plundered. But I would exclude from claimants to such compensation such persons as may have implicated themselves in the purchase of plundered property at nominal rates."

6. In conformity with His Excellency's instructions, we left the Angaum station with Her Majesty's Ship *Daphne* and Gunboat *Clyde* on the morning of the 15th November, leaving Her Majesty's Ship *Nymphe* and Gunboat *Hugh Rose* to await the further instructions of Government.

7. On the afternoon of the 17th we arrived at Bahrein, and on the following morning sent ashore several copies of a circular letter addressed to the Chiefs and Heads of tribes.

8. We accorded personal interviews under safe conduct to the head and some of the minor pirate Chiefs, and also to the heads of some of the peaceful Bahrein tribes. It soon appeared—

1*st*, that the tribes and people of Bahrein in general earnestly desired the restoration of the late Chief's family in the person of his son Esau bin Alee bin Khalifeh; and

2*nd*, that the pirate Chiefs in possession were disliked, but held power with a firm grasp; and that the Bahrein inhabitants were neither sufficiently organized nor warlike to expel the usurpers.

9. It appeared, indeed, at this point of the proceedings almost more than doubtful whether we ourselves should be able to seize or expel the pirate Chiefs and restore the succession.

10. At the same time it seemed our duty to use every effort and devote full time towards the realization of the above objects, and, failing their attainment, to make the next best arrangement possible, in preference to injuring the islands by bombardment or other severely destructive measures.

11. Accordingly, having ascertained that Esau bin Alee was a refugee on the Guttur Coast, we invited him over with an armed escort, and cautioned the Guttur Chief to refrain from hindering him.

* * * * * * *

13. As it was in the afternoon of the 19th that we commenced a series of manœuvres and operations which have resulted in the successful fulfilment of the Government instructions, we would beg at this point to solicit a glance on the part of His Excellency in Council at the annexed sketch map, which has been obligingly prepared for us by Navigating Lieutenant White, Her Majesty's Ship *Daphne*.

14. The immediate objects in view were—

1*stly*, to watch the Menameh Fort which was held by Nauser bin Mobarek; and

2*ndly*, to threaten the Moharrag Fort, where we supposed it possible that Mahomed bin Khalifeh, if not already dead, was imprisoned.

15. Accordingly *Daphne* was left at her anchorage, while Gunboat *Clyde* in command of Mr. Elton was sent round to the head of the creek directly opposite the Moharrag Fort. Towards sunset we took the boats (under command of Lieutenant Acklom, Her Majesty's Ship *Daphne*) across the reefs to the spit of sand which connects the Moharrag Island with its fort. We ran

the boats close in with intention of isolating the fort by a line of small armsmen across the spit. Some men from the fort then came down and parleyed. They strenuously denied the existence of Mahomed bin Khalifeh, but after being suitably reminded of consequences agreed to surrender him, if only we would permit them to communicate with the garrison. A few minutes afterwards some of the garrison brought Mahomed bin Khalifeh down to the boats in irons, and thus fell into our hands by a short manœuvre this fierce old Chief, who has for a generation past shown himself an incorrigible tyrant and pirate, and a standing annoyance to successive Residents. It is characteristic of the man that immediately his irons were removed, he first set to praying, then drank vigorously of coffee, and finally requesting a private interview, explained to me that if I were really an able man, I should replace him in power, or, failing this, that the next best course would be to let him rouse the whole coast line against every body else.

16. On the morning of the 20th we learnt that the Bedouins of Nauser bin Mobarek had assembled in large numbers on the shore line below the Menameh Fort, and threatened a night attack on the vessels. We further learnt that the tribes and inhabitants in general were in terror of violence from the pirate Chiefs and their followers.

17. To meet these circumstances, a letter was addressed to the head Chief, informing him that if injury occurred, the ships would open fire. Meantime *Clyde* was brought back to the anchorage opposite Menameh.

18. During the 21st a further letter was addressed to Mahomed bin Abdullah, informing him that the proceedings and movements of Nauser bin Mobarek had compelled us to resolve on dislodging him from the Menameh Fort, and we simultaneously addressed a letter to the head of the tribes on the coast line, requesting that neither men nor animals might be allowed to embark.

19. On the 22nd *Clyde* was run in to the inner anchorage immediately opposite the Menameh Fort, while the boats in charge of Lieutenant Acklom took up a flank position commanding one of the gates. Nauser and his Bedouins were speedily shelled out of the fort with loss, and received the fire of the small arms on emerging.

20. Nauser bin Mobarek then fled to a private house further inland. A spy indicated the building, and a shall bursting in Nauser's room again compelled him to fly with loss.

21. During the nights of the 22nd and 23rd information was brought to us of Nauser bin Mobarek being lodged in a musjid close to the shore line of the Bahrein Island. We therefore took the boats with intent to a night surprise, but the Pilot mistaking the channel in the dark, the boats grounded and had to return. Nauser, however, discovered our movement at daybreak, and retreated inland to the hill fort Ruffah.

22. On the 24th the winter set in and suspended all operations during three days.

23. On the 27th three craft attempting to run the blockade were fired on. Two of them then desisted, but one ran on and was burnt.

24. At sunset of the 27th intelligence reached us that Shaik Nusser, a sort of treasurer and general minister to the pirate Chiefs, had sailed across to Moharrag in view to an interview with his master, and that he would probably return after dark to Menameh. He was surprised accordingly in his boat while returning, and was brought on board *Clyde*. This is the man alluded to in former reports as having been the recipient of a large portion of the plunder, and without whose aid the pirate Chiefs and Bedouins could not have subsisted.

25. Learning on the 28th that Ahmed bin Abdullah, brother to the head pirate Chief, had been appointed to the charge of the Menameh Fort, firing was re-opened on it; and *Nymphe* with *Hugh Rose* in tow arriving

during the afternoon, their boats joined us, and at midnight we landed, entered the fort, and rendered it untenable; the boats were on this occasion in charge of Commander Meara, Her Majesty's Ship *Nymphe*.

26. On the 29th we landed again with the boats in view to searching the town premises of Shaik Nauser and to completing our work at the fort. I regret to say that during this operation, Captain Douglas received a severe shock while exploding a mine, and from which he is still suffering.

27. On the morning of the 30th we learnt the following important items of intelligence:—

1*stly*, that Esau bin Alee, whom we had invited over from Guttur, had been seen *en-route* at Zebairah, and that 30 craft had been observed making for that point;

2*ndly*, that Nauser bin Mobarek had left the Ruffah fort and taken up a position at Jow, where he had seized some craft, in view to intercepting Esau at sea, or to making good his own retreat in case of need;

3*rdly*, that the head Chief Mahomed bin Abdullah was still on the island of Moharrag prepared to be joined by Nauser bin Mobarek, or to escape himself by sea if necessary.

28. It now became advisable forthwith to make a move which should be calculated to meet all the above contingencies. Accordingly we took both the gunboats with all the ship's boats in tow and marines and small arms-men on board, and steamed round from the inner anchorage of Menameh to a point to the southward of Moharrag Island.

29. We thus placed ourselves in a position—

1*st*, to threaten Nauser bin Mobarek at Jow;

2*nd*, to aid Esau with his fleet on its passage from Zebairah to Moharrag Island; and

3*rd*, to cut off sea communication between Nauser bin Mobarek at Jow and Mahomed bin Abdullah at Moharrag.

30. The demonstration proved successful, and Nauser bin Mobarek, after committing some further cruelties, embarked with his Bedouins and fled to the Wahabee Coast.

31. On the following morning, 1st December, we again weighed anchor, and still accompanied by all the boats pushed up the Moharrag creek to a point a little way above the Moharrag Fort, which we thus commanded at a distance of 700 yards, while we commanded Mahomed bin Abdullah's fortified house and the town of Moharrag generally within a distance of 1,000 yards. We were further in a position for laying out the boats and so preventing Mahomed bin Abdullah escaping by sea.

32. We then prepared to land on the spit already described, and isolate the Moharrag Fort, which we proposed to occupy and afterwards to make over to Esau bin Alee as a point of appui.

33. While preparing this operation, the pirate Chief Mahomed bin Abdullah came on board in hope of arranging matters, and almost simultaneously Esau's fleet hove in sight.

34. We then informed the pirate Chief of the general situation, and called on him to elect between surrendering at discretion or proceeding at once on shore to take his own course. He surrendered, and his nephew Alee bin Nauser and his secretary named Jassim declared to surrender also, since they were committed to their Chief's cause. They sent on shore for their swords and made them over to me.

35. Meantime the landing took place (the marines and small arms-men under Commander Meara), and the garrison of the fort of Moharrag surrendered.

We occupied the fort, hoisted the British flag for an hour or so, and then made over the fort to a detachment of Esau's friends that had been previously prepared to garrison it.

36. On the following morning, 2nd December, Esau bin Alee with his fleet sailed up the creek, but before landing he visited us on board, when we received him publicly, recapitulated to him the circumstances of the past year, and then informing him that the rulership of these islands was vacant, and added that he could assume the government of them if it suited his convenience; but that in so doing he must clearly understand that he acted on his own account and not as our protegé; that he should organize his tribes and means of defence for himself, and that although in the case of his late father Her Majesty's Indian Government had deemed well to punish those who had slain him and seized his possessions to the injury of British subjects, yet that it must not be expected that Her Majesty's Indian Government would incur similar outlay and trouble for the future.

37. Esau bin Alee accepted the government with this knowledge, and further signed and sealed a document binding him to fulfil the conditions specified in the 3rd recommendation of my letter No. 184 of 5th of October. A copy of this document is appended.

38. We then gave the new Chief some good advice, permitted him to use every precaution against aggression from the Wahabee coast line, and swore the surrounding Chiefs upon the only oath which they consider really binding (*viz.*, "Telauk") to be faithful to Esau bin Alee as their ruler.

39. The new Chief then went ashore, and nearly the whole of the Moharrag population turned out to welcome him, while the native craft and houses hoisted flags.

40. Esau bin Alee visited us on two subsequent occasions, and on each occasion we marked our recognition by the salute usually accorded to the Chiefs of Bahrein.

41. Thus concluded our proceedings, and I trust that His Excellency in Council may consider that we have completely fulfilled his instructions.

42. As for myself I would add my deep satisfaction that no loss of life has occurred on our side. The result might very readily have been otherwise had our information been less accurate, or our own manœuvres less successful.

43. At the same time success has not been attained without considerable hardship and exposure to all hands. Both men and officers were detached from their ships for some 17 days, during which period they were nearly constantly in the boats, and called on for severe work both by night and day.

44. To Commander G. A. Douglas, Senior Naval Officer, I cannot too earnestly express my thanks for his most cordial and efficient support during the period he has co-operated with me in this delicate naval affair. Had our unity in action been less complete, or had he been impatient of detaining his squadron until proceedings were brought to a conclusion, it would have been impossible for me now to report full success.

45. Commander Meara, Her Majesty's Ship *Nymphe*, who commanded the boats on several occasions, and who has more recently been of much service in visiting the Pirate Coast, has my sincere acknowledgment of his courteous and valuable aid.

46. I would beg permission also to mention the name of Lieutenant Acklom, of Her Majesty's Ship *Daphne*. This old and experienced officer has performed unceasing and responsible duty during the whole period of the expedition, and had charge of the boats on the night of the capture of Mahomed bin Khalifeh.

47. Navigating Lieutenant White, Her Majesty's Ship *Daphne*, has placed me under obligation by his care and trouble in sounding, and by favoring me

with sketches of intricate navigation; and I may add that all the naval officers with whom I have had the honor of co-operating during the past seven years have been unanimous in opinion that they had never seen more treacherous and pirate-like ground than that which envelopes the reef-bound coasts of Bahrein and the Wahabee ports.

48. I have already brought the claim of Captain Elton, commanding Gunboat *Clyde*, under the notice of His Excellency, and it is unnecessary therefore for me now to do more than renew an expression of my satisfaction with him during the three and half years he has served in these waters.

49. Finally, I would desire, in concluding this inadequate despatch, to record my grateful thanks to all the officers and men of Her Majesty's Ships *Daphne* and *Nymphe* and of the marine Gunboats *Clyde* and *Hugh Rose*. It would be impossible for any men to behave with better order and discipline than did the men of Her Majesty's ships present during this expedition. Their self-restraint when landed in the town of Menameh after it had been abandoned by nearly all its male inhabitants, was remarkable, and defenceless women approached the column without fear of molestation.

50. It is necessary to bear in mind that while I may not venture to do more than mention the names of the officers who have been prominently associated with me, yet the heat and burthen of the day have been equally borne by all hands.

51. In the Political Department my Assistants, Majors Cotton, Way, and Sidney Smith, have been with me on every occasion, and I beg to strongly recommend these meritorious officers to the favorable consideration of His Excellency in Council.

52. It would be unjust if I did not add that my Interpreter, late Acting Uncovenanted Assistant, Mr. George Lucas, has been of essential service to me. During the past seven years he has accompanied me on numerous arduous and delicate duties.

53. The utility of the Angaum Telegraph Station, as shown on the present and previous occasions, will not escape the notice of His Excellency in Council. It is situate on a most convenient point for ordinary work, and during a crisis becomes the centre of communication.

54. Captain Douglas, like other Commanders, has brought to my notice the advisability of causing an accurate survey of the Kateef and Bahrein reef channels to be made.

55. I have remarked in a preceding paragraph *that the officers of Her Majesty's ships were detached for some 17 days in boats and on board the gunboats, when these went into shallow waters. During this period it became necessary to mess these officers at the tables of the Commanders or gun-room messes of the two gunboats. I would respectfully suggest that no claim be made on Her Majesty's officers on this account, and that an allowance at the rate of Rs. 5 per officer per diem be sanctioned to the Commanders and Messes at which the officers referred to were accommodated.

* Paragraph 43.

Dated 14th November 1869.

Telegram from—*Governor of Bombay,*
To—COLONEL L. PELLY.

Notify by telegraph to Mr. Thomson for information of Persian Government that you have received orders from India to proceed to Bahrein with gunboats and vessels of Royal Navy from Bombay, and to call Chief now in possession of island to account for breach of maritime truce and attack on Chief placed in power by British Government. Act on first recommendation in your No. 184 of 5th October; second recommendation approved, if on mature consideration on the spot of all circumstances and feelings of the people found

desirable; third recommendation depends on circumstances and left to your judgment how indemnity enforced blockade of Wahabee ports referred to Viceroy, and further instructions will be given immediately. Telegraph where to be sent and despatch steamer for them when Bahrein affair concluded.

Dated 14th November 1869.

Telegram from—COLONEL L. PELLY,
To—RONALD THOMSON, ESQ., *Tehran.*

I have received orders from India to proceed to Bahrein with vessels of Royal Navy and gunboats, and call on Chief now in possession of island to account for breach of maritime truce and attack on Chief placed in power by British Government. I am to beg you to inform the Persian Government accordingly.

Dated 12th Shaban 1286. / 17th November 1869.

From—LIEUT. COLONEL L. PELLY, *H. B. M.'s Political Resident, Persian Gulf,*
To—The Chief or Chiefs in possession of the Island of Bahrein.

I am instructed by Her Majesty's Indian Government to call on you to account for the signal breach of the maritime truce recently perpetrated on the Island of Bahrein, and in which act of piracy the Chief, Shaik Alee bin Khalifeh, was killed, the town of Menameh plundered, and numerous British subjects, together with those of Shaik Alee bin Khalifeh, grievously injured or ruined.

If any, or all, of you be desirous of coming on board, safe conduct will be afforded you to and from the ship to the shore.

As a precautionary measure, I warn you to clear out all women, children, and other non-combatants from any and all of your forts, whether in Menameh or Moharrag, and also from the neighbourhood of those forts, whether that neighbourhood be in the form of town or suburb; and it is necessary you should do all this within 24 hours from the time of my messenger delivering this letter at the gate of your fort in Menameh.

I trust that your own good sense and knowledge of the British Government may forthwith lead you so to act that it may not be necessary to resort to force.

But should this unhappily not prove the case, the senior officer of Her Majesty's vessels now present, and of those now on the way to Bahrein, will take such measures as to him may seem proper to carry into effect the instructions of the British Government.

Pending further communications, I would beg you to notify publicly in the town that no boat or other craft is to move from its present position; should it do so, it will be at its own risk. In like manner, pending further communications, no vessel of whatever description should attempt to enter the harbour of Bahrein unless at its own risk.

Dated 13th Shaban 1286. / 18th November 1869.

From—LIEUT. COLONEL L. PELLY, *H. B. M.'s Political Resident, Persian Gulf,*
To—ESAU BIN ALEE, *Guttur.*

After compliments,—I have had the pleasure to receive your letter.

I am now at Bahrein, and shall be glad to see you here if you will come quickly. You can bring with you as many of the Naeem tribe as an armed escort as you like. They will not be injured.

The vessels of war are with me.

Dated 13th Shaban 1286.
18th November 1869.

From—LIEUT. COLONEL L. PELLY, *H. B. M.'s Political Resident, Persian Gulf,*
To—SHAIK MAHOMED BIN SANEE, *Chief of Guttur.*

After Compliments,—I have invited Esau bin Alee to visit me here (Bahrein) with an armed escort of the Naeem tribe, and I desire that he may not be interfered with in any way.

Dated 15th Shaban 1286.
20th November 1869.

From—LIEUT. COLONEL L. PELLY, *H. B. M.'s Political Resident, Persian Gulf,*
To—SHAIK MAHOMED BIN ABDULLAH, *Bahrein.*

After Compliments,—Having reason to suppose that some of the inhabitants of these islands are in fear of being molested, whether by yourself, Nauser bin Mobarek or by the Bedouins piratically collected in Bahrein, I must request that, pending further communications, no chief, tribe or inhabitant of the Bahrein or Moharrag Island be injured whether in person or property.

Should injury take place, Her Majesty's ships will open fire.

Dated 16th Shaban 1286.
21st November 1869.

From—LIEUT. COLONEL L. PELLY, *H. B. M.'s Political Resident, Persian Gulf,*
To—SHAIK MAHOMED BIN ABDULLAH.

After Compliments,—Five days ago I addressed, in obedience to the orders of Her Majesty's Indian Government, a circular letter to the Chiefs in possession of Bahrein, informing them of the duty on which I came here with Her Majesty's ships, and inviting them to conform with the Government wishes, failing which it would become my painful duty to use force.

I invited all the Chiefs off to visit me within 24 hours. I repeated my invitation on the following day, and refrained from using force on my own responsibility.

Nauser bin Mobarek, the Chief who is now occupying the fort of the late Chief Alee bin Khalifeh, whom Her Majesty's Indian Government recognized as Chief of Bahrein, has neither acknowledged my letter, nor has he visited me under the safe conduct offered him. On the contrary, he has allowed his piratical Bedouins to assemble in large numbers on the shore line, and utter the insulting threat of attacking Her Majesty's ships. Further, he is every night clandestinely embarking his goods and animals in boats, and sending them close in shore towards the Wahabee coast in defiance of the blockade.

It is time for the Senior Naval Officer of Her Majesty's ships present and myself to convince this pirate and his Bedouins that they cannot with impunity reiteratedly insult Her Majesty's Indian Government and injure or ruin that Government's subjects. We are compelled to act accordingly. But it will be our chief care to avoid injuring the town or towns-people.

Dated 16th Shaban 1286.
21st November 1869.

From—LIEUT. COLONEL L. PELLY, *H. B. M.'s Political Resident, Persian Gulf,*
To—The Chief and Members of the Dowasir Tribe at Bedagabraud Zellag.

After Compliments,—I request you will oblige me by arranging that neither persons, animals or property be allowed to leave the coast of Bahrein.

Should any craft or person attempt to leave, please detain her or him and inform me. Any of the Dowasir tribe coming on board my ship will have safe conduct and be politely received.

Should persons or property be allowed to depart without my consent, the consequences will be on the head of all concerned.

Extract from letter No. 184 of 5th October 1869, from H. B. M.'s Political Resident, Persian Gulf, to the Secretary to the Government of Bombay, Political Department.

Thirdly, to come to an understanding with whatever Chief might be recognized, to the effect that the estates and other available property of the pirates and traitors, Mahomed bin Khalifeh, Mahomed bin Abdullah, and Nauser bin Mobarek, should be considered as forfeited, and that the produce and value of such property should be applied, in the first instance, towards the reimbursement of persons plundered. But I would exclude from claimants to such compensation such persons as may have implicated themselves in the purchase of plundered property at nominal rates.

I, Esau bin Alee bin Khalifeh, Chief of Bahrein, do, of my own free will, agree to the above arrangement.

Signed and Sealed by Esau bin Alee bin Khalifeh.

Signed and Sealed in our presence on the 3rd day of December 1869.

LEWIS PELLY, *Lieut.-Colonel,*
H. B. M.'s Political Resident, Persian Gulf.

G. A. DOUGLAS,
Senior Naval Officer of H. M.'s Ships employed in the Persian Gulf.

No. 154 P, dated 20th January 1870.

From—C. U. AITCHISON, ESQ., *Offg. Secy. to the Govt. of India,* FOREIGN DEPT.,
To—The Secretary to the Government of Bombay, Political Dept.

I have the honor to acknowledge the receipt of your letter No. 12, dated 8th January 1870, giving cover to a report from Colonel Pelly of his proceedings for the punishment of the offenders concerned in the raid upon Bahrein.

2. In reply I am directed to state that the Viceroy and Governor General in Council has perused the report with great interest, and he instructs me to communicate to you his entire approval of Colonel Pelly's proceedings.

3. His Excellency in Council is of opinion that Colonel Pelly has conducted the whole affair with great prudence, discretion, and courage, and he desires that the warm congratulations of the Government of India may be conveyed to that officer on his success.

4. His Excellency in Council likewise requests that the thanks of this Government may be communicated to Captain Douglas and to the other officers associated with Colonel Pelly for their exertions on the occasion.

5. With reference to paragraph 55 of the report, His Excellency in Council sanctions the proposal therein made regarding the messing of the officers for the time they were on detached duty with the gunboats, and requests that Colonel Pelly will state definitely the total expenditure incurred on this account.

6. The Marine Department will be asked to take into consideration the question of the survey of the Kateef and Bahrein reef channels referred to in paragraph 54 of Colonel Pelly's report.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 5 of 1870.

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, JANUARY 29, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

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No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

MR. TEIGNMOUTH SANDYS' PROPOSAL TO USE MORTAR BLOCKS IN SUPERSESSION OF CHAIRS AND SLEEPERS ON RAILWAYS.

Dated 29th November 1869.

From—TEIGNMOUTH SANDYS, Esq., *Bhaugulpore,*

To—*The Private Secretary to His Excellency the Viceroy and Governor General of India.*

When quite at your leisure, will you kindly favor me with a perusal of the enclosed memorandum, and exercise your own discretion in placing it before His Excellency the Right Hon'ble the Viceroy and Governor General of India for his information, whenever His Excellency may be pleased to consider the subject.

Should any orders follow thereon, my address is Teignmouth Sandys, Bhaugulpore; and oblige.

Memo.—*By* TEIGNMOUTH SANDYS, Esq., *of a system for a cheap and durable Railway, equal to high or low speed, and removable at pleasure,—dated 29th November* 1869.

It retains only any kind of rail in use, abandoning *in toto* the expensive system in vogue of costly and perishable sleepers, chairs, keys, &c., and ever changing ballast.

2. This is realized by accepting in lieu thereof the ground itself, together with all its ordinary or extraordinary gradients in an usual level country, and by raising embankments only in such places as may be requisite to keep the railway above water level.

3. In the ground, as thus naturally existent, or artificially made, the proposed railway works as follows :—

Blocks of ordinary mortar, half lime and half brick-dust, more or less of the former according to its quality, are compressed in moulds together with the rail to be used; and the result is that the block takes the correct impression of the rail as truly as a seal marks its sealing wax.

4. These blocks, when well dried, and subjected to exposure one rainy season before being used, all the better, become as durable as stone, and fit the rail which passes through them as truly as a key does its lock.

5. To each rail a certain number of these blocks is assigned. The number and size of the block of course depends in the character of the rail, and can be increased or diminished at pleasure, and is open to experiment. These blocks also serve the place of chairs, keys, &c., since the ends of each rail lock together in the centre of each block or can occupy two half-blocks placed in juxtaposition together.

6. These blocks are burried in the ground level with its surface, which thereby does the duty of sleeper. Once buried true to its opposite block, they are little likely to get out of gauge, since the size, weight, and thickness of the blocks, together with the great lateral resistance of the ground itself, will keep it in its proper place. In very loose soils, other simple expedients are available to insure adequate artificial lateral resistance for maintenance of the gauge, but the use of which would be exceptional.

7. For the East Indian Railway rail, I made a block of the following dimensions :—

Four feet square, six inches thick on the inner and seven inches thick on the outer side. Four of these blocks (3 entire and 2 halves) were assigned to each rail of 20 feet length.

Shortly after the opening of the railway to Bhaugulpore, I obtained permission to put down seven pairs of rails at the end of a siding, then much used for the conveyance of heavy stores, chiefly rails. Up to this date it is in the same spot. But of late years this siding has become superfluous, and is only occasionally used for spare carriages. A heavy locomotive was once taken over it without injury, but in such a cramped position; of course at no speed.

8. I was also in treaty for a similar experiment with the rail of the Nulhattee Branch Line, but the opportunity was lost, and it was never tried, though I then had, and still have, some 50 to 100 blocks quite enough for any preliminary trial.

9. These Nulhattee blocks were of like size and dimensions to those of the East Indian Railway; the object of both experiments being to ascertain what might be the correct size of block for a heavy and light rail respectively. Some of the East Indian Railway blocks, although all of the same standard size, 4 feet square, differed in thickness above seven inches.

10. The cost of each block, the prices of lime and brick-dust being ordinary, would average twelve annas. This, together with the cost of the rail, and the fixing such railway in the ground, would constitute its outlay in full for construction, as carried through a country in its natural level, and through shallow streams as would amply answer for local purposes in many places.

11. The objection raised by the Railway Engineers to these artificial blocks was "rigidity." Stone blocks had been tried and condemned. But it is self manifest the rail could not have rested in these stone blocks in the way they do within these artificial ones, as the expense of such manufacture, if practicable with stone, would have been prohibitory of any thing of the kind. Moreover, the idea of "rigidity" may or may not arise in prejudice resting on very incomplete experiment. Any one standing close to heavy train in motion cannot help feeling the vibration of the ground under his feet caused thereby. Whence then the rigidity of the ground itself? when everything founded thereon, let the railway system be what it may, thus yields to the violence of a train in motion, and which must necessarily increase in ratio to the speed with which the train is driven.

12. I do not claim for any block success, since, as already explained, this would be premature, but I think they will be found deserving of fair trial. If they cannot be made of sufficient size and thickness to stand the highest rates of speed, still they would undoubtedly answer for tramways and lower speeds, or wherever a cheap railway, rather than none should be desirable. In any case, a railway of this kind and kept in working order would be less expensive than the original cost of a metalled road and its maintenance; whilst the difference between the two systems would represent so much clear profit.

13. But it is quite beyond the capability of one individual to carry out experiments of this kind. Of late years, systems of cheap railway have attracted some attention, but they do not seem to make much progress. The principles so nobly recognised in the Government of India's proceedings of 22nd September last regarding Rheea, would doubtless tend to develop something valuable in this matter also, giving rise to a wider interest in it through the excitement of general competition, which so successfully brought the first real locomotive into existence. The Government of India also, with its now numerous direct railway engagements, in a country more especially like India, becomes the most interested party in such a matter.

14. I do not seek anything of the kind for my own proposition, but that it may give rise to something better. If I have sufficiently interested His Excellency the Right Hon'ble the Viceroy and the Governor General of India in the foregoing particulars, on the slightest expression of his pleasure to such effect, I shall be most happy to despatch per rail, for his inspection, two of the railway blocks above described :—

One for the East Indian Railway, with a portion of its rail locked therein.

One for the Nulhattee ditto ditto ditto.

15. After such inspection, should His Excellency still further express his pleasure, I shall be prepared to seek the removal of all the blocks now on the East Indian Railway siding at this station, and despatch them, together with some 50 to 100 Nulhattee ones, per rail, to Calcutta, to be placed down anywhere for trial His Excellency may be pleased to order. I beg to suggest their being put down, in the first instance, in the Municipal Railway. All that will be wanting is the requisite number of East Indian rails and Nulhattee rails, both of which, I conclude, will be easily procurable in Calcutta.

16. Should such trial turn out favorably, I am ready to place the system at the Government's entire disposal, on the sole condition that its commencement be placed in my hands.

This need to be only on a small scale to secure its future successful working. The expense would be inconsiderable, Rs. 2,000, for which I would supply the

requisite working tools, the moulds, two sets of portable presses, sufficient to work 10 to 20 moulds at one time, and a carriage for placing the blocks and rails in position.

I resign the free use of the system and its tools to the Government, who may cause them to be copied and improved on at their pleasure to suit any amount of work that may be undertaken.

Exclusive of the above amount, it would be as well to have a portable steam engine, so arranged as to work the best kind of soorkee and mortar mill, and, at the same time, serve as a traction engine for carrying on the line itself as constructed the working materials required, *viz.*, engine, mills, presses, blocks, rails, lime and soorkee (brick-dust)—the two latter from places most conveniently situated to the line itself. The blocks should be made on the spot itself, at distances suitably apart. Worked in this manner, the expense of construction ought to be reduced to a minimum.

17. On my travelling expenses being paid, and on a deputation allowance of Rs. 20 per diem during the next two years, I engage to proceed to any place required, and there superintend the commencement of any line of the kind proposed, so that my attendance there does not exceed from one fortnight to one month at any one time. I would undertake to teach a body of ordinary intelligent native workmen, under proper European supervision, to carry on the work, as well in my absence as in my presence, and after the commencement, perhaps any necessity for my deputation might be only occasional, and soon cease altogether.

18. I will not conceal from His Excellency what I look to as my real reward in this matter. I will be honest as I ought to be, whilst taking the liberty to trouble His Excellency the Right Hon'ble the Viceroy and the Governor General of India with the perusal of this memorandum, and which, I trust, the importance of the subject will excuse. I respectfully present it, not altogether through public motives ; I fear selfish ones are predominant. I wish to realize what is the cheapest kind of tram railway practicable and easily removable at pleasure, which would answer for agricultural purposes, more peculiarly invaluable in a country like India; and if at the same time it can combine other general purposes of railway conveyance, all the better. If this can be ascertained, then whether any one else or my own is the successful system, I would apply it, in the event of my eventually pursuing Rheea cultivation, to that cultivation to which, with its extension, which can alone secure its commercial success, it is, from the nature of the plant itself, peculiarly and economically applicable. If this can be ascertained at once, so much valuable time will have been gained beforehand.

Dated 6th December 1869.

Endorsed by the Private Secy. to the Viceroy.

Transferred for disposal to the Secretary to the Government of India in the Public Works Department.

No. 1972 R, dated 31st December 1869.

From—Major E. C. S. Williams, R. E., *Depy. Secy. to the Govt. of India*, P. W. Dept.,

To—Teignmouth Sandys, Esq., *Bhaugulpore.*

Your communication of the 29th November 1869, to the address of the Private Secretary to His Excellency the Viceroy and Governor General, with its enclosed memo. on a system for a cheap railway, having been considered

by the Government of India in this Department, I am directed to forward, for your information, copy of a note on the subject prepared in this Department, and to state that it appears to the Governor General in Council that, without cross ties, the system must fail for anything but slow-speed tramways. It might, however, it is thought, answer for sidings, but the Government of India is unable to make trial of the scheme, and there will always be on railways a quantity of indifferent material of the nature used for the running line, which may be disposed of in sidings where the wear and tear is not important.

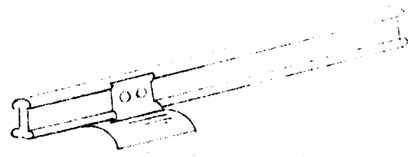
Note by the Under Secretary in the Railway Branch on Mr. Teignmouth Sandys' *proposal to use mortar blocks to hold rails in place.*

Mr. Teignmouth Sandys' proposal is apparently to use a block of concrete or mortar in lieu of sleepers, ballast, chairs, keys, and spikes to support an iron rail on which an engine is to run. From the clear description, the under-shown sketch is drawn to represent the position



of one of these blocks which are to set on ordinary ground, except where embankment and bridging are required to keep the rail above water.

There is no doubt but that good mortar may be made so as to fit round the rail, and hold it in its place in dry weather if there be no passing load. Mortar has no special advantages, according to the written description, but cheapness. Iron moulded in the same shape would answer the same purposes, and if iron moulded, then iron wrought to fit the rail tightly by means of bolts or rivets as below :—



Iron has been tried in this way, and it has been found that ballast is required just as much as if a wooden sleeper were used.

As a heavy weight passes over any part of the earth, that part is depressed, and it does not perfectly recover its position after the load is removed. After several of these compressions and partial recoveries, the rail must have the support packed up to prevent the rail from being bent; it is to supply a hard material for this purpose that ballast is used. It would be wanted for the brick blocks as well as for any other kind of support.

Again, the inventor thinks that lateral ties will not be necessary. They have been found to be necessary in every case where the rail has even been supported throughout its entire length, as in the Great Western Railway of

England. The principle of the mortar blocks does not counteract the effect if the side blow of an engine wheel and ties would be wanted, as well as for any other kind of support.

Again, as ballast is necessary for packing, so it is necessary also to use an implement by which to force the ballast firmly up to the support. In this operation, the iron tool or beater is so forcibly struck against the support that even wooden sleepers are beaten to pieces.

Mortar is very brittle compared with wood, and must necessarily suffer much more under repeated blows than wood.

Again mortar, although it may fit fairly against the rail when it first is laid down, must wear, as a load of six tons on each rail strikes sometimes vertically, sometimes sideways, on the rail. When it wears in even the slightest way, there is no means of repairing the block of mortar; the abrasion must increase, and the rail must rattle dangerously in the support, as it is not possible to tighten it.

A rigid support, such as is recommended by the inventor, was probably the first kind of support devised for a rail, and when it was found to fail, other more artificial expedients were resorted to. Notably, a cast-iron chair closely fitted to a rail and resting on a stone block was tried and condemned, as being not expensive in itself, but as being most costly in the destruction it caused to rolling stock. The mortar block could not be better than the stone block; if so good, it would be too expensive, according to past experience, to adopt.

This proposal has been well known for the past ten years in Bengal, and as the principle is defective, I do not recommend that any expense shall be gone to. The good faith of the inventor and the single-minded perseverance which he has shown in the prosecution of this and other experiments, deserve a more remunerative result than can, in my opinion, accrue from the nature of his trial.

Dated 7th January 1870.

From—TEIGNMOUTH SANDYS, Esq., *Bhaugulpoor*,

To—*The Depy. Secy. to the Govt. of India*, P. W. DEPT.

I have the honor to acknowledge your favor No. 1972R, dated 31st ultimo.

May I request the favor of your own and Mr. Vaux's perusal of the enclosed suggestions in reply to that gentleman's opinion, beyond which I will not take the liberty to trouble you further.

I beg to submit my best acknowledgments for the attention bestowed on the subject.

Suggestions in reply to MR. VAUX'S *opinion, dated 13th ultimo, regarding mortar blocks for rails.*

If the experimental proposition does not altogether dispense with the ever-shifting expensive ballast and perishable sleepers as now in vogue, then it is not worth a trial.

The mortar blocks are not set on ordinary ground, but together with the rail are buried therein, just as much as rails on the East Indian Railway are buried almost even with the ballast, leaving only the upper or running rail exposed to view.

For instance, each mortar block being four square feet, and seven or nine inches thick, is firmly fixed in the ground, leaving only one and one-quarter inch thick visible above ground.

In this way, also, the ground itself forms the tie. For such a tie to be weak, the ground itself to the full size of the blocks themselves, including both sides of railway, must first give way; whereas, in solidity, the ground itself may be said to be immoveable, whilst ballast, in its very essence, is moveable. In exceptional cases, where the ground is treacherously weak, a difficulty would arise to be counteracted by other contrivances sufficiently simple in the face of such complexity.

Ballast now used as a hard material to counteract depression of the earth caused by heavy weights passing over it, is self-provided for in the blocks themselves, since each one shows a base of four square feet or sixteen square feet to each rail of twenty feet in length; whereas sleepers and chairs as now in use are restricted to as many inches. These mortar blocks also are capable of being increased in size either by the square or superficial contents, say half as much again, whilst there is no limit to thickness within the given size short of what is convenient. Thus, with a sixteen square feet resistance, the depression of the earth will be reduced to a minimum, and, if any, then these mortar blocks admit of packing easier than is now the case with ballast. Blocks and rail together could be readily raised out of the ground, without recourse to the laborious violence and blows ballast so much delights in, and their foundations mended by simply throwing in a little earth, or any hard material if preferred, which would soon become so solid as to need little repetition, certainly not of the incessant kind and extent to which ballast is now subject.

The Great Western Railway of England never tried principles of this kind.

As regards the wearing of the mortar blocks by abrasion, experiment alone could test this. But the same remarks as above are applicable. Here again, mortar blocks have to deal with feet, instead of, as in the case of chairs, keys and sleepers, with inches. The abrasion, therefore, would be necessarily less in proportion to the wearing surface, most where narrow, less where broad, and the earth itself from each side, or a little sand placed above and shaken by the traffic itself into any vacant place, would serve to keep the rail tight, and prevent rattling. Further, in case of any of the blocks becoming unserviceable, the material itself could be re-used, with the addition of a certain proportion of fresh mortar to make new blocks.

No. 101 R, dated 17th January 1870.

From—Colonel R. STRACHEY, R. E., *Offg. Secy. to the Govt. of India*, P. W. DEPT.,

To—TEIGNMOUTH SANDYS, Esq., *Bhaugulpoor*.

I have the honor to acknowledge receipt of your favor of the 7th instant in further explanation of your proposal to use mortar blocks in supersession of chairs and sleepers on the State Railways, and in reply I am directed to observe that the remarks contained in the Under Secretary's note, forwarded to you on 31st ultimo, in No. 1972R, appeared deserving of some weight, and likely to be of interest to you; but they are not to be understood as representing any conclusions come to by the Governor General in Council, or to have been sent to you as though thought to be conclusive as to the merit of your invention. The Government of India, however, after full consideration, and thanking you for your suggestions, do not consider themselves at present justified in expending money in experiments on mortar blocks to replace sleepers.

GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 21st January 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding*.
His Excellency the Commander-in-Chief, K. C. B., G. C. S. I.
The Hon'ble G. Noble Taylor.
Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble Gordon S. Forbes.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey, C. S. I.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
The Hon'ble F. R. Cockerell.

HINDU WILLS BILL.

The Hon'ble MR. STEPHEN moved that the Report of the Select Committee on the Bill to regulate the Wills of Hindús and Buddhists in the Presidency Towns be taken into consideration. He said—"My Lord, my hon'ble friend Mr. Cockerell proposes to move, as an amendment, that this Bill be referred back to the Select Committee with instructions to report again in six weeks. I shall have no objection whatever to agree to that course, because the Select Committee has made a very important alteration in the draft of the Bill introduced to the Council some time ago, by proposing that that section of the Indian Succession Act, which refers to perpetuities, be extended to the wills affected by the Bill. I understand, also, that the Hon'ble Mr. Cockerell wishes that the Bill should be extended to the wills of the whole Hindú population of Lower Bengal. These two proposed alterations undoubtedly require careful consideration. I have therefore no objection to agree that the Bill should be referred back to the Select Committee, and that they should be instructed to report in six weeks. At the same time, I hope that I shall not be wasting the public time by making a statement in the Council with respect to the character of the Bill in some particulars, and more especially with regard to the alterations now suggested. I do so in the hope that, in the course of the six weeks during which the Bill will undergo further consideration at the hands of the Select Committee, public attention may be directed to the real points at issue; and that the motives which actuated both the original draftsmen and the Committee in bringing the Bill into its present shape, may be properly appreciated. I shall therefore say a few words on the different provisions of the Bill, and enter somewhat more fully into the reasons of the Committee with regard to the clause regarding perpetuities. After the circulation of the Statement of Objects and Reasons, and the statement made by the Hon'ble Mr. Cockerell on a former occasion, I may pass rapidly over the general features of the Bill. I wish, however, to say, that one principle has been recognized throughout every part of this measure. That principle is to combine the utmost possible respect for Native opinions and institutions, with a gradual improvement of those institutions, and their adaptation to changing circumstances.

In the first place, I may say a few words about the history of the measure. A paper was circulated, requesting the opinions of persons well acquainted with the subject, so far back as the year 1865, almost immediately after the passing of the Indian Succession Act. The answers to that paper are most interesting, and peculiar interest attaches to the Native opinions, many of which are very able. One point on which these answers threw light, was the importance of not extending the provisions of the Succession Act to Muhammadans, and this has been recognized in the original draft of the present Bill. The Muhammadans possess an elaborate legal system of their own upon the subject of wills. It is closely connected with all their customs and with their religious belief, and it would be improper to disturb it. An excellent detailed statement of the differences between the Muhammadan law and the Indian Succession Act upon this subject has been supplied by a former Muhammadan Law Officer in the North-West Provinces. It is printed at length at pp. 48—57 of the collection of papers. On the whole, speaking of the contents of the papers generally, I may say that, though the Native gentlemen consulted made some objections to what they supposed to be the purport of the proposed measure, objections which were obviated by the provisoes which have been introduced into it, the papers show that they received the main provisions of the Bill with satisfaction. I will read, as an illustration of this, a few observations made on the Bill by the Rájá of Benares. After quoting some authorities, the Rájá observes—

'At all events, the written will has now come into use, and the reason is that the people have become gradually impressed with the idea that property, whether personal or real, is, without a written will, liable to injury, and that the disputes of relations burden the estate or property with heavy law-expenses, by which it is eventually ruined and lost.

It being, therefore, apparent that the Natives have followed the example of the English in this respect, and that written wills are being generally adopted, it is expedient to prescribe rules for their execution.

The objections to, and defects in, nuncupative wills, alluded to in the confidential letter of Government, are with few exceptions just and valid. No definite limits can be assigned to nuncupative wills, and although the High Courts of Calcutta, Madras and Bombay admit the legality of nuncupative wills by Hindús, yet the times and the condition and character of the people render the execution of written wills preferable.'

I come now to the objections raised against the measure. They can all be brought under the four following heads:—*First*, that the Bill would interfere with the Native Law of Succession; *secondly*, that it would interfere with the Native Law of Marriage; *thirdly*, that it would interfere with the right to leave property for the purpose of a religious endowment; and, *fourthly*, that it would interfere with the supposed right of Hindús to create a perpetuity. Of these four objections, the first is met by the proviso that nothing contained in the Bill shall enable a testator to bequeath anything which he could not have alienated *inter vivos*, or to deprive any persons of any right of maintenance which they would have possessed if he had died intestate, and by the omission of certain Parts of the Succession Act, to which I shall refer in their place. The second is met by the proviso that marriage, in the case of Hindú wills, shall not operate as a revocation. The third is met by the omission from the Bill of the 105th section of the Indian Succession Act. The fourth objection proceeds, as I shall show at length, upon a misconception of the Hindú law.

When the effect of the provisoes referred to is considered in connection with the omission from the present Bill of certain Parts of the Indian Succession Act, it becomes apparent that the result of the whole measure will be to preserve to the Hindús the full benefit of every part of their present Law of Inheritance. In order to set this in a clear light, I will go through the provisions of the Bill, and show how they bear upon the subject when taken in connection with the provisoes.

The general object of the Bill is to apply to the wills of Hindús such Parts of the Indian Succession Act as are adapted to their circumstances. I will now

point out specifically which Parts of that Act are, and which are not, regarded by us in that light. The first six Parts of the Act relate to domicile, consanguinity, intestacy, the distribution of intestate property, and the effect of marriage. No part of these provisions would apply to Hindús : to apply them would be to produce a total revolution in the Hindú Law of Succession and Inheritance, and they have accordingly been omitted. The seventh Part of the Act is general, and begins with the forty-seventh section, which is in these words—'Every person of sound mind and not a minor may dispose of his property by will.' This, standing alone, would no doubt affect considerably the Hindú Law of Inheritance, but it must be taken in connection with the proviso to which I have already referred,—that nothing contained in the Bill shall authorize a testator to bequeath property which he could not have alienated *inter vivos*, or to deprive any persons of any right of maintenance which they would have possessed if he had died intestate. The effect of section 47, qualified by this proviso, will be that Hindús within the local limits of the Bill will be able to dispose by will of such property as Hindú law permits them to dispose of by deed *inter vivos*, and that their testamentary power will be limited by such rights of maintenance as Hindú law confers upon their families at present. Nothing else in the application of this part of the Act requires notice till we come to Part IX, which relates to the wills of soldiers and sailors on active service. By the Indian Succession Act as well as by the Law of England, such wills may be nuncupative. This Part is not applied to Hindú wills, because the wording of section 50 renders it unnecessary to do so. That section runs thus—'every testator, not being a soldier employed in an expedition or engaged in actual warfare, or a mariner at sea, must execute his will in the following manner.' Therefore, if the Hindú testator is a soldier or sailor on active service, section 50 does not apply to him, and he is still at liberty to make a nuncupative will according to the present Hindú law. The tenth Part of the Act, with regard to attestation, revocation, alteration and revival of wills, requires no notice.

The Parts (XI to XXVIII, both inclusive), which relate to the construction of wills, may require a few words. They consist mainly of provisions which can in no way whatever affect any rights of inheritance. They are merely directions for the guidance of the Judges in settling cases, which, as experience shows, constantly arise as to the meaning of a testator's words. They are of universal application, and will be found of great convenience to all persons having to interpret wills, and, as to most of these rules, I cannot conceive how they should be opposed to Native ideas. There are, however, some of them of which this cannot be said. They are contained in sections 78, 79, 80, 81, 84, 86 and 87, and arise principally out of certain technicalities of English law. I need not trouble the Council even with a slight sketch of these, but any one who possesses any acquaintance with English Real Property Law must be aware that such words as 'heir,' 'right heir,' 'children,' 'issue' are dangerous in the extreme, and that, if used without the greatest care and the best possible advice, they are nearly sure to produce litigation. This arises, not from the nature of things, but from peculiarities in the English law, especially in the English Law of Real Property, which have nothing to do with the wills of Hindús. The rules relating to the interpretation of such expressions have accordingly been omitted from the Bill. I pass over, for the present, the section relating to perpetuities, which occurs in this part of the Succession Act, and I come to Part XXVIII, relating to what is called in English law the *Donatio mortis causâ*. We have omitted to extend this Part, first, because it has nothing to do with wills, and, secondly, because we do not wish to interfere with the rules of Hindú law in regard to gifts.

The next part of the Succession Act which is applied to Hindú wills is that which relates to executors and administrators with a will annexed. It consists of Parts XXIX, XXX, XXXI and XXXIII to XXXIX, both inclusive. The matters to which these Parts relate are most important, and the

change which we propose to effect by applying them to Hindú wills will, I hope, be found most beneficial. Speaking generally, the object of the Bill is to give to Hindús the benefit of definite rules with regard to the duties and position of executors and of administrators with a will annexed; but we have been exceedingly cautious to leave out every section the effect of which would be to vary the course of inheritance. We have effected this object in the following manner :—

By section 179 it is provided that the executor or administrator of a deceased person is his legal representative, and all the property of the deceased person vests in him as such. This would have altered the Hindú law, if we had not qualified it by the proviso that nothing shall vest in the executor or administrator with the will annexed of a deceased person which such person could not have alienated *inter vivos*.

Again, sections 200—207 provide in substance that, if a man dies intestate, administration is to be granted to his next of kin in the order stated in other parts of the Succession Act. If these sections had been applied to Hindús, they would have altered the present practice of granting administration. We have accordingly abstained from extending them. On the other hand, by sections 195, 198, 230 and 231 (which are extended to Hindú wills), administration with the will annexed must be granted to the person who would be entitled to administer in case of intestacy, and we have taken care to add words to those sections to show that we mean the person now entitled, without reference to our Bill or to the Succession Act. The Court will have to be guided in such cases by the Hindú law. In the language of our Courts, the grant will follow the interest; that is, the letters will be granted to the person or persons who, according to Hindú, Jaina, Sikh, or Buddhist law (as the case may be) are entitled to succeed to the estate of the deceased, or in the case of an undivided Hindú family, to the managing member of the family. These arrangements in my judgment effectually protect the Native Laws of Inheritance from any alteration by this part of the Act. I hope that, with these precautions, this part of the Act will prove to be highly beneficial. It will for the first time define clearly the position and powers of a Hindú executor or administrator, and provide him with distinct and authoritative guidance in the discharge of his duties. This is highly important; for, as matters stand, the position of a Hindú executor is difficult to comprehend. A Hindú will itself is a matter of comparatively modern growth, and a Hindú executor is in a condition even more embryonic than that of a Hindú will. He is at present rather a manager than an executor; but by these provisions he will be placed in very much the same position as an English executor, though the substance of his duties will be regulated by Hindú law.

One or two other provisions of small importance have been omitted. For instance, we do not apply to Hindú executors the provisions relating to executors of their own wrong.

I now come to a matter in which a substantial alteration has been made in the Bill by the Select Committee,—that is, the question of perpetuities. The section which we propose to introduce is this—

'101. No bequest is valid whereby the vesting of the thing bequeathed may be delayed beyond the lifetime of one or more persons living at the testator's decease, and the minority of some person who shall be in existence at the expiration of that period, and to whom, if he attains full age, the thing bequeathed is to belong.'

That is substantially the rule of the English law, and the Committee propose that it should be applied to Hindú wills. It has been said that this is an alteration in the Hindú Law of Inheritance. I have studied the matter as carefully as I could, and after considerable trouble and consideration I have arrived at the conclusion that it would be difficult to imagine a more total and complete mistake. I am indeed disposed to doubt whether those who make such an objection know what a perpetuity means. If they did, they would see that the power to

create a perpetuity, as we understand it, is diametrically opposed to the whole spirit and character of the Hindú law. It may be necessary for public information to say, in a few words, what I understand by this power. It is, in substance, a power of posthumous legislation for an indefinite period, by which the testator or settlor is enabled to restrain the alienation, and to suspend the possession and enjoyment, of property for such time as he chooses—a power to lock up land and capital for ever, to prevent the free circulation of property, to check the improvement of land, to render its acquisition impossible. The possession of this power has, by a strange peculiarity, by a sort of disease of the human imagination, been ardently desired by a certain number of persons in all countries and at all times. People seem to suppose that they can perpetuate their own enjoyment of property by interfering with other people's enjoyment of it after they are dead and gone. They seem to think that a man can extend his own life by doing something which, hundreds of years after his death, will affect the lives of other people. This delusion invariably springs up in men's minds when the power of making wills is conceded to them. It exists to this day both in England and in India, and has shown, as it is still showing, itself in the most absurd and mischievous testamentary dispositions. The object sometimes is, as in Mr. Thellusson's case, to accumulate enormous sums of money for the benefit of some distant descendant. In other instances testators have attempted to regulate the succession to property in a manner totally unknown to the law, and others have attached childish and ludicrous conditions to the enjoyment of their property. One man provided that certain furniture should never be taken out of his house during the term of several lives in being, and for twenty-one years afterwards, and had he had power to extend these conditions over many centuries, he would no doubt have done so. That a wish of this kind exists, not only in England but also in Bengal, and that it exists at present as strongly as ever, is proved by a case decided lately—the case of *Kumara Asima Krishna Deb* (Appellant) v. *Kumara Kumara Krishna Deb* (Respondent). The testator in that case provided by his will for the accumulation of his property for ninety-nine years at least, and probably for a much longer period. That is an example of what is meant by the system of perpetuities, and I assert that it is sanctioned neither by the Hindú nor by the English Law, nor by any system whatever, which is based upon common sense even in a small degree. I will add that, under every system of law with which I am acquainted, it has been found necessary to devise means to restrain persons from putting into effect these extravagant and mischievous notions of their testamentary powers.

It is by no means easy to see how the opinion that the Hindú law authorizes the creation or existence of perpetuities ever arose. I asked myself this question when I entered upon the consideration of the subject, and the more I studied it the greater became my difficulty; because it was perfectly clear that, if any law could be opposed to the system of perpetuities, that law was the law of the Hindús; and this I will endeavour to show in a few words. There are two modes in which the devolution of property may be regulated. It may be regulated, either by the provisions of the law as to its descent, or by will. So far as it is regulated by law, it cannot be regulated by will, and so far as it can be regulated by will, it is not regulated by law. In proportion, therefore, as the law of any country regulates the devolution of property, to that extent it excludes testamentary power; and the more any given system recognizes the principle of permanence, the more alien to that system would be the principle of testamentary perpetuities as I have described it. In England a very wide latitude is permitted to the testamentary power. In France hardly any latitude at all is permitted. The French law declares that the whole of a man's property shall descend to his children equally, with certain exceptions. It therefore excludes the power of creating perpetuities by will, and consequently the power of creating perpetuities is more alien to the law of France than to the law of England. I now proceed to consider how the law of Hindústán stands with respect to the power of creating perpetuities by will, and I assert that no imaginable system of law could be more fundamentally opposed to them; for it is a system so unfavourable to testamentary power of any kind at all, that wills themselves are unknown, or all but unknown, under it; and that, in the greater part of the country, the owner, or rather the possessor, of property, is not only unable to leave it by will, but is unable to alienate it *inter vivos*, except with the consent of his sons. The Hindú law upon this subject differs in different parts of the country. It is contained, as is well known, in several authoritative works, the authority of which applies to different districts. The Mitákshará is the great authority for all the schools of law except for that of Bengal, and might perhaps be described as the common-law of Hindústán; though the phrase must not be pressed as it is liable to abuse. There is also the Dáyabhága, which prevails in Bengal, the Vyavahára Mayúkha in Bombay, and there are other authorities which prevail in Madras and other parts of the country. The general scheme of the Hindú law is, that a man's property is to descend to his family. It is indeed hardly an exaggeration to say that the family, and not any one living man, owns the property, and that the father is more in the position of a manager than in that of a proprietor, as appears from the whole purport of the law of partition, the distinction between ancestral and self-acquired property, and the rules which pervade the whole subject as to divided and undivided families. Such being the state of the Hindú law, is it possible to imagine anything more diametrically opposed to the testamentary power, and still more to the power to create a perpetuity by will, which must, by the nature of the case, derogate from the most essential provisions of the Hindú law? What can be more opposed to the spirit of the Hindú law than that a man who cannot alienate his ancestral immoveable property without the consent of his sons, grandsons and great grandsons (if he has them), should be able to leave it by will to a stranger for life, and to entail it for ever upon one particular line of that stranger's descendants?

This being the state of things, it is a curious question how the notion that testamentary perpetuities formed a part of Hindú law can ever have grown up? As I am most anxious to vindicate fully the course which the Committee have taken, I will try to answer this question, though it will involve a somewhat technical statement. Whatever the precise origin of Hindú wills may have been, it is an admitted fact that they are of very modern origin. My own opinion is, that they came into use after the establishment of British rule in Hindústán, that they grew up by degrees, and that a certain number of obscure texts in Hindú law-books, which in fact apply to a different subject, were used for the purpose of sanctioning their introduction after the practice had been introduced. My opinion on such a subject is of course of little value; but as far as I can judge I should say that the native texts in question apply, not to the power of making wills, but to the power on the part of a father to make dispositions of his property to take effect after his death, which gifts, when once made, were irrevocable. Now the essence of a will is, that it is ambulatory; that is, that it is revocable until the moment of death, and becomes irrevocable only upon the death of the testator.

The documents which are now described as Hindú wills antecedent to the establishment of the English power were in fact, as I believe, irrevocable gifts made during the lifetime of the testator. I ought however to add that, in Lower Bengal, where the Dáyabhága prevails, the legal right of alienation on the part of the head of a family has been established, though, in the absence of his sons' concurrence, it is reprobated as immoral. The effect of this would no doubt be to suggest the idea of alienation by will, and to dispose people to find authorities for that practice, when once introduced, which in point of fact have nothing to do with it. Be this how it may, there is no doubt that the power of making wills has been well established in Bengal ever since the famous Nuddea case, which was decided early in the present century. What might have been expected followed. When the Natives of Bengal

began to make wills, they soon began to wish to create perpetuities; and inasmuch as wills had been unknown to the early Hindú laws, those laws contained no rules against perpetuities; hence they argued that they had the right to create perpetuities. No argument could be more absurd. It might be stated thus:—because it was till very lately questionable whether we had the power to make a will at all, therefore we have now an amount of testamentary power which no other nation ever possessed. This was fully recognized by the Courts of justice which had to decide upon particular cases; but there is some real and more apparent confusion and indistinctness in the way in which they dealt with the subject; and in order to state precisely the existing state of the law it will be necessary to enter into a certain amount of technical detail. In 1859, a case came before the Privy Council. It was the case of *Sonatun Bysakh* v. *Sreemutty Juggutsoondree Dossee* (8 Moore I. A. C. 66). In that case an attempt was made to create a perpetuity, and the Supreme Court at Fort William had laid down the law upon the subject in the following words, p. 78:—

'If the question were untouched by authority, we should be of opinion that the testamentary power engrafted upon the general Hindú law by the custom of Bengal, which has been recognized and established by repeated decisions, must be taken to exist, subject to those restraints which the general policy of the law imposes on the exercise of testamentary power in general; and in particular, that it cannot enable a Hindú testator to alter, perpetually, the legal course of succession to his property by making it pass for all time to those who, taking not as legal, but as substituted, heirs would, according to our phrase, take, not by descent, but by purchase. But in truth we are bound to hold this, unless we are prepared to overrule the decision of the Court when presided over by the late Chief Justice in *Luckunchunder Seal* v. *Koroonamoney Dossee*, Boulnois' Reports, 210. Therefore, some time before 1859, the Supreme Court ruled against the doctrine of perpetuities. The Privy Council, in their judgment in that case, passed over the subject of perpetuities; but they varied the decision of the Supreme Court on other grounds, and the effect of that was, that it seemed doubtful whether the ruling of the Supreme Court as to perpetuities was correct. That doubt would appear to have been considerable, inasmuch as a case (*Ramdhone Ghose* v. *Annundchunder Ghose*, 2 Hyde, 93) was decided in the year 1864, by Mr. Justice Levinge, in which he not only held that a devise creating a perpetuity was valid, but referred, as the ground of his decision, to certain remarks made by Sir Barnes Peacock in a case (*Goberdhun Bysack* v. *Shamchund Bysack*) decided by him some time before and now reported in Bourke, 282. The effect of this decision, so far as it went, was to prove that perpetuities were valid according to Hindú law. However, the subject again came up for decision in a later case (reported in 2 Bengal Law Reports, O. C. J. 11), and with reference to a will which attempted to create a perpetuity for ninety-nine years. In that case, Sir Barnes Peacock strongly pronounced against the power of creating a perpetuity. I shall not give the very words used by Sir Barnes Peacock on these occasions, because to do so would occupy too much time, and require the statement of too many facts of no general interest; but the substance of his explanation of the apparent inconsistency between his two judgments was, as I understand it, as follows—'I said *then*, and say now, not that by Hindú law perpetuities were good, but that the remedies against perpetuities adopted by English law did not apply to Hindús,' which was quite a different proposition. At all events, in the second case, he expressly laid down, in the clearest way, that perpetuities were not only not valid by the law of the Hindús, but were on the contrary opposed to the whole spirit of the Hindú law. Besides these cases, certain expressions fell from the Judicial Committee of the Privy Council, in giving judgment in another case (*Sreemutty Soorjeemoney Dossee* v. *Denobundoo Mullick*, 9 Moore, I. A. C. 123) which I could imagine might favour the notion that perpetuities were valid by the Hindú law. Lord

Justice Knight Bruce said—'We are to say whether there is anything against *public convenience*, anything generally mischievous, or anything against the general principles of Hindú law, in allowing a testator to give property, whether by way of remainder, or by way of executory bequest (to borrow terms from the law of England) upon an event which is to happen, if at all, immediately on the close of a life in being. Their Lordships think that there is not.'

Now those words 'remainder' and 'executory bequest' are words with regard to which there is a very long history, and a person who reads the judgment quoted carelessly, or with a strong wish in his mind to find in it an authority for perpetuities, might perhaps argue that the Court meant to say that the Law of Remainders and Executory Devises, as it exists in England, is in force in Hindústán without the restrictions to which they are subjected in England, and of which the judgment says nothing. That is not, as I need hardly say, the true construction of the judgment; but it is a construction which might be put upon it by a prejudiced mind. This, however, is more or less speculative; but whatever may have been the particular phrases or cases which gave rise to the notion of the legality of perpetuities, I do not think I can be wrong in saying, in general, that it was due to a want of perception of the leading idea which runs through all these cases, which is this:—The Judges were anxious, from first to last, to condemn perpetuities on the one hand, without introducing, on the other, the remedies against them provided by the English Law of Real Property; and the language which they employed for the second purpose may have appeared, or may even have been, to some extent, inconsistent with that which they used for the first purpose. I do not think, however, they should be blamed for an anxiety which may have led them a little astray in their language in one or two instances; for the introduction of the English Law of Real Property into this country would be a worse remedy than the disease. The difference between the laws of the two countries is this:—In India, wills and perpetuities alike were altogether unknown until quite lately, and the absence of express rules against perpetuities arose from the absence of any law about wills. In England, both wills and perpetuities are comparatively ancient, and the safeguards provided by the judges and the legislature against the abuse of the one, by the introduction of the other, are to the last degree intricate and technical. I need not trouble the Council with a history of them; but by way of giving a faint notion of what India has escaped by the refusal of the Courts to introduce them, I may mention in a very few words the leading points of that history. It begins with the Statute *De donis* (13 Edw. I). It goes on to the invention of fines and common recoveries. Its next stage is the Statute of Uses. Then we come to the rule in Shelley's case; the *Scintilla Juris*; the learning of contingent remainders; shifting and springing uses, and executory devises; the doctrine of powers, which cannot be understood without a full appreciation of the nature of estates and tenures and of the distinction between law and equity; and many other matters which I do not at this moment remember, and of which it would not interest you, My Lord, to hear. The result no doubt is, that the English law has settled down into a definite form. But those who argue that, because these doctrines—intricate, complicated, all but unintelligible as they are—do not apply to the wills of Hindús, therefore perpetuities do exist by the law of Hindústán, argue as absurdly as if they said that a man does not recognize a painful disease as such, because he is not prepared to undergo, for its cure, some strange series of intricate operations which happen to have been inflicted centuries ago on another patient of a totally different constitution. The conclusion from all this is, that the Hindú law does not sanction perpetuities, and that its spirit and temper are entirely alien to them.

As I wish to put this matter beyond dispute, I may add that the same proposition may be collected from the judgments of Chief Justice Scotland in the case of *Arumugam Mudali* v. *Anmi Ammál*, 1 Madras High Court Reports, 400, and of Mr. Justice Macpherson in the recent case of *Sreemutty Kistomoney*

Dossee v. *Anund Krishna Bose*, and that it is assumed on appeal by the Judges in the late case of *Tagore* v. *Tagore* as one of the grounds of their decision, although the case did not expressly turn upon it.

We now come to the question of legislation. The long review of decided cases which I have been obliged to give, proves clearly that legislation is necessary. If we do not legislate, the courts of justice will; and inasmuch as they will have to legislate *ex post facto* on each particular case as it arises, and no further than that case will warrant, it is probable that, if the matter is left to them, we shall get, at an immense expense to litigants, and after the lapse of generations, a system as complicated as that of the English Real Property Law. We must therefore lay down some rules. What are they to be? Our answer is, the 101st section of the Succession Act. Apply those three lines to Hindú wills, and you settle the question. If we do not do that, we must make perpetuities legal by express words, and I think no one would propose so monstrous a system. The reason on which the rules of the Succession Act are founded is obvious enough. They enable a person to provide for all contingencies as to which ordinary human prudence can form reasonable anticipations. The owner for the time being can say to a particular man—'I think you should have a life-estate in my property, and after that it shall go to your son, then living, when he attains his majority.' Such a period is one over which a man's interest in the affairs of the world would naturally extend, and as to which he can form rational anticipations. To enable a man to legislate as to the employment of what once was his, centuries after his death, is to sacrifice the living to the dead for no other purpose than that of gratifying a diseased and mischievous appetite.

I now come to a very important matter, which, however, may be very briefly dismissed. This is the omission from the Bill of section 105 of the Succession Act, which relates to religious endowments. With regard to this, a very strong expression of opinion has been given by many of the Native gentlemen who were consulted. The Committee have thought it best to permit the existing state of things to continue, and not to interfere in a matter which affects native religious feelings, and as to which we are not the best judges. Lastly, there is section 104 of the Act, which it is proposed to leave out of the Bill; it is a section relating to accumulations. It prevents accumulations of income for a longer term than one year. In England, accumulations are permitted for twenty-one years, and I could mention many purposes for which that period is not excessive. I must add that I do not understand on what grounds accumulations were restricted to one year by the Succession Act. Whatever the reason may have been, the Committee have thought it best not to apply this provision to the wills of Hindús, but to leave the matter as it stands.

I have thought it right to make these observations on the Bill, because it is one which has attracted considerable attention amongst the Native community, and because it involves what every one must allow to be a matter of the most essential importance, namely, the charge against Government of having wished to interfere with those Native feelings and institutions which we are bound to respect. I have thought it necessary to refute that charge as strongly and fully as I could, and to show that, on the contrary, the most scrupulous attention has been paid to the opinion of the Natives; that is my excuse for taking up so much of the time of the Council.

With regard to the proposal that the Bill should extend beyond the Presidency Towns, I think that that question can be considered when the Hon'ble Mr. Cockerell brings forward his motion."

The Hon'ble MR. COCKERELL thought that, looking to the important character of the alteration which this Bill had already undergone in Committee, there was certainly some advantage in allowing some further time to elapse ere we proceeded to confirm the measure and render it irrevocable by

passing the Bill in its amended form. For it must be borne in mind that there was this important difference between the Bill as introduced, and as it came up from Committee, that whilst, in the one case, its provisions did not, as so minutely explained by his Hon'ble and learned friend (the mover), overstep in any single matter the limits within which its scope and object had been entirely approved by the many intelligent Native gentlemen who were consulted on the subject, in the other, a certain degree of restraint on the free action of the testator was contemplated, which, in some quarters at least, had been represented to be repugnant to the feelings of the people of this country.

For his own part he entertained no doubt as to the expediency of the addition to the Bill of those sections of the Indian Succession Act which comprised the rule against perpetuities; but after the very forcible justification of the action taken in this matter by the Select Committee, which they had just heard from his Hon'ble and learned friend, he should be unnecessarily taking up the time of the Council if he were to dwell further on this subject. He would merely add that he thought no one who had marked the various decisions of their Courts in Will cases during late years, and more especially the decisions regarding the will of their former colleague, the late Bábu Prasanna Kumár Thákur, could come to any other conclusion than that the time had arrived for the interposition of the legislature for the purpose of placing some restraint on the abuse, by the Hindú testator, of his testamentary powers, and removing the uncertainty which now prevailed as to the extent to which such testator might controul the devolution of his estate: the only point which could be said to have been clearly established hitherto was that the creation of perpetuities was not only supported by no express authority of Hindú law, but was even alien to its principles.

The amendment which he was about to move, however, rested on other grounds. He was strongly of opinion that the proposed local limits of its operation were unnecessarily and even unreasonably restricted. The principle of the Bill was that a Hindú proprietor's legal power of disposing of his property by will being an established fact, it was expedient to secure the effectual exercise of that power by such safeguards as experience had shown to be necessary in countries where the devolution of property was largely influenced by the practice of testation. And the natural corollary to this proposition was that the application of those safeguards should follow the prevalence of the practice. If then it was a fact that the exercise of the testamentary power was confined to persons residing within the Presidency Towns, the Bill, as it stood, would provide all that was desirable in the way of present legislation. But had they any good grounds for the assumption on which the present limitation of the Bill avowedly rested?

It should be remembered that the Courts had established, by a long train of decisions, that the testamentary power of disposition of their property amongst Hindús was co-extensive with their rights of alienation of such property by gift or sale; that this conclusion was now universally accepted, and was, in fact, the basis of the proposed legislation. Such being the case, they would naturally expect to find the prevalence of the practice of testation in proportion to the area of the testamentary power; and, consequently, greater in Lower Bengal—where, under the tenets of the Dáyabhága interpretation of the sástras, the dominion of the Hindú over every description of property vested in him was absolute—than in other parts of India (not excepting the Presidency Towns of Madras and Bombay which were included in the Bill) in which the proprietor's rights were far more limited. This expectation seemed to be justified by such facts as were within their reach. As regarded nuncupative wills, they had the evidence of the Judges of their Courts, and of those Native gentlemen who had been consulted in the matter, that such wills were not unfrequent in Bengal; and, as to written wills, they had the clear evidence of the records of the registration-offices that, in Lower Bengal, the practice of testation was by no means confined to Calcutta. He found from the records of

the registration-offices in Lower Bengal that, in the year 1867-68, about four hundred wills were registered, of which fifty-four only were registered in Calcutta.

In the year 1868-69, out of a total number of five hundred registrations of wills in the Lower Provinces of Bengal, about seventy-nine were effected at the Calcutta office. The registration of wills was not compulsory, and therefore the number of wills registered did not of course represent the number of wills executed; but the statistics which he had just cited might be fairly held to indicate the relative extent to which the testamentary power of disposition of property was exercised by the Hindú owner of property residing within Calcutta and such owner in other parts of Lower Bengal. And the reasonable conclusion was that not only was the practice of testation in Bengal Proper unrestricted to the inhabitants of the Presidency Towns, but that—having regard to the relative numbers of the Mofussil and town population possessing property which could be disposed of by will—the practice of testation was scarcely less common amongst the former than the latter class.

On these grounds, when he had temporary charge of the Bill at the time of its introduction into this Council, he expressed the opinion that the measure was as applicable to Lower Bengal generally as to the Presidency Towns, and again, in Committee, he advocated the extension of the local limits of its operation.

The majority of the Committee, whilst not dissenting from his opinion on this point, considered that the action of the legislature was in a measure fettered by the correspondence which had taken place between the Government of India and the Secretary of State on the subject of the proposed legislation. It was held that, as the Government had expressly drawn attention to the intended narrow limits of the Bill's operation and its consequent experimental character, the sanction of the Secretary of State should be construed as upholding only the application of the provisions of the Bill to its original local area.

He observed that, whereas the only reason assigned in the despatch to the Secretary of State for the proposed confinement of the measure to Presidency Towns was the assumption that in such places only was the testamentary power exercised to any material extent, it was stated in another passage of the same despatch that, *in Bengal* and in the towns of Madras and Bombay, the power of making nuncupative wills was for the last twenty years found to encourage fraud and perjury. The previous assumption was clearly weakened if not absolutely controverted by this last statement. The letter of the Secretary of State in reply to this despatch conveyed a general sanction to the proposals of the Government of India, without any reference to the fact that the proposed legislation was to apply only to the Presidency Towns; and when this was considered in connection with the latest despatch of the Secretary of State on the subject of this Bill, he did not think that the sanction of the Home Government should be held to be conditional on the operation of the Bill being confined to the Presidency Town; for in that last despatch, which was dated 30th November 1869, it was expressly remarked that the "principle of the Act seems applicableto all Natives of India except those Mussulmans who follow the strict law of Muhammad."

That remark was, he thought, undoubtedly correct, and the only consideration by which we should be guided in the determination of the limits within which the provisions of the Bill should be applied was the extent to which the practice of making wills prevailed, and the consequent need of providing securities against its abuse. On these grounds, he begged to move the following amendment on the Motion of his hon'ble and learned friend (Mr. Stephen):—

That this Bill be recommitted with instructions to the Select Committee to take into consideration the propriety of extending its operation to the territories

under the government of the Lieutenant Governor of Bengal and to report again after six weeks.

That the Bill as amended, together with this Motion, be forthwith published in the *Gazette of India* for public information.

The Hon'ble MR. STEPHEN expressed his concurrence in the amendment.

The amendment was put and agreed to.

NORTHERN INDIA CANAL AND DRAINAGE BILL.

Colonel the Hon'ble R. STRACHEY introduced the Bill to regulate the construction and maintenance of Public Works for irrigation, navigation and drainage. He said—"My Lord, the Bill having been published under Your Excellency's order when the Government left Simla, almost three months ago, the Council will have had the means of making themselves fully acquainted with its provisions. It will therefore not be necessary for me to enter at any considerable length into an explanation of its objects.

The Bill is designed to consolidate and amend the law relating to Irrigation Works in the North-West Provinces, the Panjáb, Oudh and the Central Provinces. It deals only with works constructed or maintained by the Government, or with the minor works carried out by private persons in connection with Government works. Its provisions extend to Canals for Navigation as well as to those for Irrigation, and also to Drainage Works, which, as defined in the Bill, include all works having for their object the protection of land from flood or erosion by rivers. It is not the intention that the Bill should apply to town-drainage or sewage, but only to what may be called agricultural drainage.

The existing law on these subjects applicable to the provinces I have just named is contained in two Acts, Act VII of 1845, and Act XII of 1866. The former of these Acts, though originally made applicable only to the North-West Provinces, was, some years ago, extended to the Panjáb under the powers then exercised by the Governor General in Council, and now has the force of law in that province under the provisions of the Indian Councils' Act. In Oudh and the Central Provinces there are still no Government irrigation works, and the necessity for any irrigation law has not yet arisen. The second Act is applicable to the North-West Provinces and Panjáb, but may be extended to any other part of India by order of the Local Government.

Act VII of 1845, which is the essential law on these subjects, is a very short enactment. It professes, in the preamble, to provide for the levy of water-rent, tolls and dues on canals of irrigation and navigation, and for the protection of the canals from injury. It authorizes the Local Government to make rules for the levy of water-rent and supply of water for irrigation, and the payment of tolls, and admission to the benefit of navigation. These rules may be enforced by the temporary deprivation of the benefits of the canal, by fine to the extent of fifty rupees, or imprisonment for fourteen days. The water-rates may be levied as land-revenue, and the tolls for navigation may be realised by the sale of the boat or other floating body. The officers appointed to levy the rates and tolls may be given powers of Deputy Collector and Joint Magistrate to enforce payments and obedience to rules.

Act XII of 1866 exclusively provides for taking land for the construction of private water-courses, it having been doubted whether such land could be taken as for a public purpose. It is a somewhat complicated law, and I am informed has never been put into operation.

It has been generally recognised by all the authorities concerned that the present law, Act VII of 1845, is at present inadequate for the satisfactory administration of the Irrigation and Navigation Canals of Upper India.

That this should be the case is not surprising when consideration is given on the one hand to the circumstances under which that law was framed, and, on the other, to the circumstances of the present time. Still more obvious does it become that reconsideration of the whole subject is necessary when we look forward to the probable future of irrigation works in Upper India.

It is now nearly thirty years ago since my connection with the administration of irrigation works began on the Western Jumna Canal. At that time—I speak of 1840—there was no law whatever relating to irrigation, and among the earliest professional discussions with which I was concerned was the question of providing a law for the purpose. These discussions ended in 1845 by the passing of Act VII. Previously to this period the canal administration had been carried on entirely under rules approved by the Government, the only real coercive power at the disposal of the canal administration having been that of cutting off the water supply of persons who did not comply with the orders of the executive canal officers. The gradual progress from what your Lordship has recently termed discretionary government, to government by law, led in due course to the passing of Act VII of 1845, and the further pressure of the same influence now calls for a reconsideration and large amendment of the first tentative measure, which has carried us on for the last quarter of a century, not without great cause for congratulation at the general results of our canal administration.

To bring more clearly before the Council the relative position of the canal administration of Northern India when this Act came into operation, and that which it now holds, I will briefly state the extent of the transactions conducted by this department as they were in 1840, and as they now are.

In the former year, the whole capital outlay to date was £195,500; the annual income directly realised by the Canal officers was £37,890, and the annual charges for maintenance and management amounted to £22,030. The number of engineers employed was from four to six, and the Canals in operation were the Western Jumna and Eastern Jumna. We had just begun to carry out new Canals on a small scale in the Dehra Doon, and some works of a minor character had also been executed in the vicinity of Delhi. This completes the list of the irrigation works of that period.

In 1869, the statement of our undertakings is as follows: The capital outlay has risen from £195,500 to £4,129,300, the income from £37,890 to £412,600, and the charges from £22,030 to £215,700. The number of engineers employed is not less than 110 to 120. The list of Canals is largely increased, the Ganges Canal and the Bari Doab Canal being the principal new works. The Canals in the Dehra Doon have been much extended. Works have been carried out in Rohilkhund, and a large series of Canals derived from the Sutlej, Chenab and Indus also have to be included. Nor do the figures I have mentioned fully convey the idea of the present importance of the canal administration, for the figures I have just given refer only to the income directly managed by the Canal officers, while a large additional revenue is received under the head of Land Revenue, which is, in fact, dependant on the Canals, and the indirect advantages to the country due to them are difficult to estimate, and cannot be reckoned at all by a money standard.

Looking to the future, we have before us the prospect of an expenditure of not less than sixteen millions sterling, which may even now be anticipated with tolerable accuracy in the North-West Provinces, the Panjáb and Oudh alone. A canal taken from the Jumna below Delhi is estimated at about half a million, and is already well advanced; extensions of the old Ganges Canal, and a second canal for the lower part of the Doáb from the same river, may together cost three millions. The general scheme for this last work has been settled, and the project is now in preparation in detail. A canal on the left bank of the Ganges for Rohilkhund, and another to be derived from the Ramgunga river, and other smaller works in Rohilkhund, will probably exceed one million.

The designs for these works are well advanced, and operations have been partially commenced on them. For Bundelkhund, an outlay of half a million is not unlikely. In all, the North-Western Provinces may readily exhaust five millions. For Oudh and the districts of the North-Western Provinces between the Ganges and Gogra, an outlay, in all, of five millions more may be contemplated for canals to be derived from the Sardah, the projects for which have been generally settled, and preliminary operations set on foot. In the Panjáb, extensions of the Western Jumna Canal are contemplated, likely to cost, say, three-quarters of a million; the Sirhind Canal from the Sutlej has just been begun, which will require two and a quarter millions, of which about one-third will be provided by the state of Patiala, which, in return, will receive a corresponding share of the water; the completion and extension of the Bari Doab Canal is in progress at a probable cost of half a million. Surveys have been made for canals to be taken from the Sutlej below the junction of the Bias River, likely to cost about two and a half millions, to supply, in combination with the old existing works, the whole tract between the Sutlej and Ravi, as far down as Multan on the one side, and on the other bank of the river will be carried through the British territory into the state of Bháwalpur. The aggregate of the sums thus named is six millions. Beyond the Indus important works will be carried out, for which the surveys are not yet sufficiently advanced to admit of any, even the roughest, estimate of outlay to be named. Besides these projects now actually in course of preparation or execution, there remain the magnificent rivers, the Chenab and Jhelam, to which our Engineers may turn their attention when the work actually in hand is sufficiently advanced to give a hope of any practically useful result being derived from the commencement of new schemes, the realization of which must, of course, in a sensible degree, be determined by financial considerations.

Further I need only refer to the Central Provinces as not having been lost sight of, though the difficulties there to be overcome have been found so great as to have prevented any project for irrigation works being yet brought into a shape in which it could be sanctioned. Engineers are still employed in maturing designs, and it may be hoped that the means will eventually be found for meeting the real requirements of the country there also.

But without enlarging more on the prospects of these operations, enough, I am satisfied, has been said to prove that the interests at stake in connection with the construction and management of the irrigation works of Upper India, have already reached a very large developement, and that they must necessarily, day by day, grow, and that, before long, the responsibilities of the Irrigation Department will not be second in importance to those resting on any other branch of the public administration. The time has assuredly come when the law should be placed on a basis which will secure the thoroughly efficient control of the operations of the Irrigation Department, both in relation to the great agricultural community that will be so directly dependent on the satisfactory management of the works, and to the responsibilities that arise from the financial consequences of transactions on so vast a scale as those now in course of realisation or contemplated.

The necessity for a revision of the law relating to irrigation has been felt for many years past, and even as long ago as 1854, the late Colonel Baird Smith was directed by the North-West Provinces Government to frame a new draft. The matter seems to have been lost sight of in the years that followed the mutiny, until it was revived by the Government of the Panjáb in 1867. The present Bill is the consequence of this last movement.

The objects and reasons annexed to the Bill go so fully into its provisions, that it will be hardly necessary for me to explain them at any length. The first object of the Bill has been to place on a satisfactory footing the powers which are now *de facto* more or less commonly exercised under the existing law. It has been the intention to leave such an amount of discretion in the hands of

the Local Government in respect to the class of officers who shall carry out the law, and in respect to the details of management, as experience indicates to be expedient. A great machinery exists, which it would be most unwise summarily to set aside, while it is essential, for future progress, to admit of the introduction of modifications of system which shall be shown to be desirable. The time certainly has not come when any attempt shall be made to stereotype by a rigid code the procedure of the irrigation officers in the details of their duties. The power which it is proposed to continue to the Local Government of making rules for the guidance of the canal officers, will give the necessary means of adapting the system of management to the peculiarities of each locality.

It may be a question to what precise extent the specific provisions of the law should go, and how far a discretion may be properly left to the Government to regulate details. This will be for the special consideration of the Council in each particular case that may arise. In framing the Bill, it has been thought preferable to err on the side of defining proposed powers, rather than on that of leaving a discretion, so that as little doubt as possible shall be left of the intentions of the measure.

The experience of the last few years has shown that, if any effectual measures are to be carried out for improving and extending the means of irrigation generally, it is necessary for the Government to possess a power of re-distributing the water supply of districts where irrigation has been going on without Government control for any length of time. Rohilkhund is a province in which the exercise of such a power has become essential as a preliminary for any improvement. The Bill accordingly provides for dealing with private rights in water in a manner analogous to that in which private rights in land may be dealt with under the existing law, when it is necessary to interfere with them for public purposes. The peculiar character of rights and property in water, of course, calls for a special treatment.

The procedure laid down in the Bill to meet this object is as follows :— The existence of the right is to be first ascertained by the revenue authorities and compensation is to be given for any loss arising from a stoppage or diminution of a water-supply, partly by a revision of the land-revenue, and partly by a cash payment when it is held by the revenue officers that such a payment is proper. The amount to be thus awarded will be settled in the same manner as awards are made when land is taken. These provisions have been generally approved by all the local authorities consulted, but they will, no doubt, receive the careful attention of the Council.

Another part of the measure that is new is that which deals with drainage. Here, again, experience has shown that drainage must go hand in hand with irrigation. If the drainage of irrigated tracts be not carefully attended to, not only serious injury is apt to be done to the land, but the health of the population is often affected in an alarming manner. In dealing with this subject the respective obligations of the proprietors of the land, and of the Government as owner and constructor of the canals, have to be carefully regarded, and provision to be made for giving compensation, on the removal of obstructions to natural drainage-channels cleared for purposes of public utility, to proprietors who suffer loss by being thereby deprived of rights of irrigation or otherwise.

The existing customs, in some places better, and in others less well, defined, under which the Government may require the proprietors and labouring population of estates supplied with water from irrigation works, to assist in the provision of the labour necessary for carrying out urgent operations essential for the safety or efficiency of the works, have been considered, and sections introduced into the Bill for placing requirements of this description on a clearly defined and equitable basis. Powers of a like nature, but more extensive than those contemplated in the Bill, have been given in respect to the Madras Irrigation works by Act I of 1858, and of the absolute necessity of some such

powers in a country dependent on irrigation there can be no room for doubt. It will be for the Council to see that the real requirements of the case are properly met and not exceeded.

The chapter relating to the manner in which charges are to be made for canal-water, is probably the most important of the Bill, and that which offers the greatest difficulties. Under the existing law the power of the Local Government to determine how charges are to be made for irrigation is not limited in any way, and there can be no doubt, I think, that if the form of the present law had been retained, the whole of the proposed sections relating to irrigated land could have been issued as Rules by the Executive Government. But it has been thought better, for the reasons I have already given, to introduce into the substance of the Bill the main principles which the Government desires to have recognised in the administration of irrigation works, and this has accordingly been aimed at. The most prominent features of this part of the Bill are the provisions for charging the proprietor of irrigated land with a water-rate as well as the occupier, and for preventing such a system affecting unfairly the interests of the proprietor in relation to the land-revenue.

The sections which relate to the imposition of a rate on land irrigable from a canal, but not irrigated, contain the substance of the plan thought most suitable for giving that financial security for the payment of the interest on the capital invested in these works, which the Government considers of the greatest importance. The proposal is that if, after a canal has been open for five years, the average nett revenue does not amount to seven per cent. on the capital, a general rate may be charged on all land irrigable from the canal, though it be not actually irrigated, of such an amount as will bring up the whole nett revenue to seven per cent. on the capital. Such a proposal is novel in this country, and therefore at first likely to be viewed with some hesitation. But the Government has thought it to be the most likely method of arriving at a final conclusion which shall be generally satisfactory, to make a definite proposal in the form which, on the whole, seems best suited to meet the requirements of the case, and to endeavour to remove any valid objections that may be taken to the plan, and to adopt any improvements that may be suggested in course of discussion. These parts of the Bill, no doubt, require, and will receive, special attention from the Council ; and so far as such a course may approve itself, simplicity may be secured by leaving to the discretion of the Local Government, to be dealt with under Rules, matters which are specifically dealt with in the Bill as now framed.

Further, I need only direct attention to the preamble of the Bill, with the comment made thereon by Mr. Maine. 'The Bill,' he says, 'lays down a proposition which is believed to be a correct statement, not only of the existing custom of India, but of a fundamental rule universally recognised in Western Europe, and nowhere so distinctly asserted as in those European countries, such as Northern Italy, which resemble India in their dependence on artificial irrigation. This proposition is that the property in the lakes, rivers, and streams of British India is vested in the State, subject, in certain cases, to rights acquired by usage or grant.'

With these remarks, I beg to introduce the Bill."

Major General the Hon'ble SIR HENRY DURAND said that it was not his intention to oppose the introduction of the Bill. His object was to guard himself against its being supposed that, as at present informed, he entirely approved of its principles. One of these was an important one, and with respect to it he wished it to be understood that he reserved to himself the right of rejecting or of accepting it. He adverted to the somewhat arbitrary powers taken by the Bill for the imposition of a water-rate upon irrigable lands, whether water be taken or not, when the revenue return upon irrigation works fell short, within a fixed period, of a certain percentage on the outlay. This was a principle which would demand a careful scrutiny in its application when the Bill had to be considered in Committee, and he suspended his own decision even as to the admission of the principle until he saw how it was applied and

dealt with. For he observed that, under the powers taken, there was no security for the people exposed to the incidence of this water-cess against their being, in fact, made to pay for failures—for projects ill-considered and ill-carried out. At the same time he observed that the Bill was permissive, rather than absolute, on this point. A Lieutenant Governor might levy the water-rate after the prescribed period of short receipts, and the responsibility was thrown upon him of deciding whether or not to impose the cess. The instruction to do so was not positive, but left him a wide discretion. Under these circumstances, he was not disposed to object to the leave asked to introduce the Bill.

He must, however, remark that he should have preferred that the opinions of the Lieutenant Governors upon this point of a water-rate imposable on irrigable land had been before the Council. The Statement of Objects and Reasons informed us "that this proposal had been introduced into the Bill by the Govern-"ment of India since it was submitted to the Local Governments, and that they "have therefore had no opportunity for expressing their opinions on the very "important questions it raised." The foregoing was written on the 21st of last September, and in the interval of four months that the Bill had been before the public, the Local Governments had had the time necessary for the consideration of the provisions of the Bill. He was not aware whether they had communicated their views or not. But as they had had the opportunity of so doing, the fact that the Council was not in possession of their opinions on this principle, which involved such weighty considerations, did not seem to him sufficient to raise an objection to the introduction of the Bill.

He contented himself, therefore, with guarding by these remarks against its being understood that the admission of the Bill pledged him to uphold this principle and the provisions based thereon. He held himself free to accept or reject them uncommitted by the leave to introduce the Bill.

KULLU SUB-DIVISION (PANJAB) BILL.

The Hon'ble MR. STEPHEN introduced the Bill to invest the Assistant Commissioner of the Kullu Sub-division in the Panjáb with certain appellate powers, and moved that it be referred to a Select Committee with instructions to report in a fortnight.

The Motion was put and agreed to.

HIGH COURTS (COSTS OF PETITIONS) BILL.

The Hon'ble MR. CHAPMAN presented the Report of the Select Committee on the Bill to enable the High Courts at the Presidency Towns to deal with costs of petitions for certain monies transferred to Government.

EMIGRATION OF NATIVE LABOURERS BILL.

The Hon'ble MR. CHAPMAN asked leave to withdraw his motion to introduce a Bill to consolidate and amend the law relating to the emigration of Native Labourers.

Leave was granted.

The following Select Committee was named:—

On the Bill to invest the Assistant Commissioner of the Kullu Sub-division in the Panjáb with certain appellate powers—The Hon'ble Mr. Cockerell and the Mover.

The Council adjourned to Friday, the 28th January 1870.

WHITLEY STOKES,

Secy. to ~~the~~ Council of the Governor General for making Laws and Regulations.

CALCUTTA,
The 21st January 1870.

GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

EXTRADITION TREATIES WITH THE STATES OF RAJPOOTANA.

I.

Extradition Treaty between the British Government and His Highness RAEESOODDOWLAH SEPADAROOL MOOLK, *Maharaja Dheeraj*, SREE SEWAEE RANA, BHUGWUNT SINGH LOKENDER BAHADOOR, DULER JUNG JEYDEO, *of Dholepore, his heirs and successors, executed on the one part by Captain* CHARLES KENNETH MACKENZIE WALTER, *in Political charge of the Dholepore State, under authority from Colonel* WILLIAM FREDERICK EDEN, *Agent to the Governor General for the States of Rajpootana, in virtue of the full powers vested in him by His Excellency the Right Hon'ble* SIR JOHN LAIRD MAIR LAWRENCE, *Baronet*, G. C. B., G. C. S. I., *Viceroy and Governor General of India, and on the other part by* PIRBHOO LALL, *Nazim Adawlut and a Member of the Dholepore Council, in virtue of the full powers conferred on him by the Maharana aforesaid.*

ARTICLE I.

That any person, whether a British or foreign subject, committing a heinous offence in British territory and seeking shelter within the limits of the Dholepore State, shall be apprehended and delivered up by the latter Government to the former, on requisition, in the usual manner.

ARTICLE II.

That any person, being a subject of Dholepore, committing a heinous offence within the limits of the Dholepore State and seeking asylum in British territory, will be apprehended and delivered up by the latter Government to the former, on requisition, in the usual manner.

ARTICLE III.

That any person, other than a Dholepore subject, committing a heinous offence within the limits of the Dholepore State and seeking asylum in British territory, will be apprehended, and the case investigated by such Court as the British Government may direct. As a general rule, such cases will be tried by the Court of the Political Officer, in whom the political supervision of Dholepore may at the time be vested.

ARTICLE IV.

That in no case shall either Government be bound to surrender any person accused of a heinous offence except upon requisition duly made by, or by the authority of, the Government within whose territories the offence shall be charged to have been committed, and also upon such evidence of criminality as, according to the laws of the country in which the person accused shall be found, would justify his apprehension and sustain the charge if the offence had been there committed.

ARTICLE V.

That the following offences be deemed as coming within the category of heinous offences:—

1. Murder.
2. Attempt to murder.
3. Culpable homicide under aggravating circumstances.
4. Thuggee.
5. Poisoning.
6. Rape.
7. Causing grievous hurt.
8. Child-stealing.
9. Selling females.
10. Dacoity.
11. Robbery.
12. Burglary.
13. Cattle Theft.
14. Arson.
15. Forgery.
16. Counterfeiting coin or uttering base coin.
17. Criminal breach of trust.
18. Criminal misappropriation of property.
19. Abetting the above offences.

ARTICLE VI.

The expenses of any apprehension, detention, or surrender made in virtue of the foregoing stipulations shall be borne and defrayed by the Government making the requisition.

ARTICLE VII.

The above Treaty shall continue in force until either of the high contracting parties shall give notice to the other of its wish to terminate it.

ARTICLE VIII.

Nothing herein contained shall be deemed to affect any Treaty now existing between the high contracting parties except so far as any Treaty may be repugnant thereto.

Signed, sealed, and exchanged at Bhurtpore this fourteenth day of January A. D. eighteen hundred and sixty-eight, corresponding to the fifth day of Magh Buddee Sumbut nineteen hundred and twenty-four.

(Sd.) C. K. M. WALTER,
In Political Charge of Dholepore.

Seal. Signature of PIRBHOO LALL, Nazim Adawlut and a Member of the Dholepore Council.

(Sd.) MAYO.

This Treaty was ratified by His Excellency the Viceroy and Governor General of India at Calcutta on the fifteenth day of February 1869.

(Sd.) W. S. SETON-KARR,
Secy. to the Govt. of India, Foreign Department.

II.

Extradition Treaty between the British Government and His Highness TUKHT SINGH, *Maharaja of Joudhpore,* G. C. S. I., *his heirs and successors, executed on the one part by Captain* EUGENE CLUTTERBUCK IMPEY, *Political Agent in Marwar and Political Superintendent, Mullani, under authority from Lieutenant-Colonel* RICHARD HARTE KEATINGE, C. S. I. *and* V. C., *Agent to the Governor General for the States of Rajpootana, in virtue of the full powers vested in him by His Excellency the Right Hon'ble* SIR JOHN LAIRD MAIR LAWRENCE, *Baronet,* G. C. B. *and* G. C. S. I., *Viceroy and Governor General of India, and on the other part by* JOSEE SHEORAJ, *Moosahib of Joudhpore, in virtue of the full powers conferred on him by Maharaja* TUKHT SINGH *aforesaid.*

ARTICLE I.

That any person, whether a British or foreign subject, committing a heinous offence in British territory and seeking shelter within the limits of the Marwar State, shall be apprehended and delivered up by the latter Government to the former, on requisition, in the usual manner.

ARTICLE II.

That any person, being a subject of Marwar, committing a heinous offence within the limits of the Marwar State and seeking asylum in British territory, will be apprehended and delivered up by the latter Government to the former, on requisition, in the usual manner.

ARTICLE III.

That any person, other than a Marwar subject, committing a heinous offence within the limits of the Marwar State and seeking asylum in British territory, will be apprehended, and the case investigated by such Court as the

British Government may direct. As a general rule, such cases will be tried by the Court of the Political Agent, in whom the political supervision of Marwar may at the time be vested.

ARTICLE IV.

That in no case shall either Government be bound to surrender any person accused of a heinous offence, except upon requisition duly made by, or by the authority of, the Government within whose territories the offence shall be charged to have been committed, and also upon such evidence of criminality as, according to the laws of the country in which the person accused shall be found, would justify his apprehension and sustain the charge if the offence had been there committed.

ARTICLE V.

That the following offences be deemed as coming within the category of heinous offences:—

1. Murder.
2. Attempt to murder.
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5. Poisoning.
6. Rape.
7. Causing grievous hurt.
8. Child-stealing.
9. Selling females.
10. Dacoity.
11. Robbery.
12. Burglary.
13. Cattle Theft.
14. Arson.
15. Forgery.
16. Counterfeiting coin or uttering base coin.
17. Criminal breach of trust.
18. Criminal misappropriation of property.
19. Abetting the above offences.

ARTICLE VI.

The expenses of any apprehension, detention, or surrender made in virtue of the foregoing stipulations shall be borne and defrayed by the Government making the requisition.

ARTICLE VII.

The above Treaty shall continue in force until either of the high contracting parties shall give notice to the other of its wish to terminate it.

ARTICLE VIII.

Nothing herein contained shall be deemed to affect any Treaty now existing between the high contracting parties except so far as any treaty may be repugnant thereto.

Done at Mount Aboo, Rajpootana, this sixth day of August in the year one thousand eight hundred and sixty-eight.

(Sd.) E. C. IMPEY,
Political Agent.

Signature of Josee Sheoraj, Moosahib of the Maharaja of Joudhpore, G. C. S. I.

(Sd.) JOHN LAWRENCE,
Viceroy and Governor General of India.

This Treaty was ratified by His Excellency the Viceroy and Governor General of India at Simla on the 26th day of August 1868.

(Sd.) W. S. SETON-KARR,
Secy. to the Government of India, Foreign Department.

III.

Extradition Treaty between the British Government and His Highness RAM SINGH, BAHADOOR, *Maharao Rajah of Boondee, his heirs and successors, executed on the one part by Captain* ARTHUR NEIL BRUCE, *Political Agent, Harowtee, under authority from Colonel* WILLIAM FREDERICK EDEN, *Governor General's Agent for the States of Rajpootana, in virtue of the full powers vested in him by His Excellency the Right Hon'ble Sir* JOHN LAIRD MAIR LAWRENCE, *Baronet,* G. C. B. *and* G. C. S. I., *Viceroy and Governor General of India, and on the other part by* BOHORA IMRUT LALL, *in virtue of the full powers conferred on him by Maharao Rajah* RAM SINGH, BAHADOOR, *aforesaid.*

ARTICLE I.

That any person, whether a British or foreign subject, committing a heinous offence in British territory and seeking shelter within the limits of the Boondee State, shall be apprehended and delivered up by the latter Government to the former, on requisition, in the usual manner.

ARTICLE II.

That any person, being a subject of Boondee, committing a heinous offence within the limits of the Boondee State and seeking asylum in British territory, will be apprehended and delivered up by the latter Government to the former, on requisition, in the usual manner.

ARTICLE III.

That any person, other than a Boondee subject, committing a heinous offence within the limits of the Boondee State and seeking asylum in British territory, will be apprehended, and the case investigated by such Court as the British Government may direct.

As a general rule, such cases will be tried by the Court of the Political Officer, in whom the political supervision of Boondee may at the time be invested.

ARTICLE IV.

That in no case shall either Government be bound to surrender any person accused of a heinous offence, except on requisition duly made by, or by the authority of, the Government within whose territories the offence shall be charged to have been committed, and also upon such evidence of criminality as, according to the laws of the country in which the person accused shall be found, would justify his apprehension and sustain the charge if the offence had been there committed.

ARTICLE V.

That the following offences be deemed as coming within the category of heinous offences:

1. Murder.
2. Attempt to murder.
3. Culpable homicide under aggravating circumstances.
4. Thuggee.
5. Poisoning.
6. Rape.
7. Causing grievous hurt.
8. Child-stealing.
9. Selling females.
10. Dacoity.
11. Robbery.
12. Burglary.
13. Cattle Theft.
14. Arson.
15. Forgery.
16. Counterfeiting coin or uttering base coin.
17. Criminal breach of trust.
18. Criminal misappropriation of property.
19. Abetting the above offences.

ARTICLE VI.

The expenses of any apprehension, detention, or surrender made in virtue of the foregoing stipulations shall be borne and defrayed by the Government making the requisition.

ARTICLE VII.

The above Treaty shall continue in force until either of the high contracting parties shall give notice to the other of its wish to terminate it.

ARTICLE VIII.

Nothing herein contained shall be deemed to affect any Treaty now existing between the high contracting parties except so far as any Treaty may be repugnant thereto.

Done at Boondee this first day of February 1869.

Seal.

(Sd.) A. N. BRUCE,
Political Agent.

Seal.

Signature of Bohora Imrut Lall.

(Sd.) MAYO.

This Treaty was ratified by His Excellency the Viceroy and Governor General of India at Simla on the sixth day of August 1869.

(Sd.) W. S. SETON-KARR,
Secy. to the Govt. of India, Foreign Department.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 6 of 1870.

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, FEBRUARY 5, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

Non-Subscribers to the GAZETTE *may receive the* SUPPLEMENT *separately on a payment of six Rupees per annum if delivered in Calcutta, or nine Rupees four annas if sent by Post.*

No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 28th January 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding*.
His Excellency the Commander-in-Chief, K. C. B., G. C. S. I.
The Hon'ble G. Noble Taylor.
Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble Gordon S. Forbes.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey, C. S. I.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
His Highness Sarámade Rájáháe Hindústán Ráj Rájendra Srí Mahárájá Dhiráj Sivái Rám Singh Bahádur, of Jaypúr, G. C. S. I.
The Hon'ble F. R. Cockerell.

OUDH TALUQDÁRS ESTATES BILL.

The Hon'ble MR. STRACHEY, in moving for leave to introduce a Bill to relieve from incumbrances the estates of taluqdárs in Oudh, said that the

Council was well aware of the peculiar conditions under which the taluqdárs of Oudh held their landed estates. Those conditions had their origin in the arrangements made by Lord Canning in 1858 and 1859, and it would be in the recollection of the Council that those arrangements received finally the sanction of the legislature about a year ago, by the passing of Act I of 1869. In the debate when the Bill was passed, which took place, MR. STRACHEY believed, on the very last occasion on which Lord Lawrence was present as Viceroy in Council, he made a statement which had led to the preparation of the measure which it was now proposed to introduce. Lord Lawrence then said that he trusted that the policy which was about to receive the sanction of the Council that day would be so worked by the taluqdárs and their descendants, that the British Government would never have cause to regret the policy that had been adopted. He said—

"It is in the hands of the taluqdárs themselves to make their privileges a blessing or a misfortune to their relatives, to the subordinate proprietors, and to the cultivators of the soil, and I trust that they and their descendants will so discharge the duties which are bound up with their rights, that the British Government will be satisfied that the policy which is now being declared is sound."

Lord Lawrence then went on to say that it had come to his knowledge that many of the taluqdárs of Oudh were in great pecuniary difficulties, and he said that it was hard that any man placed in the position of a taluqdár should be just and generous to his dependants when he had difficulties of this kind in his own home. He then said that, not many years ago, an Act had been passed in the Presidency of Bombay with the object of relieving the taluqdárs of Guzerat who, MR. STRACHEY believed, formed the aristocracy of that part of the country, and of assisting them to get rid of the heavy incumbrances on their estates. The Act enabled the Government to make advances of money to taluqdárs on the security of their estates. The Bombay Act VI of 1862 appeared to have been worked with the most complete success. In the course of the six years following the passing of the Act, 469 estates came under its operation, and nearly half of those estates had been restored to the taluqdárs in a completely solvent condition and free from all incumbrances. Lord Lawrence proposed to treat the taluqdárs of Oudh in a similar manner, and he stated that it was his intention to direct the Chief Commissioner of Oudh to make enquiries into the actual condition of the taluqdárs, and that he thought it would be right that the Government should then take measures for relieving those taluqdárs who apparently deserved it. He wound up his remarks as follows:—

"I think that, under good management, all those taluqdárs who are really desirous of retrieving their position can do so if they pursue the course it behoves them to follow, and thus prevent their descendants from arbitrarily selling their estates to meet their necessities. If they fail, they will have no one to blame but themselves, and their descendants will be deprived of all means of maintaining their position. The measure I propose appears to me to be justified by sound policy; and I trust that it will also have the effect of showing the taluqdárs of Oudh that the British Government really desires that they should be maintained in prosperity in their present position."

Immediately after that speech of Lord Lawrence, the Chief Commissioner of Oudh was ordered by the Government of India to institute enquiries on the subject. He was informed that it had been brought to the notice of the Governor General in Council that various causes had led to many estates of taluqdárs being greatly incumbered with debts, whilst the legal facilities for the recovery of debts by creditors, and the high interest on loans must tend to the gradual transfer of those estates to bankers and merchants. The Governor General thought that loans might properly be made from the treasury, with a view to "re-establishing the solvency of these estates, in cases in which the assistance of the Government appeared to be deserved, the taluqdár surrendering the management of the estate to an officer appointed by the Government, as security for the re-payment of the loan."

The result of those orders was, that a minute enquiry into the whole matter was instituted under the orders of the Chief Commissioner of Oudh. He found that there were about fifty of the principal taluqdárs of the province, paying an annual revenue of about £135,000, whose debts amounted to about £327,000. The Chief Commissioner sent up the draft of a Bill, taken almost entirely, with slight modifications, from the Bombay Act of which MR. STRACHEY had been speaking; and that was the Bill, with some further modifications, which he now asked leave to introduce. The Bill provided that, on the application of any taluqdár for assistance of this kind, the Chief Commissioner, if on due enquiry he came to the conclusion that the case was one in which interference of this kind was right, might make a declaration vesting the management of the estates of the taluqdár in an officer appointed by the Chief Commissioner. The effect of that declaration would be that the estate would be made over, for a period not exceeding twenty years, to the management of the officer appointed by the Government. While under the management of this officer, the estates and the income derived from them would cease to be liable to attachment or sale by the courts on account of any debts of the taluqdár, and the power of the taluqdár to alienate or incumber his estates in any way would be in abeyance. The taluqdár would receive such allowance for his maintenance and the maintenance of his family as might be considered appropriate. The amount of the debts of the taluqdár would be ascertained, and the officer appointed to manage the estate would adopt systematic measures for paying off the whole of them. It would rest entirely with the Government to say, in each particular case, whether it would advance money from the treasury or not. It was not proposed to say anything in the Bill about this, but to leave the Government absolutely free to act as it pleased. The present intention was, that no such advances should be made unless the Government was quite satisfied that the whole of the advances could, without any doubt, be repaid, with interest at six per cent. per annum, within ten years. MR. STRACHEY was unable to say what sum of money might probably be actually advanced by Government to the taluqdárs if the present measure should become law; but according to the estimate made by the local authorities, supposing that the whole of the estates to which he had referred were to be taken under the management of Government officers, the whole sum to be advanced would be about £[illegible]6,000. But even if the total advances should amount to so much as this, which was not very likely, the whole sum would be little more than one year's income of the estates. Now, as the management of no estate would be undertaken without the Chief Commissioner having satisfied himself that it would be relieved completely in a few years from all embarrassment, the security would be quite complete, and therefore, financially speaking, the Government would run no risk whatever. The taluqdárs themselves were extremely anxious that this measure should be passed. The Financial Commissioner, Colonel Barrow, who was the best possible authority on the subject, said that his belief was that this anxiety on their part was quite real, and that the wish of embarrassed taluqdárs to place their estates under Government management was "to be accounted for by the good opinion they have of Government management as exercised in estates under the Court of Wards in Oudh, and by the fact that our management generally frees them from the incubus of a host of hangers-on, whom they have not themselves the moral courage to get rid of."

MR. STRACHEY hoped that there would be no misunderstanding regarding the measure which he proposed to introduce. It was a measure with which it would not be difficult to find fault on economical grounds; and there would be many people who would say that if these estates had been mismanaged by the taluqdárs and thus became encumbered with debts, the sooner they passed into the hands of solvent proprietors, the better. Not only in Oudh, but in other parts of Northern India with which he had been personally acquainted, he had never believed that that principle was a right one to apply. He had always believed, and he thought the experience of 1857 had shown it to be the

case, that this was a matter in which we could not afford to ignore the feeling of the people of the country. It shocked every feeling of propriety and justice in the Natives of Northern India, that we should allow estates which had been held in the same family for generations to pass into the hands of strangers—generally of the money-lending class—in satisfaction of decrees of civil courts for debt. He thought there could be no doubt that the experience of 1857 showed conclusively the mischief thus done. The transfer, under the operations of our courts, of many ancient estates into the hands of strangers was found, in 1857, to be a great cause of political weakness, by depriving the Government of the support of the Chiefs whom the people themselves looked on as their leaders; and it also became a cause of internal commotions and bloodshed among the people themselves. He did not intend to defend this measure on economical grounds, but even on those grounds much might be said in its favour; for he believed that, if it was certain that a thing was politically inexpedient and wrong in any country, it was impossible that that thing could in that country be at the same time economically right, whatever it might be in some other country under different conditions. But however that might be, this was to be looked on as a purely political measure. It was brought forward with the object of strengthening the policy originally adopted by Lord Canning's Government in Oudh, and which was sanctioned by the legislature by Act I of 1869 a year ago. The merits of that policy were now not a question for discussion. The Government believed it to be its duty, and it was the determination of the Government, to carry out that policy fully and honestly, and to give to the great experiment now being tried in Oudh every fair chance of success which could reasonably be given to it. The Bill which MR. STRACHEY now asked leave to introduce would be a pledge of that determination, and would be at the same time a fulfilment of the promise made by Lord Lawrence a year ago.

The Motion was put and agreed to.

EMIGRANTS' REGISTRATION FEE BILL.

The Hon'ble MR. CHAPMAN, in moving for leave to introduce a Bill to enable the Governor General in Council to increase the fees payable under section 31 of Act No. XIII of 1864 (*to consolidate and amend the law relating to the Emigration of Native Labourers*), said that, under the existing law, the fee for registering an emigrant was, except in the case of the Presidency Towns, limited to one rupee. But the total cost incurred for controlling emigration in India exceeded the revenue derived from fees, and it was not deemed expedient that the Government should bear that loss. The object of the present Bill, therefore, was to empower the Government to increase the fee for the registry of an emigrant to any amount not exceeding double the present amount.

The Motion was put and agreed to.

KULLU SUB-DIVISION (PANJAB) BILL.

The Hon'ble MR. STEPHEN presented the Report of the Select Committee on the Bill for investing the Assistant Commissioner in charge of the Kullu Sub-division of the Kángra District with certain appellate powers.

The Council adjourned to Friday, the 4th February 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

CALCUTTA,
The 28th January 1870.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

REPORT ON THE FLOODS IN LOWER BENGAL IN 1868.

Report by COLONEL F. H. RUNDALL, R. E., *Chief Engineer, Bengal, Irrigation Branch, on the floods in Lower Bengal in* 1868, *dated* 11*th December* 1869.

The year 1868 was marked by disastrous inundations over a large extent of Lower Bengal, comprising the Districts of Cuttack, Burdwan, and the Presidency.

These inundations were produced by the unusually heavy rains in the commencement of the south-west monsoon, which, falling over the entire tract of country lying between the hills and the Bay of Bengal, from Poorce in the extreme south to Jessore in the north, which apparently formed the two limits of the belt of rain, brought down most of the rivers which intersect it in more sudden and violent floods than had ever been known to occur within the memory of living men.

The floods appear to have reached their greatest height everywhere between the 16th and 17th June.

2. The rain-fall in the month of June 1868, as measured at the following stations, is shown opposite to each. The quantity which fell in the first half of that month is also given, from which it will be seen that excessive as the total fall during the month was in several of these stations, more than $\frac{3}{4}$ths of the whole quantity fell between the 1st and 14th; while in 5 out of 8 of them the proportion was much greater. At Contai, in the Hidgelee District, for instance, the whole, with the exception of 2 inches only, fell in the first fortnight. The *normal* rain-fall in June is about 12 inches in Contai.

		1st to 7th.	8th to 14th.	Total.	15th to 30th.	Total per month.
1.	Poorce	5·50	1·90	7·10	3·60	11·00
2.	Cuttack	4·65	8·50	13·15	3·98	17·13
3.	Aquapudda	5·63	9·10	14·73	4·68	19·41
4.	Balasore	11·10	18·70	29·80	6·40	36·20
5.	Midnapoor	3·0	15·90	18·90	3·90	22·80
6.	Contai	6·35	26·48	32·83	2·01	34·84
7.	Calcutta	5·91	15·29	21·20	5·41	26·61
8.	Jessore	2·99	5·97	8·96	7·66	16·62
				146·97		181·61
			Average ...	18·36		23·08

3. The floods which did most harm in 1868 were those of the Byturnee, Brahminee, Soobunreekha, Kaleeaghye, Cossye, Selye, and Dalkissur, the name given to the upper portion of the Roopnarain, and of these the Soobunreekha and Kaleeaghye proved by all accounts the most destructive in their effects on the country. These effects, as gathered from the various reports of the Superintending and Executive Engineers, written immediately after their occurrence, will now be briefly stated.

4. Commencing with the Poorce District in the south, the Superintending Engineer reported that although the flood in the Katjooree and its branches, the Bargovee, Dyah, and Koosbuddra, was not as high as it had been known to

be on previous occasions, still it was 2 feet higher than the "safety mark" on the Cuttack gauge.

Only 9 breaches, aggregating half a mile in length, occurred in the embankments of the Bargovee, which proved that these protective works had been better made and looked after than they were wont to be formerly, when floods of no greater height than the one under notice used to do immense injury to them.

5. The flood in the Mahanuddy Proper was also a moderately high one, and did no damage whatever to the embankments for a considerable distance below Cuttack, or as far as the Civil Station of Juggutsingpoor. Below that, about 25 breaches, aggregating less than half of a mile, occurred. This flood was, if anything, higher than the great flood of 1866 at Juggutsingpoor, owing to the embankments above having stood so well, and it is satisfactory to find that protection was afforded to so large a tract of country which formerly suffered.

6. The flood in the Brahminee and in its branch the Kursooah, was on this occasion higher by 12 inches than the greatest flood on record (that of 1862), but notwithstanding this, the injury done in the upper portions of the embankments was very trifling. From the junction of the Kemereah with the Beropa downwards, however, considerable injury was done, not only to the embankments, but also to the country, chiefly at Ooteekan and Aul, where from a fourth to a half of the standing rice crop was destroyed by the inundation.

7. The embankments which suffered most were in the zemindary estates, which not having yet been taken over by the Government had not been properly repaired. An Assistant Engineer of the late East India Canal Company, who explored the country inundated by the flood of the Brahminee soon after its occurrence, reported that the water rose to a height varying from 5 to 10 feet over the banks, and swept away several villages, large trees, cattle, and much of the standing crop. The people were obliged to take refuge on the tops of houses, on trees and on any high ground they could find. No loss of lives was reported.

8. The Byturnee also rose very much higher than it had ever been known to do. At Aquapudda on the Calcutta road the water stood 11 inches higher than in the highest flood (1866), and although the embankments had been well repaired and raised 2 feet higher than the 1866 flood level, still that of June 1868 proved too much for them, and 168 breaches, aggregating 3·6 miles in length, occurred. The sea dyke at Ankoorah also was heavily breached by the inland floods in the Byturnee. Mr. Sub-Engineer O'Neil, then in the employ of the late East India Canal Company, and who inspected the locality which had suffered from the inundation immediately afterwards, reported that the water had swept over the country with an average depth of 6 feet, and destroyed fully two-thirds of the standing rice crop, and laid in ruins some 60 villages on both banks of the Byturnee and on the Roboo Nullah. Numbers of people took refuge on the Calcutta road, and on the tops of houses, trees, &c.

9. But far more disastrous than the Brahminee and Byturnee floods was that in the Soobunreekha, which came down so rapidly and suddenly, that it is stated to have been comparable to nothing short of a "storm-wave," so stupifying the people that the Executive Engineer of the Hidgellee Division through which it rushed had the greatest difficulty in getting them to assist in cutting the bunds which exist on the tidal rivers in the division, and towards which the "spill-water" of the Soobunreekha found its away, in order to relieve the country of the inundation.

Within the limits of the Orissa Circle, or in the Busta Sub-Division alone, 132 breaches, nearly 6·5 miles in extent, occurred in the embankments. This flood was said to be 3 *feet higher than the highest ever known.*

10. In the Hidgellee District, the floods of the Soobunreekha and Kaleeaghye caused a great deal of mischief. Not only were these floods in themselves far beyond any thing of the kind previously known, but the extremely heavy local rain-fall already noticed, and the strong south-westerly winds which blew at the same time and kept up the low water level at the mouths of the several rivers and creeks, all greatly aggravated the evils of the inundation.

For more than three days the whole of the Contai Sub-Division was covered with water to a depth of from 3 to 8 feet, cutting off all communication with the surrounding districts.

Scarcely a village in the Hidgellee District escaped the flood, which, breaching in innumerable places the embankments which surround the district on three sides, poured over the country, which is in itself naturally low.

Numbers of people took refuge on the "sand-hills" which run along the coast for some distance; others resorted for shelter to the public works bungalows, and others to the tops of houses, trees, &c.

From the Police returns, it appeared that 27,600 houses were utterly demolished. This, allowing only four individuals to one house, represents more than 110,000 people rendered houseless; upwards of 660 head of cattle were drowned; from 25 to 50 per cent. of the stores of grain were washed away, and the entire year's harvest in many parts of the district entirely lost. Providentially not more than 5 or 6 human lives were lost by drowning, or by the falling of the houses.

11. The floods in the rivers Cossye, Selye, and Dalkissur were all extremely high in June 1868, and did considerable damage to the embankments and to the country generally through which they run. A good deal of injury was done in Ghattal, where a large portion of the bazaar was washed away, and another large portion left a heap of ruins. So high was the flood on this occasion that it topped the compound wall of a gentleman's house, which was much above the reach of any previous flood. The school-house also was swept away, and but for the large number of breaches in the embankments which helped to lower the level of the water, the entire place would probably have been destroyed. In the Shampoor circuit the water was 8 feet deep over the fields, and houses, cattle, and crops were swept away, besides a large portion of the Koila road.

In the Midnapoor Zemindary Sub-Division, great injury was done by the floods, which covered the country for days; the people, with their cattle, fled for shelter to the highest parts of the embankments, and no lives were lost.

In the Tumlook Division, the Dalkissur rose on an average 3 feet over the highest land, and swept over a tract of country extending 3 miles on each side; and some 38 villages, all within a radius of 7 miles round Jehanabad, were greatly injured, one-third of the houses in them being demolished.

In the Burdwan Division, the Damoodah was only slightly in flood, showing that the rain had not extended as far as its "catchment-basin."

12. In the Presidency Division, the floods of June 1868 were not so severe, and nothing important was reported from it.

13. In most of the rivers above mentioned, the June flood was followed by tolerably high floods in the middle of August, and again in the middle of September; but as these were not quite so high as the June floods, they passed off without doing much additional damage.

14. In one respect, and only one, were the inundations above described of any benefit to the country over which they poured with such disastrous effect. A layer of "silt" was deposited by them on the land, which was thus greatly improved for agricultural purposes. This was the only compensating advantage which the ryots had for all their other heavy losses, but the silt without water which the ryots had for all their other heavy losses, but the silt without water was of little use, for scarcely six weeks after the heavy flood in the Byturnee, the resident Sub-Engineer of the late East India Canal Company wrote that "unless more rain fell immediately, the rice crops would certainly perish from drought."

GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

ARRANGEMENTS MADE BY THE GOVERNMENT OF THE NIZAM FOR THE BETTER GOVERNMENT OF HIS HIGHNESS' TERRITORIES.

Translation of the Gazette of the Government of Nizam-ul-Moolk ASIFF JAH, *Monday, 26th Rajab,* 1286 *Hijree* (*1st November* 1869).

APPENDIX A.

NOTIFICATION.

Whereas it is considered expedient to give every facility to the efficient administration of the affairs of this Government, it has been determined to issue a Government Gazette, and to notify therein, from time to time, all orders emanating from the various Departments under the control of the Minister of State (Madar-ul-Mihamm, or Dewan), and of the Ministers of Departments (Sadr-ul-Mihamm), relating to the dismissals, appointments, changes, transfers, promotions, leave of absence, &c., of the Officers of this Government. By this measure, as already stated, not only will public business be expedited, but it will be made generally known what rules and measures have been, or shall be from time to time adopted for the benefit of the people, and for the government and prosperity of the country; while at the same time the Gazette will serve as the best instrument to ensure the due enforcement of the orders of Government.

2. The Government Gazette will be supplied to all the principal Departments of the State free of cost and postage, and the Officers of such Departments shall keep their copies among the records of Government, and have them bound and secured in quarterly files.

3. Every Officer to whom the orders of the Minister of State, or of the Departmental Ministers, published in the Government Gazette relate, shall be guided thereby, in the same manner as if the orders were issued to them directly and individually, as no separate directions will be issued on the same subject, with the reservation, however, of important and special orders which involved detailed instructions. On weighty subjects, separate orders will be issued.

4. When any orders of the Dewan, or of the Ministers of Departments are inserted in the Government Gazette, it will be incumbent upon every Officer to whom such order relates to give effect to it at once, even if, in the opinion of such Officer, it may appear necessary to solicit any further instructions, or to obtain special orders thereon. In the latter case, after carrying out, in the first instance, the orders received through the Gazette, it will be for the Officer concerned, with a view to clear his doubts, to address the Department from which the orders emanated, and obtain further instructions. Although, as far as possible, such orders as may involve public danger, will never be issued, still, should it happen that, pending receipt of reply to a reference, the carrying out of the orders received through the Gazette would be apt to cause mischief, or disturbance, or any evils entailing loss or injury, then the execution of such orders may be deferred upon the personal responsibility of the Officer concerned, and until further instructions be received, provided there are reasonable grounds for so doing; otherwise the Officer concerned will be liable to be brought to a strict account for it.

5. In the event of an order of the Dewan, or of the Departmental Ministers injuriously affecting any party or persons, the proper authority will most gladly take into due consideration the representations of such party or persons, provided their representations be not disrespectful or frivolous, and that they contain a clear statement of the injury sustained.

GOVERNMENT OFFICE—ORDER OF THE MINISTER.

Dated 21st Rajab, 1286 *Hijree (27th October* 1869).

In conformity with the Proclamation, dated the 6th Rajab, 1286 Hijree (12th October 1869), all the four Ministers of Departments therein named having been appointed to the offices detailed below, have entered upon their respective duties, *viz.*:—

Basheer-ud-Dowlah Bahadur to supervise the Courts of Justice, &c.

Mukarram-ud-Dowlah to superintend Revenue matters, &c.

Shamsheer Jung Bahadur to control the Police Department.

Meer Yawar Alee, son of the late Sazawar Jung, to superintend the Public Works and other Miscellaneous Departments.

Rules for the Conduct of Business connected with the Department of the Chief Minister of Justice (SADR-UL-MIHAMM-I-ADALAT) *in His Highness the Nizam's State.*

For the supervision and improved regulation of the conduct of business in all the Courts of Justice within the territories of this Government, for ensuring the prompt and vigorous administration of justice and equity, and for causing the enforcement, with sufficient strictness and care, of the rules and regulations approved and enacted by this Government, it has been deemed expedient to create the office of a Chief Minister of Justice, in order that he may devote his special attention to these important objects, and watch the working of the several Courts. Such a functionary has accordingly been appointed, and the under-mentioned Courts, &c., are placed under his control:—

1*st.*—All Adalats within the city.

2*nd.*—All Adalats within the (Sarf-i-khass) estates.

3*rd.*—All Adalats in the districts directly under the Dewan.

4*th.*—All jails pertaining to the above Courts over which a General Superintendent of Jails will be appointed.

5*th.*—Department of Judicial Stamps.

6*th.*—The temporary Committee for considering, consolidating, and amending the rules for Courts of Justice.

Inasmuch as the due and efficient discharge of the duties pertaining to this high official is a most desirable and important object, involving the improvement and well-being of the people, as well as the reputation of this State, the Government entertains the full belief that he will, by devoting his full attention, and bringing his entire energy and intelligence to bear upon the duties entrusted to him, conduct them in such a manner as fully to realize the objects above indicated, and the following paragraphs are prescribed by way of rules for his practical guidance:—

1. For the purpose of carrying on the business connected with his office, he shall have a seal engraved with the words—"Seal of the Office of the Sadr-ul-Mihamm of Adalats of the Government of Nizam-ul-Moolk Asiff Jah."

2. For the efficient performance of work, a 1st and 2nd Secretary or Assistant (Motamid) have been attached to the Office of the Chief Minister of Justice, and the former shall hold correspondence with the officials subordinate to that functionary and other Officers, &c., under his own signature.

3. The Secretary of the Chief Minister of Justice shall every day submit to that functionary the official correspondence, &c., and obtain his orders thereon. And notwithstanding that all despatches will be signed by the Secretary, every letter should commence with the words—"Under the orders of the Sadr-ul-Mihamm of Adalats, it is written, &c."

4. Inasmuch as the Chief Minister of Justice is responsible for the work of his Department, he shall not allow any fair letter to issue from his office until he shall have approved and initialed the draft thereof; and on important subjects, the orders passed by him should be written by himself, or caused to be written by his Secretary in his presence, and in either case, the order shall be signed by the Chief Minister of Justice. In ordinary matters, such as calling for the papers of any case, or enjoining the carrying out of any order previously issued, the Secretary may issue orders without the signature of his Chief being obtained on the drafts thereof.

5. Inasmuch as the mode of correspondence in the form and fashion of Proceedings (Roobakarees) is both convenient and obviates controversial writing in a greater degree compared with other modes, therefore it is essential that all the correspondence of the office under notice should be conducted in such mode.

6. Orders will be issued to all the Officers of Government, whether belonging to the Department of Justice or to other Departments, that in all matters connected with the Chief Minister of Justice, the necessary references to that functionary should be addressed to his Secretary, and that the same shall commence with the words—"For the information of," or "for such orders as may be deemed fit by, the Chief Minister of Justice."

7. In the case of Departments to which Secretaries are attached, the Secretary of the Chief Minister of Justice will correspond with, and receive replies from, such Secretaries. Where there are no Secretaries, such as in the offices of Talukdars, &c., the correspondence will be addressed to those functionaries direct.

8. For carrying on the work of the office of the Chief Minister of Justice, an adequate establishment has been fixed.

9. The Chief Minister of Justice will direct that, excepting on Fridays, his office will daily open not later than 10 A. M. and close at 5 P. M., provided the work of the day shall have been completed, otherwise it should remain open a few hours later.

10. Inasmuch as in the exercise of the duties appertaining to this functionary, it will be occasionally necessary to issue orders, &c., to certain persons of consideration in the State, such as Jageerdars, Jemadars, Maktahdars, &c., while delay would be caused if application were in such cases to be addressed first of all to the Minister of State, it is enjoined that in all such cases, the Chief Minister of Justice should cause every means to be used in the form of advice and persuasion in order to induce them to hold themselves amenable to the processes of justice, and that when all such measures have failed, and it appears to the Chief Minister of Justice that the said parties will not listen to

reason, then it will be for him to transmit to Government a clear statement of the whole of the circumstances of the case, with an expression of his own opinion, and he will be guided in the matter by the instructions of the Minister of State.

11. Whenever it may be necessary to obtain the orders of Government on any subject, the Secretary of the Chief Minister of Justice will be directed to address the Dewan's Judicial Secretary, and in doing so will always commence with the words—"Under the orders of the Chief Minister of Justice, it is stated for the information and such orders of the Minister of State as he may deem proper," &c. The Dewan's Secretary also in his turn will begin his reply in similar language, namely, "The letter, &c., dated——month—— having been received and laid before the Minister of State, it is written under his orders that," &c., &c.

12. Although it does not pertain to the Chief Minister of Justice to entertain appeals from the decisions of Talukdars and Sadr Talukdars, still should it appear from an examination of the statements received in any case that there has been some radical defect in any suit, or error in point of law or usage, it is competent for this functionary to remand the case for re-consideration to the Court concerned, accompanied with such plain remarks as may be requisite.

13. The Chief Minister of Justice shall not entertain appeals from the judgments of the Court of Appeal, but if any one petition him on reasonable grounds that his case has not been equitably disposed of, then he is certainly competent to call for from the Court concerned, and scrutinize the proceedings of the case; and in doing so, should it appear that there has been error in law or usage, or in the original character of the suit itself, then the Chief Minister of Justice shall transmit the proceedings in question, with a clear statement of his own opinion through the channel of the Judicial Secretary to Government, for the orders of the Minister of State.

14. When the Minister of State directs that any case disposed of by the Court of Appeal shall be re-investigated in the Court of the Chief Minister of Justice, then the latter will be competent either to investigate it himself, or to do so in conjunction with the head of any of the City Courts, but in either case, before issuing the judgment passed in the case, the proceedings shall be submitted for the perusal and orders of the Minister of State, and such orders shall be considered final.

15. It is competent for the Chief Minister of Justice, with the view of facilitating the conduct of business, and accelerating the administering of justice, to give strict and suitable orders to the heads of Courts under his authority, without reference to the Minister of State; but the making, amending, or altering of any rule or regulation shall not be carried out except with the approval and sanction of the Minister of State.

16. It shall be the duty of the Chief Minister of Justice carefully to provide that every order issued from his office to the heads of the lower Courts shall be promptly and precisely carried out, since disobedience of orders or delay in their execution is most injurious to good order and administrative arrangements. Therefore it is highly necessary that this functionary, whenever he sees defect or laxity in this respect, should apply instant remedy.

17. It is possible that at times differences of opinion may arise between the Appellate and other Courts, whether of the city, or of the districts in the interior. On such occasions, it will be the business of the Chief Minister of

Justice to use his best endeavours to reconcile the Courts at issue by all modes of persuasion, supporting the affronted Court, advising and admonishing the affronter, and pointing out its error. In the event of persuasion and advice proving ineffectual in bringing either or both the contending Courts to the right path, the Chief Minister of Justice will transmit the whole of the papers in the case, together with an expression of his own opinion, to the Minister of State, and seek his advice and counsel and be guided thereby.

18. The public generally complain of the Courts of this country, and consequently do not regard them with the respect which ought to be their due. The inhabitants of the city, the towns, and villages all alike raise the same clamour, and complain that justice is not promptly and impartially administered, especially in cases where Pleaders are retained on both sides, for these Vakeels not only conduce to enhance litigation and prolong suits, but are the cause of numerous complaints, sowing as they do the seeds of discord among communities, and disruption in families, and exciting parties to litigation for their own selfish ends. This is explained by the fact that these Vakeels are usually men of disreputable character, and utterly destitute of sound education, while the inhabitants of the city are as yet totally unacquainted with any rules or regulations. Under these circumstances, it is incumbent on the Chief Minister of Justice to do his best towards securing the improved working of the Courts under his control, so as to ensure suits of every description being enquired into and disposed of with the utmost promptitude and vigour, in order that no one may be inconvenienced by unnecessary delay. It should also be strictly enjoined that, as far as possible, parties shall personally plead their own causes, or shall employ their servants or friends to represent them instead of hired Vakeels.

19. The Chief Minister of Justice shall not exercise any original jurisdiction.

20. As regards jails, the Chief Minister of Justice must pay attention to the following points:—

1*st*.—Dimensions and capacity of the buildings, with a view to the preservation of the health of the prisoners.

2*nd*.—Sanitary condition of the jails and their free ventilation.

3*rd*.—Keeping the prisoners employed in in-door and out-door labour, seeing that work is not exacted from them for the benefit of private persons, and that their labour is strictly confined to works of public utility.

4*th*.—Diet and clothing of prisoners.

21. To enable the Chief Minister of Justice to exercise the functions of his office fully and satisfactorily, he is invested with the powers detailed here below, *viz*.:—

1*st*.—He is competent to suspend from duty the Secretary of his office for repeated disobedience of orders, or for receiving bribes, or for negligence, or incompetence, a report of the same being immediately made to the Dewan. If, in the opinion of the Chief Minister of Justice, the dismissal of the suspended official appear to be called for, the record of the case, with a clear statement of his opinion thereon, shall be forwarded to the Minister of State, and his advice in the matter will be duly attended to.

2*nd*.—The Chief Minister of Justice has authority, without reference to Government, to suspend from duty, to transfer, reduce, or dismiss from the service any member of his establishment for negligence, or misconduct, or incompetence; but the person concerned will be at liberty to appeal to Government.

3*rd*.—The Chief Minister of Justice is authorized, without reference to Government, to accord sanction to the recommendations of the Talukdars, or Sadr Talukdars, or the Judges of Courts for the suspension from duty, or transfer or reduction of the members of their establishments, provided just and reasonable grounds are shown. An appeal shall however lie to the Government by the party concerned.

4*th*.—The Chief Minister of Justice is empowered to appoint Officers to fill vacancies in his own establishment, or in those of other Courts, caused by the dismissal or death of the members thereof, provided such persons be qualified for such posts. It will be necessary, however, in these cases to give due consideration to the recommendations of Officers in favor of persons, based on fitness and long service.

5*th*.—Inasmuch as the Tehseeldars and Talukdars are in a great measure connected with the Revenue Department, the Chief Minister of Justice has no authority to suspend from office any of those Officers for any offence. But he can obtain the orders of Government in such cases, by reporting the circumstances, with an expression of his own opinion, to the Minister of State. The assistants of the Talukdars' Courts can be supended from office by the Chief Minister of Justice.

6*th*.—The Chief Minister of Justice is competent to suspend from office the Judge, or member of any of the City Courts, excepting the President, on grounds of glaring oppression, receiving bribes, or other misconduct, or total incompetence for his post; but a complete and clear report of the circumstances relating to such suspension, with the record of the grounds of conviction, shall be transmitted to the Minister of State, and his advice conformed to.

7*th*.—The Chief Minister of Justice has authority, without reference to Government, to suspend from duty, to transfer, reduce, or dismiss from the service the Darogahs, Jemadars, Policemen, and Clerks attached to the jails, provided their names are not borne on the Police Schedule. He can also appoint candidates in room of Darogahs, or Jemadars, or Clerks dismissed or deceased. In cases of disobedience of orders, or misconduct, or negligence on the part of any member of the Police force, detailed on jail duty, a report of the circumstances, including the name of the individual, his rank, and the charge against him, shall be forwarded for information and issue of orders to the Chief Minister of Police through the channel of the Secretary of that Department.

8*th*.—The Chief Minister of Justice has power to dismiss or re-instate any servant of the Stamp Office (which is connected with the Judicial Department) upon the application of the Superintendent of Stamps. But in the case of dismissal or re-instatement of the Superintendent of Stamps in particular, strong and valid reasons must be shown.

9*th*.—As the Superintendent of Stamps is also connected with the Revenue Department, in the event of any fault being imputed to that Officer, the Chief Minister of Justice should refer the matter for the information of the Minister of State.

10*th*.—Whenever absolutely necessary, or when despite every effort, arrears of cases have accumulated in any Court, the Chief Minister of Justice is authorized, with a view to clearing off such arrears, to entertain, without reference to Government, temporary establishment to the extent of Rs. 300 per mensem for a period of three months. If it be found necessary to incur larger expenditure, and for a longer period than above indicated, the sanction of Government should be sought.

11*th*.—The Chief Minister of Justice is authorized to remit fines awarded by the Judges of Adalats, or Sadr Talukdar, either on the Civil or Criminal side, or as regards stamped paper in petty cases, provided the aggregate amount of remissions on reasonable grounds do not exceed Rs. 500 per annum. For remissions in excess of that amount, the authority of the Minister of State will be requisite.

12*th*.—The Chief Minister of Justice is authorized to pass the abstracts of salaries and contingent bills of his own office, and of the District and City Adalats subordinate to him, provided the items are not disputed by the Examiner's Office, and provided also that they do not exceed the sanctioned scale, and are in all respects legitimate.

13*th*.—The Chief Minister of Justice is empowered to incur expenditure to the extent of Rs. 200 per annum, in each case, for the repairs and improvement of the jail buildings of the districts and the city. In the event of a larger amount being necessary, the sanction of the Minister of State should be obtained.

14*th*.—When it is found necessary to send prisoners on out-door labour, such as the repairs and construction of public works, the Chief Minister of Justice has authority to entertain contingent guards for their custody on the scale of one man on Rs. 6 a month to every four prisoners, and one Duffadar on Rs. 10 a month to every twelve men for a period not exceeding three months. In the event of their employment for a longer period being necessary, the sanction of Government must be obtained.

15*th*.—The Chief Minister of Justice has power to sanction charges on account of diet and clothing of prisoners, according to the regulated scale, as well as to authorize the cost of fetters, &c., for prisoners to the amount of Rs. 1,000 per annum.

22. He shall submit to Government the periodical returns and statements specified below, *viz.*:—

WEEKLY.

1*st*.—Diary of correspondence between his Office and other Courts, &c.

MONTHLY.

2*nd*.—General statement of cases filed in each criminal tribunal of the districts and of the city, showing respectively the number of cases tried, proved, not proved, sentences passed and under execution, the number of persons released on bail, and number of cases and persons pending trial at the close of the month.

3*rd*.—Return showing the amount of cash and value of property stolen or plundered, with details of amounts recovered and likely to be recovered.

4*th*.—General statement of suits filed in each Civil Court of the city and the districts, showing the numbers instituted and disposed of, the number in which execution has issued and is pending, number compromised, number struck out, and the number pending enquiry at the close of the month.

5*th*.—Return showing the total value of suits filed in each Civil Court of the districts and the city, the amounts awarded, realized, paid out, and remaining, and the amount difficult of recovery for reasons stated.

6*th*.—Return showing the number of persons imprisoned for debt, the debt, and term of imprisonment.

7*th*.—Return of prisoners in the district and city jails, showing the number admitted during the month, the number released on expiration of term, number escaped, and number remaining at close of month.

8*th*.—Return of work performed by prisoners of the city and district jails.

9*th*.—Return of stamped paper, showing balance of last month in the office of the Superintendent of Stamps and the District Courts, quantity supplied to the District Courts, &c., within the month, the quantity sold, and the stock remaining in each District and City Court and in the office of the Superintendent of Stamps.

10*th*.—Return showing the names of the Districts or Adalats, the repairs to the jails of which have been sanctioned during the month, with the sums so sanctioned.

QUARTERLY.

11*th*.—Statement showing the value of stamped paper sold in each District and City Court, and the Office of the Superintendent of Stamps.

12*th*.—Statement showing realizations from fines relating to stamped paper on the Civil and Criminal sides in each City and District Court, and in the Office of the Superintendent of Stamps, specifying the sums realized and the number of cases remaining.

HALF-YEARLY.

13*th*.—Statement showing the temporary establishments entertained under the authority given in clause 10 of para. 21 of these rules.

14*th*.—Statement showing the temporary Jail Guards entertained under the authority granted in clause 14 of para. 21 of these rules.

YEARLY.

15*th*.—General report upon the working of the several Departments under the control of the Chief Minister of Justice, noticing the conduct and services of the Officers and of the Judges of the lower Courts, &c.; the report should reach the Minister of State not later than the month of Meher.*

* Begins on 21st March as per present year's Almanac.

23. The Minister of State will on his own part be glad at all times to give his best support and advice to the Chief Minister of Justice in carrying out all important measures connected with his office, and he entertains the hope that this functionary also will on his part exercise his careful discretion and judgment on all occasions of difficulty. On mature consideration, should any measure of reform or improvement appear to him to be called for in any respect, even though no distinct complaint may have reached him in regard to it, he may, either in official form, or by way of consultation, make a reference to the Minister of State, and ascertain his wishes on the subject. In the adoption of any measure which may appear peremptorily called for in the interests of the public, or for the benefit of Government, if delay in applying for Government sanction appear to be productive of evil or loss, he should not hesitate to carry out the requisite measure upon his own responsibility, though it may be beyond the scope of authority vested in him by these rules; but he shall immediately, after carrying out the measure, make a full report of the circumstances thereof to the Dewan, with the grounds for acting upon his own authority in the matter.

Dated 21st Rajab, 1286 *Hijree* (*27th October* 1869).

Rules for the Conduct of Business relating to the Department of the Chief Minister of Revenue (SADR-UL-MIHAMM-I-MALGUZAREE) *of His Highness the Nizam's Government.*

Whereas it has been deemed expedient to facilitate the conduct of business connected with the Department of Revenue, an Officer under the designation of Sadr-ul-Mihamm-i-Malguzaree has been appointed, and the Departments of the State Revenue relating to the Sarf-i-khass lands, and the Khalsa under Dewanee administration enumerated below, have been placed under his supervision and control :—

1*st*.—All the Departments of Land Revenue.

2*nd*.—All the Siwae or extra sources of revenue.

3*rd*.—The Revenue Stamps.

4*th*.—Postage Stamps.

5*th*.—The Karôdgeeree or Customs Department.

6*th*.—The Forest Department.

For carrying out the work connected with the above branches of administration, one 1st and one 2nd Secretary (Motamid) have been attached to this functionary's office.

The following paragraphs are prescribed for this Department :—

1. For giving effect to the transactions of the office of the Revenue Minister, he shall have a seal engraved with the words—"Seal of the Office of Sadr-ul-Mihamm of Malguzaree of the Government of Nizam-ul-Moolk Asiff Jah."

2. His Secretary shall every day submit to him all letters and correspondence, &c., received by him from the Departments mentioned above, and shall obtain his orders on every subject.

3. The Secretary of the Department shall correspond with all the Officers of Government, but every Roobakaree should commence with the words—"Under the orders of the Revenue Minister, information is given," or "it is written," &c., &c.

4. Between the office of the Minister of Revenue and the other Departments and Officers of Government, correspondence shall be conducted in the form of Roobakarees.

5. The Sadr Talukdars, the Talukdars, and other Officers of Government shall address their correspondence to the Secretary of the Revenue Minster, commencing with the words—"For the information (or orders) of the Revenue Minister."

6. In matters beyond the powers of the Revenue Minister, or in cases in which it is necessary to obtain the orders of Government, his Secretary shall address the Revenue Secretary of the Minister of State, prefacing his letters with the words—"Under the orders of the Revenue Minister, it is written." The reply of the Minister of State will likewise be conveyed through the medium of the Secretaries.

7. All the drafts and other papers which are to be placed on record shall bear the signature of the Minister of Revenue, but every order on important subjects should be written in his own handwriting, or caused to be written in his presence by his Secretary. In either case, it shall be signed by the Revenue Minister himself. He will be responsible also for all matters which may be carried out under the signature of his Secretary. In all routine matters, such as calling for papers, or enjoining compliance with orders previously issued, the Secretary himself may issue orders under his own signature, but such orders also should be worded as under the orders of the Minister or Head of the Department.

8. For the efficient performance of the work in this Department of the State, an adequate establishment has been sanctioned.

9. The Revenue Minister is invested with the powers defined here below :—

1*st*.—He is competent, without reference to Government, to suspend from duty, or transfer, or reduce, or dismiss from the service any member of his office establishment on grounds of misconduct, negligence, and incompetence; but the party so dealt with will be at liberty to make an appeal to Government.

2*nd*.—On sufficient and valid grounds shown by the Sadr Talukdars, Superintendent of Forests, &c., the Minister of this Department has power to suspend from duty, transfer, reduce, or dismiss from the service any member of the establishments of the Sadr Talukdars, Talukdars, &c.; but the parties so dismissed may appeal to Government.

3*rd*.—The Minister of Revenue is empowered to suspend from office any Tehseeldar, Talukdar, Sadr Talukdar, and Superintendent of Forests, &c., on the grounds of misconduct, repeated negligence, or incompetence; but after investigation and completion of the case, the Revenue Minister shall submit the same to Government, recording his own opinion thereon in clear and distinct terms, and, pending the orders of Government, shall take no further action beyond suspension.

4*th*.—He is competent to recommend candidates for the appointment of Tehseeldars, Talukdars, Sadr Talukdars, Superintendent of Forests, &c.; but it will be optional with Government to approve or disapprove of such recommendations without assigning grounds for doing so. Moreover, this Minister in every instance in which a candidate may be entertained in

consideration of long service and ability, shall, besides his own opinion, submit a detailed explanation of the claims of such candidate.

5*th*.—He is empowered to hear and determine appeals in the Revenue Department on the decisions of Talukdars and Sadr Talukdars, especially in Revenue matters; such cases being received on stamped papers of the values laid down here below:—

1*st*.—For claims relating to land paying revenue to Government, on stamp paper valued 8 annas.

2*nd*.—For claims relating to land paying no revenue to Government, on stamp paper of values prescribed for Civil suits.

6*th*.—The decisions passed by this Minister in matters relating to Land Revenue, Abkaree and Karôdgeeree (Customs, &c.), shall be held to be final, provided the amount of claim does not exceed Rs. 1,000.

7*th*.—He is authorized to sanction remissions of arrears of revenue in any division to the extent of Rs. 2,000 outstanding for a period exceeding three years, submitting monthly reports thereof to Government.

8*th*.—He has authority to sanction refunds of revenue erroneously realized to any amount not exceeding Rs. 1,000.

9*th*.—He may also sanction expenditure from Government revenue on public works, repairs of buildings and tanks, &c., in all the divisions, to the extent of Rs. 20,000 within the period of one year.

10*th*.—He is empowered to entertain temporary land-measuring establishments in the Revenue Department for a period of six months in each division, the cost thereof not exceeding Rs. 300. In the event of a larger expenditure being required, the sanction of the Minister of State should be applied for.

11*th*.—On emergent occasions, or when required for clearing off arrears of work, &c., provided such arrears shall not be owing to the negligence of Officers, or due to other improper causes, he has authority to sanction temporary establishment for a period of three months, at a cost not exceeding Rs. 300 per mensem. On a greater contingency arising, sanction will be subject to the Minister's order.

12*th*.—He is authorized to sanction travelling allowances on circuit to Sadr Talukdars, Talukdars, and other Officers of Government, who are entitled to such under the rules.

13*th*.—He is authorized to pass the abstracts of salaries and contingent charges of his own office, and those of the Departments subordinate to him in the districts, if no objections are raised in the Examiner's Office, provided that the items charged are not in excess of the scale sanctioned by Government, and are legitimate.

14*th*.—He is competent to reduce or enhance the fines awarded by the Sadr Talukdars or Talukdars for infringement of Stamp Rules, provided the total amount of fine does not exceed Rs. 300; a higher amount will require the sanction of the Minister of State.

15*th*.—With reference to accepting applications for uncultivated and waste lands, he shall be guided by the rules prescribed on that subject. But if any measure not provided for in these rules happen to be called for at any time, he shall not be at liberty to authorize it without special sanction of the Minister of State.

16*th*.—He shall make arrangements for the grant of permits from his office for the cutting of timber.

10. He has no power, without obtaining the permission of Government, to grant fresh "Maktahs" or leases on fixed quit-rent, money allowances and stipends, or in disputed cases to declare such claims valid after enquiring into their titles. When referring such matters to Government, he shall submit a clear statement of his own opinion with that of the Talukdar and Sadr Talukdar thereon.

11. He is competent to transfer from one district or division situated within the same part of the country any Tehseeldar or Talukdar, but he cannot transfer or remove the said Officers from one part of the country to another without the sanction of Government.

12. He has no power, without obtaining the orders of Government, to sanction remission of balances of revenue either of the current year, or of the two previous years.

13. He is not competent, excepting under Government authority, to abolish or reduce any tax or duty fixed by Government, whatever the nature of such tax or duty may be.

14. He is not vested with power to refund any sum of money after it has been credited in the accounts, or paid into the treasury But he can cause the refund of such sums of money by applying for the authority of Government so to do.

15. He has power to suspend from duty the Secretary of his office for receiving bribes, or other misconduct, or for repeated negligence, a full report of the circumstances being made for the information of Government. In the event of his offence being considered by the Minister of Revenue so grave as to call for his dismissal from the service, then the whole of the circumstances of the case shall be laid before Government, with a view to elicit orders thereon.

16. When any dispute or cause in revenue matters arises among the Officers belonging to the Dewanee, Maktahdars, Inamdars, Jageerdars, or Jemadars, the Revenue Minister is authorized, in the first instance, to advise such persons, and use his best endeavours towards bringing their affairs to adjustment. If, after using all efforts and persuasion, it should appear to him that there is no prospect of effecting a reconcilement without recourse to coercion, in that case the whole of the circumstances of the case shall be perspicuously laid before the Minister of State, and his orders obtained thereon.

17. The Revenue Minister shall submit to Government the under-mentioned periodical returns:—

WEEKLY.

1*st*.—Diary of correspondence held between his own and the other Departments.

MONTHLY.

2*nd*.—Return of entertainment and dismissals of district establishments.

3*rd*.—List of permits for cutting timber granted from his office.

4*th*.—Statement of Revenue Stamps, showing balances of last month in the Office of the Superintendent of Stamps and in the District Offices, with the quantity supplied to the districts, &c., during the month, the amount of sale, and the stock remaining in each District and in the Office of the Superintendent of Stamps.

5*th*.—Statement showing the names of the districts in which sanction may have been accorded on account of repairs, and to what amount.

QUARTERLY.

6*th*.—Returns of persons imprisoned for arrears of revenue.

7*th*.—Statement of refunds.

HALF-YEARLY.

8*th*.—Return of the state of crops and agricultural prospects.

9*th*.—Statement of temporary establishment entertained under the provisions of clause 10, para. 9 of these rules.

YEARLY.

General report upon the whole of the Province, the state of trade, arrangements regarding timber and forests, notice of the manner in which the Officers of Government have conducted their duties, and other matters.

17. The Minister of Revenue shall furnish to the Account Department the under-mentioned periodical returns:—

MONTHLY.

1*st*.—Return of permits granted from his office for cutting timber.

QUARTERLY.

2*nd*.—Statement of remissions granted by him and by the Sadr Talukdars.

3*rd*.—Statement of refunds granted by him and by the above Sadr Talukdars respectively.

18. The Government, while on its part it will at all times be happy to give its best support, aid, and advice to the Minister of Revenue in the discharge of the duties entrusted to him, entertains the hope that the latter functionary will, on all necessary occasions, use his own careful discretion and judgment in the transaction of business. On mature consideration, should the adoption of any measure appear to him absolutely demanded for the benefit of the public and in the interests of Government, and that delay would be productive of inconvenience, he shall, under such circumstances, unhesitatingly carry out the requisite measure at once upon his own responsibility, though it may be beyond the powers vested in him; but he shall immediately after doing act upon his own authority on the occasion, for the information of Government.

Rules for the Conduct of Business appertaining to the Department of the Chief Minister of Police (SADR-UL-MIHAMM-I-MAHKAMAH KOTWALEE) *under His Highness the Nizam's Government.*

Whereas the Department of Police has now become a highly important branch of the administration, therefore it has been deemed expedient by Government, with a view to the matters connected with this Department being carried out with promptitude and energy, to appoint a special officer under the above designation, for whose guidance the following paragraphs are laid down:—

1. Under the supervision, care and control of this Minister are placed the Departments mentioned below, *viz.*:—

1*st*.—The Police of the city of Hyderabad.

2*nd*.—The Police of the Sarf-i-khass lands.

3*rd*.—The Police of the suburbs of the city of Hyderabad.

4*th*.—The Police of the Districts.

2. For the efficient performance of the duties of this Department, 1st and 2nd Secretaries (Motamid) have been appointed. The Secretary shall, under the orders of his Chief, hold direct correspondence with other subordinate Departments. He is also at liberty to correspond with other Departments of Government whenever the exigencies of the service require it.

3. Whenever it appears to the Minister of Police necessary to obtain the orders of Government on any subject, his Secretary shall, under his orders, address the Secretary of the Minister of State in the Police Department, and the reply of the Minister of State shall likewise be addressed through the same Secretary to the Secretary of the Minister of Police.

4. Although all communications will be issued under the signature of the Secretary of the Minister of Police, yet the latter functionary will be held responsible for the acts of his Secretary; therefore he should not allow any paper or letter to leave his office before his signature is affixed to the draft of such letter or memorandum. But in important matters, every order emanating from him shall be written with his own hand, or caused to be written in his presence by his Secretary, and in either case such order shall be signed by the Minister of Police himself.

5. For giving effect to the transactions connected with this Department, a seal shall be provided, engraved with the words—"Seal of the Sadr-ul-Mihamm of Police of the Government of Nizam-ul-Moolk Asiff Jah."

6. For carrying on the work of this office, an adequate establishment has been fixed.

7. For guidance in the conduct of business, and the control of Officers and men of the Police force, and for instruction as to the mode in which the work of the Department is to be peformed, a body of Police Rules has been drawn up after mature deliberation, and put in force, which the Minister of Police will conform to in administering the Department. The paragraphs of the rules in question which do not apply, or cannot be made applicable, to the City Police, shall of course be inoperative as regards the city, but if any rule can, with a slight modification, be advantageously applied to the city, it shall be so modified and applied accordingly; in all such cases, it will be necessary to bear in mind that the measures adopted shall not be made to inconvenience any person, or be felt as grievous or oppressive by the people.

8. Between the office of the Minister of Police and the Officers of this and the other Departments, correspondence shall be conducted in the form of Roobakarees, as this mode of communication is calculated to obviate inconvenience in general, and preclude the possibility of giving offence.

9. If between the Officers, &c., under the control of the Minister of Police and persons belonging to the Jageerdar, Inamdar, Maktahdar, and Jemadar classes, any dispute arise as regards the apprehension, or harbouring of any offender, or offering obstruction in Police matters, the Minister of Police shall, in the first instance, employ strong advice and persuasion to bring the parties concerned to the right path and proper behaviour. If, however, such advice and persuasion prove ineffectual, and coercion appear necessary, in that case he shall lay the whole of the circumstances, with the papers in the case, before Government, and obtain the orders of the Minister of State thereon.

10. Although the adoption of stringent measures for the suppression of crime in general is an indispensable part of Police administration, yet amongst the different descriptions of crime that which demands the greatest exertion, and the most serious attention on the part of the Minister of Police is dakaitee, which is the most heinous and atrocious of all crimes. Where it occurs, calamities and sufferings of every description ensue, such as plunder, outrage, and violence of all sorts, rape, murder, &c. Therefore the efficiency and vigilance of the Police, or the contrary will be clearly evidenced by the occurrence or suppression of this crime, or where it occurs, by the apprehension of the perpetrators and plunderers. If this crime does not disappear, or the perpetrators thereof are not apprehended, it will be a conclusive proof of the total inefficiency of the Police force. The second heinous crime is highway robbery. The expenditure of lakhs of rupees by Government on account of the Police is for the security of the lives and property of the people. If, notwithstanding such enormous expenditure, property continue to be plundered, the Police arrangement is simply useless. Therefore the suppression of this crime is also most indispensable. Another point calling for particular attention is the fact that after the occurrence of murder, or dakaitee, or highway robbery, or any other crime, the Police Officers generally prosecute search and pursuit for a few days, and afterwards lose sight of the matter altogether; whereas it is absolutely necessary that search and pursuit should not be abandoned until detection and apprehension of the criminals ensue, and exertions and endeavours of every kind should continue. For adopting the needful and remedial arrangements in all these respects, the Government will certainly look to the Minister of Police.

11. To enable him to exercise the functions of his office with efficiency, the powers defined here below are conferred upon him:—

1*st*.—He is authorized, without reference to Government, on sufficient grounds to suspend from duty, or transfer, or reduce, or dismiss from the service any Policeman, Duffadar (inferior officer), or Jemadar of Police.

2*nd*.—He is authorized to suspend from duty any Officer from the grade of Assistant General Superintendent to the Ameen of Police, &c., on grounds of negligence in the performance of duty, glaring oppression, or other misconduct, or incompetence; but after enquiry into their delinquency, the whole of the proceedings, with a clear statement of his opinion, shall be submitted to Government for orders.

3*rd*.—He is competent to recommend candidates on grounds of long service and ability for the appointments of General Superintendent, Assistant General Superintendent, and Superintendent of Police of the Districts; but Government reserves to itself the option of accepting or rejecting such recommendations without assigning any reason.

4*th*.—The Minister of Police is authorized, without reference to Government, to suspend from duty, or transfer, or reduce, or dismiss from the service any member of the establishment of his office, and to appoint another to fill the vacancy caused thereby.

5*th*.—He has authority, without reference to Government, upon just and sufficient grounds being shown by the superior Officers, to suspend from duty, or transfer, or reduce, or dismiss from the service any individual of their office establishments, and to appoint another instead; but an appeal will lie to Government in all such cases.

6*th*.—He has authority, without reference to the Minister of State, to transfer men, or Officers of Police from one district or division to another, whether such transfers be made by way of punishment, or as considered to be called for in the interests of the public service.

7*th*.—He is competent to hear and determine appeals against the decisions of the Police Courts of the city and its environs. He shall also exercise the said powers as regards the orders of the General Superintendents of Police of the Sarf-i-khass estates, and of the districts, passed in appeal from the decisions of the Assistant District Superintendents of Police. The decisions of the Minister of Police in cases relating to the duties of the Police shall be held to be final.

8*th*.—He is authorized to sanction repairs to Police stations in each district to the extent of Rs. 200 within one year.

9*th*.—If any Policeman, or Jemadar, or Ameen of Police distinguish himself by the display of special zeal and energy in the accomplishment of any difficult work, the Minister of Police is authorized to promote him to the next higher grade at once, though such promotion of an Officer may cause the sanctioned scale of establishment to be exceeded. Till such time, however, as a vacancy occurs in the grade to which the promotion has been made, the Officer so promoted shall be reckoned supernumerary.

10*th*.—When at any time, fixed term prisoners escape from jails, or in serious cases where the capture of any one is highly necessary, the Minister of Police is authorized to issue proclamations offering a reward of Rs. 200 to any person who may apprehend such prisoner or criminal. Even in the absence of such proclamations, if any Policeman or Police Sawar bravely apprehend any criminal, the Minister of Police may grant him a reward up to Rs. 100. Rewards of larger amounts will be subject to the sanction of the Minister of State.

11*th*.—The Minister of Police is authorized to pass the abstracts of salaries and contingencies of all the Police Departments and the expenses of the jails, provided that the items charged are not in excess of the sanctioned limit.

12*th*.—He has power without reference to Government, when required for the protection of any dangerous locality, to entertain temporary additions to the Police force; but the total cost on account of them shall not exceed Rs. 300 per mensem for one district, nor the period of their employment extend beyond two months.

13*th*.—He is authorized to incur expenditure from the Clothing Fund of the Police on account of clothing for the Police force through the Superintendent of Clothing, in conformity with the rules of the service.

14*th*.—The Minister of Police is empowered to investigate the case of any offender of the Police force, which may be beyond the powers of the Officers subordinate to him, provided the offence relates to the discipline and duty of the offender as a Police servant; and, in case of conviction, imprisonment for a term not exceeding two years, or fine up to Rs. 500, or both may be awarded by him. If the offence be of a nature requiring a greater degree of punishment, the case must be referred to the Criminal Court of the city, or of the districts, in conformity with the rules in force.

15*th*.—The Minister of Police is competent to suspend from duty the Secretary of his office in case of bribery, or misconduct, or repeated negligence; but the grounds of such suspension shall be immediately reported for the information of Government, or in the event of the offence charged being established on enquiry, and in the opinion of the Minister of Police being such as to call for the dismissal of the culprit, then the proceedings of the case, with a full expression of the Minister of Police's own opinion thereon, shall be submitted for the orders of Government,

12. It is absolutely necessary that the Sadr-ul-Mihamm of Police should exercise a careful supervision over the Officers and force under his control, and see that the rules of the service are strictly conformed to in every respect, and that the distribution of the Police force and posts is judiciously arranged and carried out. Whenever any plan for the improved administration of the Department occurs to the judgment of the Minister of Police, he shall unhesitatingly represent the same to Government, and act according to the orders he shall receive thereon.

13. He shall submit to Government the under-mentioned periodical returns, *viz.* :—

WEEKLY.

1*st*.—Diary of correspondence.

MONTHLY.

2*nd*.—Statement of crimes committed, with detail of districts, and showing the number of cases in which criminals have been apprehended, the number in which they have not yet been apprehended, and the number brought before the Courts of the districts.

3*rd*.—Statement of fines levied under the powers vested in the Minister of Police or other Police Officers.

4*th*.—Statement showing sums sanctioned for repairs of Police stations.

5*th*.—Statement showing appointments and dismissals made under the authority of the Minister of Police.

YEARLY.

6*th*.—General report upon the Police administration of the city and of the districts, conduct of the Officers, &c.

14. While the Government on its own part will at all times give its best support, aid, and advice to this functionary in carrying out all important measures connected with his office, it desires that he himself will exercise his own prudence and judgment on all occasions of difficulty. On mature consideration should it appear to him that any measure is essential for the benefit of the public, or the interests of the State, and that delay in its adoption would be productive of inconvenience to the public, then even if the matter be beyond the powers vested in him, he shall not hesitate in carrying out the same at once upon his own responsibility, and immediately after doing so shall report the circumstances and the grounds for carrying out the measure upon his own authority for the information of the Minister of State.

Rules for guidance in the transaction of Business pertaining to the Office of Chief Minister of Miscellaneous Departments (SADR-UL-MIHAMM-I-MUTAFARRIKAT) *of His Highness the Nizam's State.*

Besides the Judicial, Revenue, and Police Departments, there are certain other Departments of Government, which, though of a miscellaneous character, demand for their proper administration and supervision great care and attention. Therefore with a view to ensure business connected with these Departments being carried out with correctness and efficiency, it has been deemed expedient by Government to appoint a supervising Officer under the above designation, and to place under his control the Departments mentioned below, *viz.* :—

1*st*.—Public Works Department.

2*nd*.—Educational Department of the city and the districts, with the Hyderabad Engineering College.

3*rd*.—Medical Department, comprising the Native Doctors and Dispensaries of the city and of the districts, and of the Government lands.

4*th*.—Conservancy and Sanitary Department of the city and suburbs, and of the Government lands and Khalsa Districts under the Minister of State.

5*th*.—The Department for the improvement and repair of village roads. Also other Miscellaneous Departments which it may be deemed expedient hereafter to entrust to this functionary.

The Government having thus specially appointed a Minister for the supervision and control of the affairs connected with these Departments, feels every confidence that that official will administer them with the utmost prudence and sagacity, and the following paragraphs are laid down by way of rules for his practical guidance.

1. For giving effect to the transactions connected with his office, a seal shall be provided engraved with the words—"Seal of the Office of Chief Minster of Miscellaneous Departments of the Government of Nizam-ul-Moolk Asiff Jah."

2. For the efficient performance of work under the Minister of Miscellaneous Departments, a Secretary and an Assistant Secretary (Motamid) have been appointed. It shall the duty of the Secretary to conduct under his own signature, pursuant to the instructions of his Chief, the whole of the correspondence in the Departments enumerated above.

3. For the performance of the above work, an adequate establishment will be provided.

4. On all necessary occasions this Minister will through his Secretary correspond with the Officers of other Departments of Government. The correspondence with Departments to which Secretaries are attached shall be carried on through that medium. Departments without Secretaries shall be addressed direct.

5. All heads of Government Departments shall be instructed that whenever it may be necessary to send replies, or make references to the office of this Minister, the correspondence shall be addressed through the Secretary under the formula—"For the information of the Chief Minister of Miscellaneous Departments, it is written," &c., &c.

6. Although all correspondence will issue under the signature of the Secretary of this Department, yet the responsibility will rest with the Minister of the Department himself; therefore all drafts and other documents which are to be placed on record should bear his own signatures, and all orders on important subjects should be written out in his own handwriting, or caused to be written in his presence by his Secretary, and in either case should be signed by the Minister himself.

7. Between this Minister and other Officers, &c., of Government, correspondence shall be conducted in the form of Roobakarees, as this mode obviates inconvenience in official correspondence, and gives no offence to any Officer.

8. Whenever it may be necessary for this Minister to obtain information from, or make communications to, authorities other than those pertaining to the Departments under his control in the city, or in the districts, such as Maktahdars, Jageerdars, Jemadars, &c., as well as other Departments, as regards cleanliness of public thoroughfares, &c., it shall not be necessary to apply for Government Ahkams or Takeeds, &c., to their address, but on such occasions, the Minister of the Department himself is competent through the channel of his Secretary to call on those concerned for the needful information, or to persuade or advise them to accede to any requisite measure. In the event of persuasion and advice, &c., proving ineffectual, or direct refusal being made, and coercion appearing necessary, then the whole matter, with a clear expression of opinion, shall be laid before Government for orders.

9. In matters relating to the conservancy and improvement of the city and towns, &c., the Secretary of the Minister of this Department shall correspond, as regards the city, with the President of the Municipal Committee; and as regards the towns and villages with the Talukdars. The President aforesaid and the Talukdars shall address their replies to the Secretary of the Department.

10. As regards measures relating to the course of instruction and arrangements in schools, this Minister shall be the President of the Educational Committee, and all measures decided on by the Committee referred to shall emanate from the office of this Minister. In connection with the Hyderabad Engineering College also, all business will be conducted under the signature of the Secretary of this Department as *ex-officio* Educational Secretary. The Educational resolutions should bear the signature of the President of the Educational Committee, *i. e.*, the Minister of the Miscellaneous Departments.

11. If, in any case, it becomes necessary to obtain the orders of Government, the Secretary of the Department shall address the Secretary of the Minister of State in the Revenue Department, through whose channel also the reply will be communicated.

12. Rules have been prescribed by Government for the regulation and management of schools in the city of Hyderabad and in the districts, the working of which the Minister of Miscellaneous Departments shall continue to watch, so as to observe whether business is conducted in conformity with rule. He is at liberty also to submit to Government from time to time proposals for new measures, or suggestions for amendment, or modification of the rules in force, which may be desirable and expedient, and shall act in accordance with the advice of the Minister of State in such cases.

13. In matters relating to the Native Doctors and Dispensaries of the districts, the Secretary of the Minister of the Miscellaneous Departments shall hold correspondence with the Assistant to the British Residency Surgeon, under whose supervision the Medical Department referred to is placed. In consultation with, and under the advice of, the British Officer alluded to, he can carry out on his own responsibility whatever may be in conformity with the prescribed rules. Otherwise the orders of Government must be obtained and conformed to.

14. A special code of rules for guidance in the Public Works Department has been already framed and introduced, in conformity with which the Minister of Miscellaneous Departments will regulate the business of that Department.

15. In the transaction of business connected with the Public Works Department, the Chief Engineer shall act as Secretary to the Minister of Miscellaneous Departments, his letters being worded as those of other Secretaries.

16. When the Government shall have sanctioned the annual Budget of charges, and apportioned the sums for expenditure in each Department, the Minister of this Department may pass, upon his own signature, the estimates of charges of each denomination within the sums allotted. It will be necessary that the Budget of charges for each ensuing year shall be prepared with all possible expedition, and submitted to the Minister of State two months before the commencement of the year to which it relates, to enable that authority to make such revision or modification therein as may be reasonable or expedient in the interests of Government.

17. Pending the preparation of the annual Budget of charges, whenever estimates are received, a general statement thereof shall be submitted for Government sanction, and after such sanction has been notified by signature, the district estimates can be passed upon the signature of the Minister of Miscellaneous Departments.

18. The functionary just named is invested by Government with the powers defined below :—

1*st*.—When the Chief Engineer considers necessary and recommends changes among Zillah Engineers and Assistant Engineers, he is authorized after proper enquiry to sanction such changes. But the reduction, appointment, and dismissal of Assistant Engineers and Zillah Engineers will take place under the orders of Government; these Officers can however when necessary be suspended from duty by this Minister.

2nd.—In the Conservancy and Sanitary Department of the city and towns, the Minister of Miscellaneous Departments is authorized to sanction expenditure up to Rs. 2,000 as regards the city, and up to Rs. 1,000 for each district per annum for improvement of a town or a village.

3rd.—In the Educational Department, the Minister of Miscellaneous Departments is authorized to sanction expenditure up to Rs. 500 in each district for miscellaneous purposes and for school buildings.

4th.—In the Department of improvement and repair of village roads, the Minister of Miscellaneous Departments may sanction expenditure up to Rs. 5,000.

5th.—He is also competent to suspend from duty the Secretary of his office on grounds of repeated disobedience of orders, or corruption, or negligence, or incompetence; but a report of the same shall be immediately made to Government. In the event of the dismissal of the Secretary being in the opinion of the Minister of this Department expedient, the proceedings held in the matter, with a clear expression of opinion, shall be submitted to Government, and action taken according to the advice of the Minister of State.

6th.—The Minister of Miscellaneous Departments is competent, on proof of the charge of negligence, or incompetence, to suspend from duty, transfer, reduce, or dismiss from the service persons on the establishments of the Public Works and Conservancy Departments of the city, &c., as well as those on his own office establishment, but such persons will have it in their power to appeal to Government.

7th.—He is competent, without reference to Government, to suspend from duty, transfer, reduce, or dismiss from the service Schoolmasters and Officers in the Conservancy and Sanitary Department, &c., on grounds of unfitness, misconduct, or incompetence, as well as to appoint others in their stead. But in the cases of Headmasters of the Hyderabad School of Sciences, the Engineering College and the Principal thereof, the Chief Engineer in the Public Works Department, the Secretary to the President of the Municipal Committee of the city, it will be necessary to obtain the orders of Government.

8th.—He is competent to authorize expenditure for construction and repairs of hospitals to the extent of Rs. 300 in each district.

19. It is necessary that he should keep a watchful eye upon the conduct of all the Officers subordinate to him, and see that every thing is properly done; that in the Public Works Department, every work is substantially and expeditiously executed; that the business of the department is carried on with zeal and energy, and whether the system prevailing in the various Departments is correct, or change or modification is required. He should represent to the Minister of State whatever measure may appear to him to be expedient, and act according to his advice in such matters.

20. He shall submit to Government the periodical returns specified here below, *viz.*:—

WEEKLY.

1st.—Diary of correspondence.

MONTHLY.

2nd.—Statement of sums sanctioned monthly by him in the several divisions of his Department.

3rd.—Statement of receipts, disbursements, and balances of Local Funds of the city and towns as at present fixed, or hereafter to be fixed.

4th.—Return of sick in hospital to be obtained monthly from the Medical Department.

QUARTERLY.

5th.—Returns of pupils in schools, with detail as to the number of admissions during the current month, number that left the schools, and the total number upon the rolls.

6th.—Statement showing the sums sanctioned for construction of village roads.

7th.—Progress report of construction and repairs of village roads, with particulars as to what remains for completion.

YEARLY.

8th.—Statement of all public works in the several Departments in detail, as per estimates countersigned and sanctioned by him, showing the total amount sanctioned, the quantity of work executed, and that remaining for completion, and in the event of there being any laxity or interruption, the cause and source of it.

9th.—Report upon the administration of the several Departments under him, noticing the services and conduct of the Officers, &c., the increase of schools, the number of pupils who have completed their studies and become qualified for service, and such other matters of interest. The report should be so timed as to reach the Minister of State in the month of Meher.

21. The Government, while it will on its own part always give every support, consideration, and useful advice to this functionary in the execution of all important matters connected with his office, wishes to express the desire that he himself should on all difficult occasions bring his own intelligence to bear upon them. When on mature consideration, the prompt adoption of any measure appears to be imperatively required for the well-being of the public, or the advantage of Government, and delay would cause distress or inconvenience to the public, then even if no provision exists for such an emergency in the powers vested in him, he should, nevertheless, without hesitation, at once carry out the requisite measure on his own responsibility, and immediately after doing so report the whole of the circumstances, with the reasons for acting upon his own authority, for the information of Government.

(True Translation)

G. A. BOSWELL,
Extra Assistant Commissioner.

APPENDIX B.

Abstract translation of a Memorandum addressed by the Prime Minister (MADAR-UL-MIHAMM) *of His Highness the Nizam's State to the Chief Minister of Justice.*

1. Rules for the guidance of the Chief Minister of Justice, under the signature of the Minister of State, are herewith enclosed, and are prescribed as the basis of future practice. Due promulgation of the same has been made through the latter's office to the functionaries of the Department of Justice who are concerned. And similarly the Chief Minister of Justice should issue his instructions to the Officers thus placed under his control, directing the reference to him of judicial matters for the future.

2. Although under the new arrangements the Minister of State will not ordinarily correspond with the executive Judicial Officers, nevertheless it may happen that, on emergencies, or when time is an object, orders may be issued direct to the latter from the Minister's office. Copies of such orders will immediately be transmitted to the office of the Chief Minister of Justice. And in like manner all holding judicial offices must be instructed to forward to the head of their own Department copies of any communications which they may have occasion to address direct to the Minister of State.

3. It has been determined to issue weekly, or oftener when necessary, a Gazette of His Highness the Nizam's Government. All dismissals from the service and appointments, with all circular orders and such other subjects as may advantageously be made public, will be published in the Gazette. Whatever orders may be issued by the Minister of State shall appear in it under the signature of the Secretary of the Department to which it appertains; and in the same way orders issued by the Ministers of Departments will be published under the signatures of the Secretary of each of the Departments respectively. The Chief Minister of Justice will instruct his Secretary to forward to the Superintendent of the Printing Office all orders which may be issued by him; and every Officer affected by such order shall consider its publication in the Government Gazette a sufficient voucher for its validity.

4. Saiad Muhammad Mowdoodee Sahib has been appointed Secretary of the Chief Minister of Justice's Office. The Minister of Justice should report if he knows of any one qualified for the post of 2nd or Assistant Secretary. A list of qualified persons amongst those in the service of Government will be forwarded, and the selection of one of their number for the office in question will be left to the discretion of the Minister of the Department.

5. Enclosed is a return of establishments which it will be necessary to transfer to the office of the Minister of Justice consequent upon these reforms. These persons should be appointed to suitable posts, and their numbers supplemented if requisite by others. As far as possible, it is desirable that establishments should be completed by a re-distribution of Officers already in the service, provided these are found qualified, rather than by the introduction of outsiders.

6. Inasmuch as the Chief Minister of Justice has, with the utmost liberality of mind, associated himself with the Minister of State in the work of Government, Sir Salar Jung entertains the strongest hope that in all matters conducing to the welfare of the public, or affecting the prosperity and good name of the State, the Minister of Justice will lend his best endeavours with cheerfulness and zeal, and believing the Minister of State to have the interests of the country sincerely at heart, will not hesitate freely to consult with him when occasion arises.

7. There is another point which must be noted, namely, the Secretary of the Chief Minister of Justice's office must be charged to use the utmost forbearance and prudence in the transaction of business, to temper both personal intercourse and correspondence with all courtesy, to pay to every one the respect he is entitled to, and, as far as possible, to combine the *Sauviter in modo* with the *fortiter in re.*

8. Although the correspondence between the Secretaries of the Minister of State and the Department of Justice will, as a rule, be conducted in the form of Proceedings (Roobakaree), nevertheless Sir Salar Jung hopes that friendly communications between himself and the Minister of Justice will not thus be superseded. Whether such letters be written in the handwriting of the correspondents themselves, or in that of their Secretaries, they will be found an advantageous mode of exchanging sentiments on any point.

(True Translation)

G. A. BOSWELL,
Extra Assistant Commissioner.

No. 179 P, dated 26th January 1870.

From—C. E. R. GIRDLESTONE, ESQ., *Offg. Under Secy. to the Govt. of India,* FOREIGN DEPT.,

To—*The Resident at Hyderabad.*

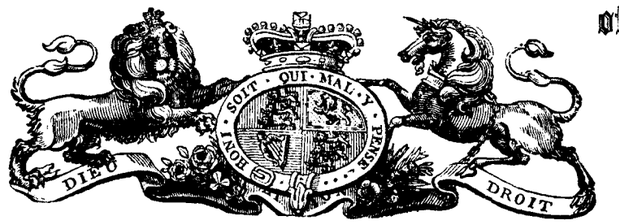
I have laid before the Viceroy and Governor General in Council your letter No. 45, dated 15th December 1869, reporting certain arrangements which have been made by the Government of the Nizam for the better government of His Highness' territories, and forwarding a copy of a Gazette which has been lately established, together with a translation of the more important portions.

2. In reply I am directed to state that His Excellency in Council cordially approves of the arrangements now reported, and desires that an expression of the satisfaction of the Government of India may be communicated to Sir Salar Jung and the Ameer-i-Kubeer.

3. The translation submitted by you will be published in the Supplement to the *Gazette of India.* It is requested that a copy of the new *Hyderabad Gazette* may be regularly furnished to this Office for the future, and that a translation of anything which may appear to the Resident to be worthy of the notice of the Supreme Government may also be sent as occasion requires.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 7 of 1870.



SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, FEBRUARY 12, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

Non-Subscribers to the GAZETTE *may receive the* SUPPLEMENT *separately on a payment of six Rupees per annum if delivered in Calcutta, or nine Rupees four annas if sent by Post.*

No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 4th February 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding.*
His Honour the Lieutenant Governor of Bengal.
His Excellency the Commander-in-Chief, K. C. B., G. C. S. I.
The Hon'ble G. Noble Taylor.
Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey, C. S. I.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
The Hon'ble F. R. Cockerell.

FEMALE INFANTICIDE BILL.

The Hon'ble MR. STRACHEY introduced the Bill for the prevention of female infanticide, and moved that it be referred to a Select Committee with instructions to report in a month. He observed that, when he obtained leave to introduce the Bill, he had said enough to show the Council the terrible prevalence

of the crime of female infanticide in Northern India, and to show the necessity for legislation to enable the Government to carry out its determination that this crime should no longer be borne with, and that it would spare no efforts to eradicate this abominable custom, which had been too long suffered to be a reproach to our administration. Although he would not repeat the facts he had then stated, there were one or two points which he had omitted to notice, and to which he would now briefly refer. One omission which he had made was this—that he had made no reference whatever, as he certainly ought to have done, to the noble efforts taken through a long series of years in the Bombay Presidency to suppress the practice of female infanticide in Katíawár and Katch. Although he was referring specially to the prevalence of this crime in Northern India, he felt that he ought not to have passed over in silence the fact that more had probably been done in the Bombay Presidency for the suppression of this crime than in any other part of India. An excellent account of the measures taken by the Bombay Government for the suppression of female infanticide had been published by the learned and accomplished Missionary of the Free Church of Scotland, Dr. Wilson. MR. STRACHEY might mention his work as containing a mine of information on everything connected with the subject. There was another point to which it had been his full intention to refer, but which he had forgotten. He had been reminded of the omission by more than one person. In consequence of the decrease in the number of female children, brought about by the prevalence of the crime of female infanticide amongst the Rájputs of Northern India, it frequently happened that it was extremely difficult for the Rájputs to find wives of their own caste for their sons. The want thus felt was not uncommonly provided in a very abominable way. There was a system under which persons who made a regular trade of the business kidnapped or purchased girls with the object of selling them as wives to these Rájputs. Children of lower castes were stolen or purchased and passed off as Rájput girls to men who wanted wives, and who were content to accept them with little or no enquiry. As long as it was not publicly known that the statement was certainly false, no objection was made. Besides this custom of kidnapping, which there was reason to fear to be extremely prevalent, there was no doubt that, in very many cases, girls of lower caste were sold voluntarily by their parents, in the belief, which no doubt was usually well-founded, that these girls would be kindly brought up and would ultimately be well married. An interesting account of this practice would be found in the Oudh Police Report for 1866, and he might refer in particular to the report of Captain Sharpe, an excellent Police officer in that Province, who had made careful enquiries into the subject. The Oudh authorities were satisfied that the practice MR. STRACHEY had been describing was extremely common. Girls from three to fourteen years of age were purchased from their parents by people, usually themselves Rájputs, who then gave out that the girls belonged to their own families. They looked out for some family where a wife was wanted, and the purchasers then got paid for the girls by Rájputs who wanted wives. Captain Sharpe referred in his report to one old woman, whose case was under investigation, who had followed this trade all her life, and said that she could not count the number of girls she had thus disposed of. This practice of kidnapping and selling children was one extremely difficult to deal with, but at the same time there was no reason to suppose that any special legislation was necessary for its suppression, and consequently there had been no reference to it in the Bill.

When MR. STRACHEY asked for leave to introduce the Bill, he said that, in regard to the remedies to be applied for the suppression of this great evil, there was fortunately no reason for doubt, because we had ample experience to show how the crime ought to be dealt with. The measures taken had been of two kinds—those which aimed at the removal of the cause which mainly led to the commission of the crime—that was to say, the prevention of extravagant

expenditure on marriages; and, secondly, measures of a coercive and directly preventive character. The present Bill proposed to give to the Local Governments power to carry out measures of both classes.

The Bill would enable the Government to lay down rules for regulating and limiting marriage-expenses amongst the classes who were found addicted to the practice of female infanticide. Although it might seem difficult to make rules on such a subject as this, still, as a matter of fact, it had been found that a great deal might be done in this direction; and this was rendered more easy by the fact that the people themselves were well aware of the folly of spending all this money on marriages, and when a little pressure was put on them by the officers of the Government, they were very glad to find an excuse for limiting their expenditure. The Bill further enabled the Government to order a complete system of registration of births and deaths in suspected places to be carried out, and a constant system of periodical inspection and enumeration of children. It had been found by experience that this had the effect of saving the lives of a great number of children; for, if a child was not killed immediately after its birth, and its life was saved even for a few hours, there was commonly little danger of its being killed afterwards. The Local Governments would have power to institute and maintain a system of registration of births and deaths in suspected places and amongst the persons to whom the proposed Act should have been made applicable; and to order the entertainment of special Police officers, or other officers and servants, for the purpose of making this registration or for carrying out any other of the provisions of the Act. The Bill further enabled the Government to levy from the parties concerned the whole expense incurred in carrying it into effect. The Bill, as MR. STRACHEY had already informed the Council, had been circulated to all the Local Governments and Administrations of Northern India, and it had received the approval of the whole of them.

He had hoped that the Council would have had, in the discussion of this Bill, the assistance of our colleague, His Highness the Mahárájá of Jaypúr. Unfortunately he had been compelled by illness to leave Calcutta; but although His Highness had been unable to take a part in the discussion of this measure in the Council, he had left behind him in writing a statement of his complete approval of the Bill, and of his determination to spare no efforts within his own territory to co-operate with the determination of the British Government to eradicate the practice of female infanticide. MR. STRACHEY was sure that he would do so, and it would be difficult to exaggerate the value of the assistance which the Mahárájá, one of the great Rájput Chiefs of India, would thus be able to afford in the suppression of this abominable crime among the people of his own class. With His Excellency the President's permission, MR. STRACHEY would read to the Council the remarks which the Mahárájá had made upon the Bill. He said—

"Speaking for myself, I fully concur with the spirit of the Bill introduced by my hon'ble colleague, Mr. John Strachey, for the prevention of female infanticide in the North-Western Provinces, the Panjáb and Oudh, and the measure has my hearty support. It shocks my feelings to think of the horrible crime which the Bill contemplates to suppress, and I pity those deluded individuals who, under a misapprehension of a sense of honour, are led, against their natural feelings, to sacrifice their own offspring to the altar of a revolting custom, which has no other authority than that of antiquity to support it. The Hindú *Cástras* are replete with ordinances as to the duties of a father to his daughter, and invoke the tenderest of all feelings for one's own offspring without distinction of sex. The shocking custom, therefore, which necessitates the men of my caste to murder their own infants—a custom which steels their hearts against the feelings of nature, and induces them to commit a crime which is even repugnant to instinct, has nothing to do with the religion of the people; and I for one would carry out the measure in such a vigorous way that the hateful practice may soon die out under the pressure of the law. The regulation of marriage-expenses, I believe, was introduced into my own territories by one of my ancestors, the Mahárájá Sivái Jay Singh, one hundred years ago, and I am still enforcing the same law in a modified form, which has had the effect, perhaps, of making it more rigorous; and I dare say that the introduction of a similar

measure within the British territories will be calculated to do infinite good to the British subjects. It is, therefore, with feelings of no little pleasure that I hail the introduction of the present measure in the Governor General's Council; and I have not the slightest doubt in my mind that the right-thinking and intelligent portion of my caste-men will never fail to appreciate the benefit of the law now contemplated, and will agree with me in looking upon the proposed enactment as a real blessing to them.

I am exceedingly glad to find that my hon'ble colleague has traced out the real causes which lead to the commission of infanticide in India, and I would beseech my own caste-people to co-operate with the Government of India in the suppression of the crime, and in dispelling the false and mistaken sense of honour which at present prevents a high-born Rájput from marrying his daughter to one inferior in rank in his own clan. If some of the Rájput chiefs of the day will take the initiative at the present moment, I dare say that the mistake operating so banefully in its results upon the Rájput community will soon disappear.

The call of humanity loudly demands the enactment of the present Bill, and in the interests of humanity I would heartily support it in all its stages through the Council.

Major General the Hon'ble SIR HENRY DURAND said that he was not at all surprised at hearing the contents of the paper read out by the Hon'ble Mr. Strachey and written by His Highness the Mahárájá of Jaypúr. SIR HENRY DURAND thought that it would have been a matter of very great surprise and regret if one who, he might say, had a hereditary right to take a leading part, had not stepped forward in the manner he had done to support the measure which the Government had brought before the Council. It must be a matter of great satisfaction to His Excellency to have the support of one of the leading Rájputs of India, a man whose family carried back its rise to about the third century of the Christian era, a family which had been ruling where it now ruled for 900 years, and who amongst its line could produce men who certainly, if any men in Indian history deserved to be remembered, were worthy of renown. It would perhaps be out of place for him to notice many of the great men who were ancestors of this very Mahárájá; but he hoped he would be allowed to note two instances: one was Mán Singh, the Commander of the Forces of the Empire, a man who conquered for the Emperor the whole of Orissa and Assam, who was, it might be said, the first Lieutenant Governor of the Emperor, for Bengal, Behar, and Orissa, who also ruled the Deccan, and who took up the armies of the Emperor to Cabul, and governed Afghánistán, maintaining order and tranquillity among the turbulent Afghán tribes. Such was one of the ancestors of the Mahárájá of Jaypúr, whom SIR HENRY DURAND brought forward as a man of note. And perhaps, if SIR HENRY DURAND were to consult his own professional feelings, there would be a tendency to give great weight to the abilities and fame of a man who at that time could maintain such sway in and out of India. But great as were the merits of this man, he could not say that he was inclined to regard him as the greatest of the ancestors of the Mahárájá of Jaypúr. There was another ancestor of his, the renowned Sívái Jay Singh, to whom the Mahárájá adverted as having first set the example of devising measures for the suppression of the crime of female infanticide, and who was known as a great Mathematician, a great Astronomer, and a great Engineer and Architect, but above all, as a most humane and intelligent ruler—one who, for these great qualities, was felt to be more than an ordinary man, and who obtained the name of *Sívái*, which meant in our idiom that he was a man and a half. Under such circumstances, with such an ancestor, SIR HENRY DURAND was not at all surprised to see the Mahárájá coming forward to support these measures. It showed that the old chivalrous spirit of his Rájput ancestors had not died with them, but still lived, when the Mahárájá of Jaypúr came forward in the way he did to uphold what was right, and to promise that he, the head of the Chuchwaha Rájputs, would make applicable to his own territories similar measures. There he had full and entire power to do as he intimated he meant to do; and SIR HENRY DURAND was sure that the Government of India would value extremely the co-operation of one circumstanced as the Mahárájá of Jaypúr was circumstanced. He would add that, some time ago, he observed

in the newspapers the reports of a Social Science Congress at Jaypúr, which was established by the Mahárájá. He (SIR HENRY DURAND) thought that perhaps there could hardly be a subject on which that congress could be employed with greater advantage than in connection with the suppression of female infanticide.

He was quite sure that the Mahárájá's example would have great effect amongst all the Native Chiefs of India; amongst the Rájput chiefs, not only of Rájputána, but of Central India, where the crime was more or less prevalent: there, it had been to a certain extent kept down; but still it prevailed, and there was little doubt that the example of the Mahárájá would tend to check the practice.

He need hardly say that he heard with great satisfaction the Hon'ble Mr. Strachey adverting to the labours of the Bombay Government in the suppression of female infanticide. SIR HENRY DURAND could almost wish that, when his Hon'ble friend quoted the work of Dr. Wilson, he had also quoted a part of the dedication of that work to a man who was one of the ablest, most honest, hard working, intelligent members of the Civil Service; he meant John Pollard Willoughby, who devoted himself to all that was right and good and for the benefit and promotion of the welfare of the Natives of India. With the permission of the Council, SIR HENRY DURAND would read, as the work lay before Mr. Strachey, an extract from Dr. Wilson's preface. After quoting the names of Duncan and Walker, he concluded with Willoughby, and said of him—"Willoughby, who ultimately suggested or adjusted the practical measures of inquiry, registration, review, reward and punishment, which, through the Divine blessing, have effected its extinguishment as a custom."

He (SIR HENRY DURAND) thought that the labours for the suppression of this crime on that side of India had been fully as great, and fully as continuous, as any we had attempted in Northern India. He was far from thinking that, either on that side of India or in Central India and Rájputána, or in Northern India, there had been as yet any adequate success; but he was certain that, with this law which His Excellency the Viceroy intended to pass, and which the Council would no doubt support, and with the support and example of the Mahárájá of Jaypúr and his noble-hearted ancestors, His Excellency might expect that this measure would be one of those which in future years would be looked back to as marking His Excellency's administration with one great commanding act of benevolence.

His Excellency the PRESIDENT said—"I have little to add to what has been so ably and eloquently said by my two hon'ble colleagues.

"The only regret that I have to express with regard to His Highness the Mahárájá of Jaypúr is this, that he is unfortunately not present today in order to declare his sentiments by his own mouth; but I am in a position to state that his absence from Calcutta has been occasioned by untimely illness.

"I hope, however, that this will be only temporary, and that, before long, we shall again have the advantage of his presence at this Council. I can only say with regard to what His Highness has done in this matter, that it is in conformity with the general course of conduct which he has invariably adopted, and more particularly since he has been a member of this Council. During the short time he has been among us, he has been able on more than one occasion to afford this Government valuable and practical assistance. The whole course of his conduct in reference to the treaty with regard to the Sámbhar Salt, which was undertaken by this Government entirely in the nterests of the people, in order to endeavour to provide at a cheaper rate one of the prime necessities of life, has been most praiseworthy. The assistance which he has given to us has been in all respects most cordial, and I believe

that assistance has been given with a sincere desire, not only to assist the British Government to maintain their revenue, but also to confer lasting benefits upon the people.

"It must be gratifying to the Mahárájá to have been able to state, as he has done in his letter today, that one of his distinguished ancestors, who was mentioned with so much feeling by my hon'ble colleague, Sir Henry Durand, was perhaps one of the first of Native Princes who made any endeavours to restrain this frightful practice of the murder of children by their own parents; and it is no shame to the British Government that, many years afterwards, they endeavoured by legislation to follow the same course as that which the Mahárájá's ancestor attempted to carry out more than one hundred years ago. I can only say that the Mahárájá's whole conduct in this matter shows what valuable assistance Native Chiefs and Princes, and rulers of this country, can give, when they are so disposed, to this Government, in their efforts to improve the general, social and material condition of the people; and we may cordially, I think, echo the sentiments expressed in the Mahárájá's letter, when we say that we feel with him that, in the efforts we are making now to abolish this abominable crime, we are conferring real blessings upon the people themselves—blessings which, I believe, the very people who are now engaged in this practice, will before very long be the first to appreciate.

"I believe, with regard to the Bill itself, that the mode in which it is proposed now to deal with this crime is the best and the most efficient that can be devised. It is a mode of dealing which is not calculated in any way to shock or to oppose the prejudices or feelings of the people themselves. It will be to a certain extent a gradual process, but I believe that its being gradual will not in any degree lessen its efficiency.

"I cannot help saying that, if the undertaking which we are engaged in today is successful, it will rank on a par with the abolition of suttee, thuggee, and other practices, in the suppression of which the British Government in India have been always engaged, and which I believe has tended more than anything else to vindicate the justice and wisdom of our rule."

The Motion was put and agreed to.

KULLU SUB-DIVISION (PANJAB) BILL.

The Hon'ble MR. STEPHEN moved that the Report of the Select Committee on the Bill for investing the Assistant Commissioner in charge of the Kullu Sub-division of the Kángrá District with certain appellate powers, be taken into consideration. The Committee had made no alterations and recommended that the Bill should be passed.

The Motion was put and agreed to.

The Hon'ble MR. STEPHEN then moved that the Bill be passed.

The Motion was put and agreed to.

HIGH COURTS (COSTS OF PETITIONS) BILL.

The Hon'ble MR. CHAPMAN moved that the Report of the Select Committee on the Bill to enable the High Courts at the Presidency Towns to deal with costs of petitions for certain monies transferred to Government, be taken into consideration. The Committee had made no alterations and recommended that the Bill should be passed.

The Motion was put and agreed to.

The Hon'ble MR. CHAPMAN then moved that the Bill be passed.

The Motion was put and agreed to.

MILITARY CANTONMENTS BILL.

The Hon'ble MR. COCKERELL asked leave to postpone the Motion which stood next on the List of Business, for leave to introduce a Bill to amend the law relating to Military Cantonments.

Leave was granted.

The following Select Committee was named:—

On the Bill for the prevention of female infanticide—The Hon'ble Messrs. Stephen, Chapman and Cockerell, His Highness the Mahárájá of Jaypúr and the Mover.

The Council adjourned to Friday, the 11th February 1870.

WHITLEY STOKES,
Secy. to the Council of the Governor General for making Laws and Regulations.

CALCUTTA,
The 4th February 1870.

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

EXPLORATIONS FOR COAL IN THE CHANDA DISTRICT.

No. 617, dated 11th January 1870.

From—T. OLDHAM, Esq., LL.D., *Supdt., Geological Survey of India,*
To—*The Secretary to the Government of India,* HOME DEPT.

I have now the honor to report, for the information of His Excellency the Governor General in Council, the progress which has been made in the explorations for coal now in progress in the Chanda District.

In my last report I stated that I had been, with much regret, compelled to send Mr. Longridge, one of the trained borers sent from England, into Nagpore for medical treatment. The medical authorities there entirely agreed with the Doctor at Chanda that he was unfit for work in this country, and that the sooner he went Home the better. Dr. Beatson, Civil Surgeon at Nagpore, had kindly admitted the man into hospital at Nagpore, and had been most attentive to his case. He believed that, in addition to the effects of exposure to the sun, there was some incipient derangement of the brain, probably consequent on a very severe blow on the head which the man had received some three years since. Dr. Beatson subsequently accompanied the man to Bombay, and never lost sight of him until he was safely on board the steamer.

This interruption, I endeavoured, as reported, to remedy as far and as quickly as possible by placing Mr. Smythe in charge of the tools. Mr Smythe, as I expected, very quickly acquired sufficient knowledge of the mode of working, and he has been for nearly three weeks past (he was nominated on the 10th December) in sole charge of one of the bore-holes, and has carried it out very successfully to its conclusion without accident or hinderance, and I have been so much satisfied with his work that I have again placed him in independent charge of a new boring just commenced at Bullarpore.

I have also to report with much satisfaction that both Mr. Smythe and Mr. Heppel, the second trained borer sent from England, have been, for some time past, at my request, working double shift with two gangs of coolies, so that the work is carried on without any cessation for 13½ or 14 hours a day, instead of 7 or 7½. The progress has consequently been increased in the ratio of about 7 or 7½ to 4. This has been done without the smallest difficulty on the part of either the men themselves or those superintending them.

The work, therefore, so far as the amount of progress is concerned, has not suffered by the absence of Mr. Longridge during the past month.

The results of the borings for the month have been most satisfactory, inasmuch as they have gone far to prove the existence of a large supply of fuel, ample to meet the demands likely to be thrown on this field for centuries, and have also proved the correctness of the views as to the structure of the field, which my short stay had enabled me to arrive at, so that coal has been found in the borings, within a few inches of the calculated depth, at places where its existence was entirely unknown and unsuspected.

It is scarcely necessary to give the full details of all the borings at present. I will state briefly the general results. At Googhoos (Ghúghús) a new bore-hole has been commenced, instead of that in which the 'pump' had formerly been stuck. This new hole has been carried down a little more than 130 feet, and has struck and cut into *coal* for some feet in thickness. It is still in progress. A boring at Nokora, about a mile still further to the south, has passed through 45 feet of rock, when the rods entered coal, below which the section gave as follows :—

	Ft.	In.	Ft.	In.
Coal	4	0		
Sandy shale with a tinge of Coal	...		2	10
Coal	3	6		
Dark sandy shale mixed with coal	...		5	4
Coaly shale (bad coal)	...		3	6
Black shale	...		16	10
Coal, inferior	...		4	0
Coal	...		5	0
Sandstone mixed with shale	...		5	0
Very dark shale	...		3	0
Dark sandy shale	...		2	10
Coal	21	8		
Sandstone white sandy shale	...		0	2
Coal	13	0		
White sandstone, very hard in parts	...		7	8

This shows a total thickness of coal, taking all the beds, of 42 feet 2 inches! I do not wish to convey the idea that there are 40 feet of *workable* coal, for a good part of this will have to be rejected from a mixture of earthy matter, but the mass of the coal stated above is quite as good as that already proved from the bank of the Wurdah at Googhoos.

The great source of doubt with regard to the productiveness of this field arose from the fact widely established that the thick coals of these lower beds varied very rapidly and within short distances, not only in amount, but in quality, so that a bed of good coal, many feet thick, would within a few yards, or a few hundreds of yards, pass into a thin bed of perhaps shale or even sandstone with no coal, and would again become productive further on. It was therefore of high importance that the continuity or constancy of the beds should be proved; and with this object, before leaving Calcutta, I had urged that borings should be prepared for at a sufficient distance to the north of the known localities to test this fact of continuity. The rapid visit I paid immediately on my arrival in the field to the localities confirmed this view, and led to the selection of two points in the village grounds of Telwasa, about nine miles to the north

of the other borrings. Being satisfied that the geological evidence was conclusive, and that, whatever variation they might exhibit, the same group of beds as contained the coal to the south must be met, I had the borings put down. The result is, I think, the most important one yet attained. Within a few inches of the calculated depth the coal was struck, and, up to the evening of the 8th instant, 30 feet of coal, with shaly partings, had been cut through. This boring is still in progress.

I consider this the most important result yet attained, because it has not only proved the constancy of the deposit of coal (with variation as was anticipated), but has confirmed the accuracy of our geological views of the structure of the field, and has given great confidence in searching for coal elsewhere on the same horizon.

Another boring was simultaneouly started near this to test the lower beds. No coal was looked for in this; it was put down to ascertain the nature of the beds, which were here covered and unseen. It has been carried down about 140 feet, and will be stopped at 150, if it does not get into another series of rocks before that. No workable coal has been found as was predicted.

Meanwhile, I have carefully fixed on other localities, at which bore-holes will be put down as soon as the rods are disengaged at any of those holes now in progress, and I am at the present carefully examining the country further to the south with the same object in view, so that no time may be lost in moving the boring-tackle whenever ready.

I have great pleasure in reporting that every day's experience, now extending over two months nearly, has increased my confidence in the skill and persevering energy of Mr. Heppel. He is a remarkably steady, quiet, hard-working man, thoroughly up to, and interested in, his work, and willing and anxious to push it on.

Mr. Smythe, as I have said, has already proved a very efficient assistant, and I doubt not will rapidly become more so.

A steam-boring machine has been delivered at Chanda to the Deputy Commissioner, but from want of any one competent to undertake its management and working, it has not as yet been set up. The great difficulty experienced in bringing this machine from Nagpore, in parts and in cases (five days were occupied in getting across one small nullah), along a made-road, has, I think, satisfied the Deputy Commissioner that it will not be practicable to use it at many places in the district which is much covered with jungle, and is without any roads other than the common country cart tracks. In reality, every information that can be obtained by means of this machine can be obtained quite as economically and quite as quickly by the boring tools now in use. I shall see that it is got to work as soon as possible, and trust it may prove more useful than I anticipate.

In connection with these researches, I have again to notice the ready aid we have received from the Deputy Commissioner, Major Lucie Smith, and also the hearty co-operation of Mr. S. H. Hennessy, Extra Assistant Commissioner.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

SANCTION OF SECRETARY OF STATE REQUIRED TO LOAN IRRIGATION WORKS COSTING OVER £100,000 EACH.

No. 35 A. I., dated 2nd February 1870.

RESOLUTION—By the Govt. of India, P. W. DEPT.

Read the following paper:—

P. W. D. Circular No. 94 of 1867.

Also the following Telegram from Secy. of State, dated 10th August 1869:—

We adhere to our rule that no irrigation works to be met by loan are to be undertaken without detailed plans and estimates previously sanctioned by me, but under this condition we do not object to your making such plans and surveys for work which may cost two millions, twice one million, in the year 1870-71.

Read also despatch:—

No. 115, dated 30th August 1869, from the Govt. of India, to the Secy. of State for India.

Also the following despatch from the Secy. of State, No. 116, dated 25th November 1869:—

I have had before me in Council your Excellency's Despatch No. 115 of 30th August last, requesting reconsideration of the intimation recently conveyed to you that no irrigation works to be met by loan should be undertaken without previous sanction by the Secretary of State of detailed plans and estimates.

2. Your Government seems to me to have misapprehended those expressions in despatches from Lord Cranborne and myself to which you refer, as having caused it to consider that full authority had been delegated to it of determining the works to be carried on by loan. Lord Cranborne's language, in one of the despatches quoted, seems to me to be distinct in a directly opposite sense. "It is not necessary," he says, "to consider the means of providing funds for projected works until propositions, with detailed plans and estimates, shall have been fully considered by you, and have been approved by me." Without, however, dwelling further on this part of the subject, I will state briefly the rules with respect to the sanction of irrigation works designed for construction with borrowed funds which I desire should be observed in future.

3. There does not appear to me to be any sufficient reason for treating such works differently from irrigation works intended to be provided for out of ordinary revenue, and I propose, therefore, that you should be vested, with respect to the former, with the same independent powers of sanctioning estimates not exceeding £100,000 each as you already possess with respect to the latter. All works, however, the estimates for which may exceed £100,000, will continue to require my sanction, and no operations based upon them must on any account, or in any instance, be commenced until that sanction has been obtained. But in order to be enabled to judge of the expediency

of any project, I shall no longer require to be furnished with detailed plans and estimates. One or more general plans, accompanied by reports in such detail as will clearly explain the character, objects, and financial prospects of the projected work, will in most instances suffice, and I apprehend that more elaborate plans will scarcely ever be requisite than the lithographed copies alluded to in your concluding paragraph.

4. Your Excellency will recollect that the necessity for the previous sanction of the Secretary of State, on which I have above insisted, has been distinctly admitted in para. 18 of your Government Resolution of 21st September 1867. The reasons which render it desirable that the Indian Government should reserve to itself the power of deciding on projects orginating with the subordinate Governments are there admitted to apply equally to the Home Government in its relation to the Indian Government.

RESOLUTION.—It will be observed from the papers now read that the Secretary of State has ruled that, as in the case of other works, his sanction is requisite to the commencement of all irrigation works the estimated cost of which may exceed £100,000 each.

2. In publishing this decision, the Governor General in Council desires to impress upon the several Governments and Administrations the necessity laid on all concerned for not allowing any extraordinary irrigation work to be commenced until the project has been regularly approved and sanctioned by proper authority in each case.

ORDER.—Ordered, that this Resolution be communicated to the several Governments and Administrations noted on the margin for information and guidance.

Governments of Madras, Bombay, Bengal, N. W. Provinces and Punjab; Chief Commissioners of Central Provinces, British Burmah, Oudh, and Mysore.

Ordered also, that a copy be published in the Supplement to the *Gazette of India*.

AGRICULTURAL OPERATIONS IN THE CENTRAL PROVINCES DURING 1868-69.

Book Circular No. XLV, dated Nagpore, the 26th November 1869.

From—C. GRANT, Esq., *Secretary to the Chief Commissioner, Central Provinces,*

To—All Commissioners and Deputy Commissioners, Central Provinces.

The attempt for the first time made this year to compile agricultural statistics in the form prescribed in this office Book Circular CIV of 1868, has been on the whole not unsuccessful, though it has been necessary to omit from the calculations the district of Sumbulpoor and the feudatory States, owing to the impossibility of obtaining reliable information from them. It will be impracticable to obtain the necessary statistics from Sumbulpoor until a regular

settlement has been effected, and feudatory States must always be left out of such calculations. The area thus excluded is 32,461 square miles of the total area of 111,121 square miles comprising the Central Provinces. The omission is, however, not so important as at first sight it would appear to be, for of the excluded area, some 20,993 square miles are estimated to be waste, hill, and forest.

2. The tables in the appendix, therefore, refer to 18 of the 19 districts of the Central Provinces, inclusive of all maâfee and quit-rent paying estates, and the following remarks will refer to the sub-divisional headings of the returns as nearly as possible in the order in which they present themselves.

3. Before proceeding further, it will be necessary to notice briefly the rain-fall of the year. In the previous season (1867-68), there was, generally speaking, an excessive rain-fall, and heavy showers late in the spring did some damage to the wheat and cotton crops. In the season under review, the rain-fall was much below the average, and though there were places, like the lower Nerbudda Valley and the southern pergunnahs of Raepoor, which lost little of their usual supply and reaped a full average crop, the country generally experienced a severe drought. In many places the rain was not sufficient to fill or even half fill the tanks, most of which dried up long before the first heats of summer. Many wells, too, that were never known to have failed, completely dried up. Still, on the whole, though garden cultivation suffered considerably, with rice, sugar-cane, opium, and other irrigated field crops, there was but seldom an absolute want of water for drinking, even in the dryest months, though it was not perhaps so readily obtainable and very often at inconvenient distances for herds of cattle.

4. The Table A in the appendix gives the rain-fall for each district for each month of the year, and if the average of ordinary fair seasons be accepted at 45 inches, the falling off has been 17 inches in the year under review. The following extracts will best illustrate the main features of the monsoon of 1868. In the Nerbudda Valley, which suffered least, the Deputy Commissioner of Nimar writes, when accounting for an increase in his rice cultivation, that it was owing "to the copiousness of the early fall of rain, which enabled rice to be sown in many places not available in moderate seasons for that crop. Nimar escaped the effects of the capricious rain-fall of the past season very well. The Nimar soils are peculiarly suited to khureef crops, and nothing but an almost total absence of rain does any excessive mischief." The adjoining district of Hoshungabad is, on the contrary, a rubbee country, and here, "thanks to some heavy showers which fortunately visited it in September, and again in December, an average harvest was reaped; the continued absence of rain in the early part of the monsoon caused the gravest apprehensions, which, but for the opportune fall of rain in the months noted above, would undoubtedly have been verified. As it is, however, the year, if not one exactly of plenty, has not been, as in so many other districts, one of distress." In Chuteesghur, again, the Deputy Commissioner of Raepoor writes that "the drought after all was only partial. Considerable tracts had almost an average harvest, while other tracts reaped nothing. For instance, the Dhumterry or southern pergunnah scarcely suffered at all, while the Droog pergunnah and the western sections of the Raepoor and Simgah tehseels had a fair out-turn, the high lands chiefly suffering. In contrast to this the eastern section of the Raepoor and Simgah tehseels suffered very severely, many villages having no khureef harvest at all." It was much the same in the adjoining Belaspoor district. But capricious as the rain-fall would appear to have been in circumscribed localities generally, it may be said that the autumn rains, deficient everywhere, fell more copiously in those districts where the autumn crops are most plentifully raised, and the spring showers where the rubbee predominates. Had it been the other way, the harvests might have been much worse than they were.

Classification of Land and Crops.

5. Table B. in appendix gives the information under this heading for each district, and may be thus abstracted:—

Total area of the Province			50,865,135 Acres.
Barren			21,032,695 ,,
Cultivable	Jageer or not paying revenue		1,676,189 ,,
	Cultivable not cultivated		14,391,117 ,,
	Fallow of one year		1,413,264 ,,
	Under crop, *viz.*:—		
		Khureef	7,189,080 ,,
		Rubbee	5,162,790 ,,
			29,832,440

or in other words the land under the plough is about one-half of the whole cultivable area, which again is to the total area in the proportion of 3 to 5.

6. It may appear singular that in a year of drought the cultivated area should thus be returned as slightly in excess of that given for the previous season; but the explanation is that the non-completion of settlement operations in Mundla did not admit of the statistics for that district being included in the returns for 1867-68, and similar information for certain large non-feudatory zemindarees was also not then available in the necessary detail; all this has now been added. Another reason is, that the lateness of the monsoons induced farmers to break up as much land as they could before the heavy rains stopped plough operations; and then in the spring, when the rains had mostly failed them, and all hope of recouping themselves lay in the rubbee sowings, the fine open weather again enticed them to sow a larger breadth with wheat, gram, pulses, oilseeds, and the like,—with a result which will be noticed further on.

7. In analysing the figures showing the cultivated area as they stand, it will be seen that the proportions of cultivated to cultivable land for the Province generally differ widely from those for certain districts. Thus in Chanda, Mundla, and the Upper Godavery, cultivated land ranges from a fourth to a sixth only the culturable area. Not far behind are Nimar, Raepoor, and Chindwarra, which have about one-third cultivated;—and the only districts whose cultivated area exceeds, but very slightly exceeds, the proportion deduced for the Province as a whole, are Nagpoor, Bhundara, Wurdah, Seonee, Hoshungabad, and Nursingpoor,—the corn-growing district of Hoshungabad heading the list in this respect.

8. Further examined, this cultivated area will be seen to consist more largely of khureef than of rubbee sowings for the Province as a whole, the proportion being as near as possible as 7 is to 5. In Balaghat and the Upper Godavery the sowings may be said to be almost entirely khureef, but the largest khureef growing district is Belaspoor and the next Raepoor. In other parts of the country the khureef comprises rice and jowar, the latter generally predominating, but here jowar is unknown, and the two million acres under khureef in Raepoor and Belaspoor are mainly sown with rice. After these two districts come Bhundara, Wurdah Chanda, Balaghat, Mundla, and Nimar; jowar, pulse, and cotton here sharing largely with the rice, or, as in Wurdah, almost entirely excluding it. On the other hand, the principal rubbee growing districts are Hoshungabad, Nursingpoor, Saugor, and Dumoh, in which wheat, gram and other pulses are the chief products. In Nagpoor, Jubbulpoor, Seonee, and Baitool the sowings of either kind are pretty equally balanced. But if Raepoor has been above classed with Belaspoor as one of the largest khureef districts, it will be seen that it is also next to Hoshungabad, one of the largest rubbee districts. Statistics thus prove the truth of the popular assertion that Chuteesgurh is the grainary of the Nagpoor and Berar country, while the Nerbudda Valley supplies with food the people of Central India.

9. There appears to be still some misunderstanding by district officers of the details required under letter G of Table I. For instance, the total cultivated land under "bárání," or not irrigated, is given at 12,161,821 acres, and that under "ábpáshí," or irrigated, at only 190,019 acres; from which it may reasonably be concluded that much of the rice cultivation, irrigated from tanks and other artificial means, has been omitted under the latter heading, and irregularly shown as "bárání." This point has been noted by the Commissioner of Nagpoor in the remarks on the Bhundara report, and as in that district a large area is under rice, the defect in the returns is material. The same defect probably exists in the Raepoor and Belaspoor returns. On the other hand, there seems to be more land included in the Balaghat returns as irrigated, than, from the description given by the Deputy Commissioner, would ordinarily be thus classed. He explains the system thus:—"a 'ghatia' is a field surrounded by very high bundies; in it water is allowed to collect during the rains, and is drained off into the neighbouring rice-fields at the end of the rains. After the ghatia becomes dry, it is ordinarily sown with wheat or gram." A similar practice prevails in other districts, and besides the utilisation of the temporarily stored waters, it has the advantage of preventing the growth of the kans grass on the land submerged; but such land is not ordinarily classed as irrigated. It should therefore be generally understood that all land watered, during either the khureef or rubbee seasons, from permanent tanks and wells is to be returned as irrigated, and all else as "bárání" or not irrigated. The Chief Commissioner trusts that the next year's returns will be accurate in this respect.

10. The information regarding the khureef and rubbee area in each district, above remarked on, will be found in fuller detail in the next following Table (C) in appendix, the area under rice, cotton, wheat, oilseeds, jowar, &c., being given for the autumn and spring sowings respectively. It will be seen that in Belaspoor, Raepoor, and Bhundara, rice is most cultivated; kodoo and kootkee in the hill districts of Baitool and Mundla; cotton in Wurdah and Nagpoor; jowar in Nagpoor and Wurdah; wheat in Hoshungabad and Saugor; opium in Baitool and Chindwarra; sugar-cane in Raepoor, Bhundara, and Baitool; and so on. For the whole Province the percentage under each description of crop may be thus stated:—

Khureef	Rice	... ...	24 per cent.
	Kodoo and kootkee	.. ..	9 „
	Cotton	... .	5 „
	Jowar and bajra	... ...	12 „
	Oilseeds	... ...	3 „
	Dal and pulses	... ...	2 „
	Others	... ...	3 „
			—58
Rubbee	Wheat	... ...	25 „
	Gram and pulses	... .	7 „
	Tobacco	... .	0 „
	Oilseeds	... ...	4 „
	Others	... ...	5 „
			—41
Do. fusli crops	Sugar-cane and vegetables	... ...	1 „
			—1
			100

This again may be shown in a more abstract form, thus:—

Land occupied by food grains	... ...	79 per cent.
Cotton	... ...	5 „
Oilseeds	... ...	7 „
Others	... ...	9 „
		—100

11. To turn now to the actual out-turn of the year. The opinions of certain of the district officers themselves will be seen from the following brief extracts from their reports:—

Nursingpoor.—"Long-continued droughts damaged the khureef crops, with the exception of cotton, and later the absence of rain after the sowing time was very detrimental to wheat and all the pulses, except gram."

Jubbulpoor.—"The season has been exceptional in the way of drought all over the district; in the northern tehseels the failure of both khureef and rubbee was most complete." The out-turn of wheat "was very small, only 1 maund and 27 seers per acre; this, calculating the seed at 1 maund 10 seers per acre, may be called a total failure." Kodoo and kootkee "may be called a complete failure;" and rice yielded "under 9 seers per acre." These three crops on which the people "trust for their living have been complete failures during the past year, and in the northern tehseel it may be said during the past three years. The totals of the two Tables II and III, if compared, show that over an acreage of 798,967, a produce of only 1,104,125 maunds have been collected of all kinds of grain."

Bhundara.—"The average produce per acre in maunds for the past and previous years is given below:—

	Maunds.	Seers.
In 1867-68	7	25
„ 1868-69	4	9
Loss ...	3	16

The decrease in production is considerable. This is solely owing to the past unfavorable season."

Nagpoor.—"All things considered, the crops were fair during the past year. The rice and ulsee suffered in many places, but the wheat, jowaree and cotton were good."

Wurdah.—"The season 1868-69 was favorable for cotton, and bad for all spring crops, while the circumstances of 1867-68 were just the reverse. With regard to jowaree, in the rich blacksoils the produce has been unusually good, but these bear a small proportion to those of the lighter kind, and the out-turn of these has been very little. Of wheat people go so far as to say that only $\frac{1}{8}$ of the usual crop was realized; while not agreeing entirely with this statement, I feel convinced from what I have myself seen that the out-turn generally has been far from favorable. * * The linseed crop throughout the district has been an entire failure."

Raepoor.—"The produce is much below the average yield, owing to the failure of the regular monsoon and the consequent drought, from which so considerable a portion of the district suffered. Opinions may differ as to the actual average struck in each case, because, as regards rice, which is to so large an extent the staple crop of the district, there have been great fluctuations in the yield, ranging from an average return in many villages of the Dhumterry pergunnah to no yield at all in parts of Lown. On the high lands every where the yield was nothing or next to nothing, and in the north-eastern section of the district the lowlands also gave no return. The failure seemed at one time so serious as to raise fears whether the people could tide over the difficulty without an extensive importation of grain from other quarters. It is not too much to assert, situated as Chuteesgurh is, with so considerable a population, that the deficiency could not have been met by importation. The surplus grain stock of previous years has saved the people. The annual crop was nearly thirty lakh maunds short of what was actually required by the lowest calculations for local necessities, a half of which it would have been difficult to find carriage for had the necessity for importation arisen. The spring crops suffered less than the khureef sowings, though the failure of the

latter rains diminished the area taken up. In the southern and western pergunnahs the yield was fair, but the return was poor over a considerable portion of the Raepoor and Simgah tehseels." Of gram and other pulses, "the yield on the whole has been fair. Oilseeds too have generally given a fair return. The cotton out-turn was fair."

12. So chequered has been the result everywhere, that any estimate of the total aggregate out-turn must be only very approximate. As such, it may be stated as follows :—

Rice	10,658,800	Maunds.
Kodoo and kootkee	4,305,920	,,
Jowar and bajra	5,361,140	,,
Wheat	13,271,010	,,
Pulses	5,418,400	,,
Sugar (goor)	607,800	,,
Vegetables	526,200	,,
Cotton (kupas)	1,397,550	,,
Oilseeds	2,038,720	,,
Tobacco	48,570	,,
Others	1,732,790	,,

13. The average produce of rice in a good season may be stated at about 7 maunds per acre, but in the season under review it is reported to have averaged in one district 2 maunds, in another 3 maunds, in another 5 maunds, and so on, making the average for the Province about $3\frac{3}{4}$ maunds only,—a loss of some 46 per cent. In kodoo, kootkee, and jowar, the food of the aboriginal tribes and poorer classes generally, the loss has not been so great, averaging only some 26 per cent. of the out-turn of a good season. In wheat it was still less, averaging about 18 per cent. due mainly to the fair yield in Hoshungabad. And thus, taking all food-grains, the loss of the year may on the whole be roughly stated at about 30 per cent.* The falling off in oilseeds has been very slight. And as regards cotton, the out-turn has been as high as in an average good year, notwithstanding the total loss of the crop in districts where it is not much cultivated. The sugar-cane, so dependent as it is on irrigation, suffered severely in the spring, when, approaching maturity, it requires much moisture, and got little. The greatest loss has thus been mainly in food-grains, but the effect of this loss has been different on different sections of the community. To quote the words of the Deputy Commissioner, Raepoor—"The effect on the agriculturists has been in inverse ratio to their means,—the rich having become richer and the poor poorer. The landholders, as a body, and the better class of ryots, have realised large profits from the enhanced prices. The price of cereals has ranged nearly four times as high as in the preceding year, so that those who had a surplus stock or a fair crop have been immense gainers. On the other hand, the poor landholders and the class of struggling ryots with no surplus, little property, and a deficient crop, have been reduced to great straits. Perhaps from 5 to 10 per cent. of the proprietors and 20 to 25 per cent. of the ryots would come under this latter description. As a body, the agricultural laborers suffered most. They are always an impoverished class in this district, having no means, and living with their families from hand to mouth on grain advances. These stopped when the crop failed, and the suddenly dismissed hands have only been kept alive by the relief works started under the orders of the Chief Commissioner." The position was much the same in the district of Belaspoor north, and in Bhundara west of Raepoor, and again in Chanda south of Bhundara—all large rice-growing tracts, supporting an aggregate population of $2\frac{3}{4}$ million inhabitants. It was also much the same, and in circumscribed localities even worse, in the trans-Nerbudda parts of Jubbulpoor, Dumoh, and Saugor, having a population of 1,382,000 souls.

* The area sown, it will be remembered, was a little larger than in the previous year as explained in para. 6.

14. The attention of the Chief Commissioner was directed early in the year, when the prospects of the khureef were growing daily from bad to worse, to the subject of food-supply, and information was collected from all available sources of the extent of reserve food stocks then in the country. Thereafter, weekly and fortnightly reports were received from all districts of the general state of the crops, the harvests, the prices current, imports and exports of grain, from all which not only was the fullest possible information obtained at head quarters of the actual state of affairs, but the executive officers were also enabled to determine where relief measures would be necessary. It would be difficult to present in this report the food resources of each district individually, but it may be possible to do so with some approach to accuracy for groups of districts corresponding with the three geographical divisions into which the Province has been mapped out for the purpose of registering exterior trade imports and exports, *viz.*, the Nagpoor group of five districts, the Chuteesgurh group of four districts, and the Nerbudda group of ten districts.

15. First, then, as regards the reserve stock of grain in hand at the beginning of the year. These figures, arrived at after an examination of the agricultural and trade statistics of the previous two years, supplemented by local enquiry, show that the production of food grains in the year 1866-67 was, for the entire Province, nearly 58 million maunds, or, for the three separate geographical divisions, as follows :—

	Population.	*Maunds—food-grain.*
Nagpoor Circle...	2,299,565	17,373,000
Chuteesgurh Circle	1,706,922	14,798,000
Nerbudda Circle	3,513,591	25,790,000

16. At 1lb. of grain per head, including infants with adults, which would be a fair average daily consumption, this production would leave a surplus in the Nagpore Circle at the close of the year (after adding imports and deducting exterior trade exports, and excluding an additional ninth for seed-grain) of $5\frac{1}{2}$ months' consumption, in the Chuteesgurh Circle of $5\frac{1}{2}$ months', and in the Nerbudda Circle of $5\frac{2}{3}$ months'. In the following year the wheat harvest was slightly injured by late heavy rains, and the total production may be put down at about $52\frac{1}{2}$ million maunds as follows :—

	Maunds—food-grain.
Nagpoor Circle	15,495,000
Chuteesgurh Circle	14,798,000
Nerbudda Circle	22,258,000

which, after deducting trade exports and adding imports, and allowing for seed-grain, should have left a surplus at the close of the year, in the Nagpoor Circle of 4 months' consumption, in the Chuteesgurh Circle of $4\frac{1}{2}$ months,' and in the Nerbudda Circle of $2\frac{1}{2}$ months.'

17. The surplus of these two years thus deduced at the opening of the year under review, would then have been—

	Maunds—food-grain.		
In the Nagpoor Circle ...	7,761,032	= $9\frac{1}{2}$	months' consumption.
,, Chuteesgurh Circle ...	6,400,957	= $9\frac{1}{2}$	,, ,,
,, Nerbudda Circle ...	9,881,974	= 8	,, ,,

or for the Province as a whole, there should have been sufficient for 9 months' consumption in hand when the year opened on 1st April 1868.

18. The total produce of the year 1868-69 in the three circles, after allowing for exports and imports, was—

	Maunds—food-grain.		
Nagpoor Circle	10,510,794	= $12\frac{1}{2}$	months' consumption.
Chuteesgurh Circle ...	9,876,563	= $15\frac{1}{2}$	,, ,,
Nerbudda Circle ...	18,585,120	= 14	,, ,,

19. At first sight there would thus appear to have been ample provision in store at any time during the year under review; but apart from the consideration of the extent to which it was made up by exterior importation in the Nagpoor and Nerbudda Circles, it has to be remembered that the surplus at the beginning of the year (April 1868) and the production of the year, after adding and deducting exterior imports and exports, was not for a twelve months' consumption agreeing with the official year 1868-69, but actually for a consumption of 20 months, or from April 1868 to the ingathering of the khurreef harvest in November and December 1869. How little the food of the country was in excess of its requirements will appear if, keeping in view the number of months for which provision was to be made, we add the surplus and production of the three years together, thus :—

Nagpoor Circle	22	months' consumption.
Chuteesgurh Circle	24½	,, ,,
Nerbudda Circle	22	,, ,,

That such was really the case, there can probably be little doubt. For the two seasons previous to 1866-67 were bad years, and any old surplus then in hand must have been small. The surplus of the two seasons before 1868-69 could hardly have been more or less than that deduced from all the agricultural and trade statistics available. As has been said above, the consumption per head of population has been taken at 1lb. all round. All additions and deductions from the stock by exterior importation and exportation have been made. And the result is a very small surplus in November 1869 over and above the requirements for seed grain. Opinions will probably differ as to the existence of old stocks in the wealthy centres of commerce, but even if allowance were made for these, they would comparatively be so small that the general provincial result would be very slightly improved. The price current lists of the last few months afford strong proof of the exhausted condition of the food-market; and only now when the khureef of the year 1869-70 is being reaped, prices in the Mofussil towns for rice show but slight improvement, while for all rubbee grains the tendency is rather the other way. In short, the preponderance of evidence is in favor of the approximate accuracy of the average results above deduced.

20. But an average result after all proves very little, and is practically of little value, for while it is true that there was grain sufficient in the Nerbudda Circle to feed all its population for even a month or two after the present year's khureef harvests were brought to market, that grain was mostly in the district of Hoshungabad,—many miles from Saugor and Jubbulpoor and other large centres of consumption, with no good roads or means of transport between them. It is notorious that Hoshungabad and Nursingpoor not only fed all the neighbouring populations in our own territories, but sent thousands of maunds to Berar and Bundelcund in foreign territory.

Agri-Horticultural Experiments.

21. Some experiments were made in the Wurdah district, both at Wurdah and at Arvee, with potatoes, but they failed. Some flax grown in the district obtained a reward at the Akola Exhibition, the fibre varying in length from 4 to 5 feet.

22. The potatoe experiment at Chindwarra and Moohtoor also failed; the crop was a short one, and the size of the tuber little greater than that ordinarily grown in the district; but as the peculiarly dry season and late arrival of the seed may have caused the failure, another experiment will be made. Lucerne seed was distributed to the malgoozars, in the hope that its cultivation would become more general, but the grass requires too much watering to be popular. Some arrowroot was introduced into the Lall Bagh at Boorhanpoor, and a small quantity was successfully manufactured.

23. The introduction of Hingunghat cotton into Nimar was not such a failure last year as at first supposed. Improvement in the cotton of the Taptee Valley is already visible, and the landowners have re-sown the seed raised from Hingunghât seed sown in the district. A fresh supply of Hingunghât seed has been sent to all districts in the Nerbudda Valley.

24. In Chindwarra the American cotton trees have so greatly deteriorated that a succession of crops is not to be hoped for, nor was it considered worthwhile to take any more care of them.

25. In Balaghat a series of experiments in potatoe cultivation met with a fair measure of success. The Otaheite sugar-cane came to maturity at the proper season, and answered the most sanguine expectations of the malgoozars to whom it had been given for trial, the cane produced being twice the size of the indigenous sugar-cane. The cane now planted in the garden at Balaghat will be given out for trial to malgoozars and cultivators.

24. In the gardens at Nagpoor, under the management of the Local Committee, 76 seers of Hingunghât and 38 of Dharwar cotton seed were sown, the out-turn being 811 of the former, and 206 of the latter.

25. In the Raepoor garden an experiment with Indigo seed was made, but it failed from want of water. Four seers of Englisl oats gave a yield of 26 seers.

26. In Belaspoor the rice experiments were a failure, but the Otaheite sugar-cane proved a success, and may now be considered as fairly introduced into the district.

27. In Sumbulpoor some excellent potatoes were raised in the small garden near the Cutcherry from seed produced the year before from Nagpoor seed. A good crop of oats was also raised from seed received from Hissar; the best plants were about 3 feet high.

28. The experiments in Mundla with exotic cotton was more successful than in the preceding year; from one seer of cotton planted in the public garden, 16 seers of seed cottor was obtained, which gave 5 seers of ginned cotton. Some experiments with tea and coffee met with no better success than in the previous year.

29. In Seonee the cotton formerly planted has continued to yield a plentiful and good crop; the picking sold for Rs. 10, or at the rate of Rs. 40 per acre. An endeavour is being made to obtain some Rhea, or China grass seed, with which to make experiments.

30. In Chanda some coffee seed received from Mysore was planted in the public garden and was beginning to germinate; but an experiment with potatos received from Bombay was not successful. Some sandal-wood and coffee seed and potatoes were supplied to the zemindars of Panabaras and Jurapapra. Some Carolina rice seed was distributed among some landowners in the Wurdah and Wynegunga Valley, but owing to the failure of rain, the crops were destroyed, except in Koorza, where 3 seers produced 64½ seers of paddy and 62½ seers of straw.

Sheep Breeding.

31. In the Nagpoor Sheep Farm at Telinkheree, on the 1st April 1868, the stock was 4 Patna rams, 3 Punjab rams, 1 English ram and 5 ewes, 272 country ewes and lambs, and 36 half-bred lambs. Twenty Punjab rams were purchased during the year; 211 half-bred lambs were born; and of these, 34 died.

32. Since the close of the year a new system has been introduced, a small breeding stock only, for the production of good rams, being now kept up.

33. In Dumoh, at the close of last year, there remained 69 rams and 253 ewes. Thirty-four sheep were sold; there were 161 births and 51 deaths; of these, 39 were old ewes and rams, and the remaining 12 were lambs, leaving 398 remaining at the end of the year. The expenses of the farm were Rs. 210-7-9, and the receipts Rs. 151-4-0, leaving Rs. 59-3-9 as the actual cost of the farm for the year. Five maunds and a half of wool realized Rs. 106.

34. At Jubbulpoor, out of the 12 rams brought down by Mr. Jones, 11 were made over to different landowners in the district; and of these, 5 have died, as also 3 lambs, their produce. The landowners have taken so little care of the sheep that they have been taken back. The attention of the people has been drawn to the pamphlet on the subject, the instructions in which appear most valuable, if the people would only act up to them.

35. In Saugor the two rams remaining at the end of last year at the Saugor Tehseelee have not been able to serve at all. It is stated that the sheep of the country will not let the rams come near them. The two rams at Khoorye died during the year.

Cattle Breeding.

36. In the Nerbudda Division there are only two Government bulls,—one Nellore and one Hissar. The latter at Nursingpoor is herded with the cattle, and is reported to have served 18 cows.

37. In Baitool there were no results, the people considering the bull too heavy for the cattle of the country.

38. At Nagpoor the Local Committee have come to the conclusion that the Hissar bulls are next to useless for breeding purposes, and their sale has been sanctioned.

39. At Bhundara the two Hissar bulls served 19 cows during the year, but the complaint that they are too large for the indigenous cows of the country is universal.

40. At Sumbulpoor there is a fine Nellore bull, and it is reported that his breed is already showing itself in the cattle about the sudder station. The cows of the district are, however, so small that it is only about 1 in 50 that he can cover.

41. At Dumoh there are five bulls, three of which are kept in the Dumoh Tehseelee and two at Huttah. The services of the former were put into requisition 50 times, the latter 20 times. They are, however, too large for the cows of the district.

42. In Chanda 35 cows were served by the bulls at Chanda, Wurrora, and Berhampoorce.

43. In Jubbulpoor the four Hissar bulls served 18 cows.

44. There are seven bulls in the Saugor district,—three Hissar and four Mysore; they served 193 times. The reasons given for their services not being more sought after, are that there are other bulls in several parts of the district, and that owners of cows do not like going long distances to the tehseelee. Probably the system of herding the bulls with the cattle might be advantageous.

Horse Breeding.

45. Government stallions were only kept in the districts of Hoshungabad, Nursingpoor, Nagpoor, Bhundara, Dumoh, Jubbulpoor, and Saugor.

46. In the Nerbudda Division there are two stallions at Hoshungabad and two at Nursingpoor. The number of mares covered during the last three years may be thus shown:—

	1866-67.	1867-68.	1868-69.
Hoshungabad, mares served ...	19	28	55
Nursingpore, ,, ...	11	68	42

The falling off in Nursingpoor is attributed to one of the stallions being not fit for the purpose, and consequently his services are not so much fancied. The Deputy Commissioner reports that he has seen some of the foals, and that they look very promising. The progressive increase in the number of mares served in the Hoshungabad district is satisfactory.

47. At Nagpoor the services of the stallion were not sought for so much as in the previous year. It is in contemplation, however, to send him now and then to the Wurdah district, where his services may probably be taken advantage off.

48. In Bhundara there is a very good little Arab stallion; the number of mares served was 25 as compared with 13 in the previous year. It is reported that of the mares served last year, 5 have produced promising stock.

49. As reported last year, the stallion at Dumoh was found to be too old, and was consequently sold. He has been replaced by a handsome Arab stallion. Five mares were covered during the year.

50. Both the Deputy Commissioners of Raepoor and of Belaspoor consider that success would attend an attempt to improve the breed of ponies, the number of which in Chuteesgurh is considerable; and that pony breeding would be eagerly taken up by the people if some good pony stallions were placed at their disposal. The subject is now under consideration, and definite orders will shortly issue.

51. As was mentioned last year, the stallion at Jubbulpoor was not fancied by the Natives, and the stallion sent from Mundla, especially selected for small mares, was subsequently transferred to Dumoh. The number of mares severed during the year was 11.

52. There were 2 stallions in the Saugor district during the greater part of the year. The number of mares served was 20. The Deputy Commissioner is of opinion that the fee of one rupee is too high, and proposes that it should be reduced to eight annas; this can hardly be the case, when it is remembered that eight annas is the charge for bulls. It is also stated that the malgoozars do not care to take their mares a long distance, and prefer to have them served by stallions belonging to two or three Natives who travel about the district. This difficulty may be overcome by the Deputy Commissioner and his Assistants taking the Government stallions out with them when on tour, and allowing the malgoozars' mares to be brought to their camp to be served.

Public Gardens.

53. The public gardens in the different districts still remain under the management of the Local Committees, except the Maharaj Bagh at Nagpoor, which is under the charge of the Agri-Horticultural Society of the Central Provinces. The report of the Society's operations for the past year has lately been published. The number of experiments tried during the year was few, owing to the difficulty of getting a sufficient supply of water.

54. In the Nerbudda division public gardens are kept up at the head quarters of each district, besides the Lall Bagh,—a public park with pleasure ground at Boorhanpoor. The garden on the hill plateau of Mohtoor was closed

during the year. The Baitool garden has been improved; some new *parterres* having been laid out, a cistern constructed and graft mango trees planted. In the Hoshungabad garden the well has been improved, and nearly 1,400 feet of masonry water-courses built; this will do much to prevent the waste of water, which is hardly sufficient for the requirements of the garden. This garden is, almost, if not quite, self-supporting. The value of the vegetables supplied to the jail more than repaid the cost of the prison labour supplied to the garden. A vinery has been erected, and a large number of fruit trees, chiefly mango and lime, have been planted out. In the Khundwa garden advantage has been taken of the peculiarly dry season to improve the well; and in the Lall Bagh garden the number of flower and graft fruit trees has been considerably increased, and the garden much improved. At Nursingpoor the garden suffered very much from want of water.

55. In the Nagpoor district there are four public gardens, in which various experiments were tried, which will be noticed further on.

56. In the Wurdah district also there are four public gardens,—at Wurdah, Arvee, Deolee, and Sindhee. In the Wurdah garden, after a great deal of trouble in finding water, a new well has been sunk, as the old one did not supply sufficient for the whole garden, which will now, it is hoped, keep the garden well supplied even during the hot weather. A variety of fruit trees were received from the Agri-Horticultural Society at Nagpoor, which, together with those previously planted, are thriving well. The water in the Arvee garden failed, but during the rains 264 fruit trees of different kinds were planted out, and most of them are doing well. Nurseries are kept up at all the gardens, except Sindhee, which is too small.

57. In Bhundara one of the gardens is exclusively reserved for the cultivation of Nagpoor oranges, from which it is intended to distribute young plants all over the district.

58. At Raepoor the garden has been enclosed with pillars and rails, and a band-stand has been built by public subscription in the centre. Although the wells have been deepened to 60 feet, they do not give a sufficient supply of water for the garden. The trees planted out last year have thriven, and 113 fruit trees, the greater portion of which are graft, were added during the year.

59. In Sumbulpoor the new garden commenced last year has been greatly improved. A tank which is enclosed in the garden has been cleared out, and flowering water plants have been planted in it. A broad walk has been made all round, which it is intended to plant with cocoa and betul-nut trees, of which some 200 have already been imported from Cuttack. European vegetables were produced of all kinds; the surplus, after supplying European residents, being sold to the Natives, who buy them readily. A summer-house has also been erected, and a flower garden laid out and planted.

60. In the Seonee district the garden at Lucknadown has been resuscitated during the year. In the Seonee garden the swamp at the foot of the garden is being gradually filled up with the rich deposit taken from the Dil Saugor Tank, and will probably be finished during the year. The jail garden also supplied a large quantity of vegetables, both European and Native, the surplus finding a ready market. The public garden at Kuttunghee is a good one, and is much resorted to by the townspeople.

61. In Jubbulpoor the Cantonment garden is in good order, and is under the charge of the Cantonment Magistrate. The city garden, which is under management of the Local Committee, has been improved and the well repaired. A very fine well has been completed in the Thuggee garden; it was proposed to use part of this garden as a nursery and for experiments, but owing to the exceptional season of drought, nothing could be done.

62. The Dumoh garden suffered greatly from want of water; both the tank near, and the well in the garden dried up, and water had to be brought in carts from long distances. The plan of the garden has been improved, and the flower and vegetable beds, which were formerly mixed together, have been separated. The tank and well were deepened.

63. At Chanda the appearance of the garden has been improved very much by the growth of various kinds of trees and plants put down in former years. A considerable quantity of vegetables, both English and indigenous, were grown and distributed. Sugar-cane and arrowroot did well, and a large quantity of the former were supplied to some zemindars and malgoozars for plantation in their villages. Some orange trees were grafted during the year, and 115 lime trees, 200 sweet limes, and 28 cocoanut trees, which were planted during the year, are doing well.

64. At Saugor the Local Committee leased a large part of the garden to a Native, as they found that their funds would not admit of their keeping it up as formerly. A good many mango grafts were produced during the year, but Natives have not generally availed themselves of the opportunity of purchasing them.

65. In conclusion, I am to observe that the reports and returns from some districts were not submitted in proper time, and the Saugor returns were not received until three months after they were due. The Chief Commissioner hopes that greater punctuality will in future be observed. Considering the great amount of agricultural distress which prevailed during the year, it might have been expected that the agricultural reports would have been unusually full of information, but, with one or two exceptions, such as the reports from Raepoor, Jubbulpoor, and Nimar, the observations submitted by the Deputy Commissioner have been meagre, and the subjects of cattle breeding and horticulture, important though they are, have in the reports engrossed more than their due share of attention to the exclusion of more important matter. When statistical returns of the kind submitted with the agricultural report are furnished, the figured statements should always be carefully reviewed and commented upon, and the more noticeable facts and results brought into prominence. The Commissioner of the Nerbudda Division is also the only one who has summarised the reports of his district officers, and in forwarding the reports and statements, many thoughtful remarks have been made by him and by the Commissioner of Nagpoor.

UNOPEN LINE OF THE G. I. P. RAILWAY BETWEEN SHOLAPOOR AND RAICHORE.

No. 114, dated 12th January 1870.

From—LIEUT.-COL. J. S. TREVOR, R. E., *Consg. Engr. for Railways, Bombay,*

To—*The Secretary to the Government of Bombay, Railway Dept.*

Referring to my letter of the 13th October last, No. 2917, describing the state of the works on the unopen line between Sholapoor and the Caugnee River, I have the honor to report that I have again inspected the works, and that the progress on the section from the Boree River to Goolburga has been most remarkable.

2. Rails are laid to Goolburga, and engines have been running daily to that place since the 24th of December 1869, when Mr. LeMesurier went through on the first engine that had gone so far south on the Great Indian Peninsula Railway. The ballasting is well advanced, and will be nearly completed by the end of the current month. The fence is being rapidly erected. The stations are well in hand, Kurubgaum is nearly finished, Dordneh will be completed by the middle of March, and the other two by the end of April. The wells are backward, but arrangements of a temporary character for the supply of water have been made. The only work not sufficiently advanced to be used for traffic by the 1st of February is the

bridge over the Beni Sheroor River. This bridge is to consist of 6 spans of 60 feet, in place of 2 bridges of 3 spans of 20 feet each, that had been first erected and afterwards condemned. The new bridge is to be built with screw-piles and Warren girders, of materials procured from the Baroda Railway Company. The piles are now being screwed, the girders are not yet on the ground; but there is no doubt of the bridge being ready for traffic by the monsoon. In the interval a diversion has been laid in, and traffic will be worked over that diversion till the bridge is completed.

3. The progress on No. 18 Contract has been most creditable to all concerned with the works: every officer has worked with the greatest energy, and their efforts have been crowned by the completion of works that, on my last visit, I considered it almost impossible to finish by the time first fixed for opening to Goolburga. The zeal and energy displayed deserves both praise and substantial recognition at the hands of the Company and Government.

4. I regret to have to write in very different terms of the works beyond Goolburga. In my last report I mentioned that, on the first division from Goolburga to Shahbad Station, 16 miles in length, the only works that remained to complete were the Taganore and Shahbad bridges. At the former, a bridge of 5 arches of 30 feet span, the last foundation has just been laid and the arches are now being turned. The work will probably be finished in another two months. At the latter, nothing has been done. This bridge, which is over the same nullah as the Taganore bridge, was to have been built with 6 arches of 30 feet each, but so much difficulty was experienced by the Contractor in getting in the foundations, that the design has been changed to 3 spans of 60 feet and 1 of 30 feet. One abutment and one pier of the bridge were built on the original design. These are to be used for the 30 feet opening. Screw-piles are to be put down for the piers for the 60 feet openings, and the north abutment is the only piece of masonry that has to be built. The foundations of this have not yet been laid.

5. It had been intended by means of diversions laid in at the Taganore and Shahbad bridges to open the section to Shahbad at the same time as the line to Goolburga. The construction of the diversions was commenced, but the Contractor demanded such exorbitant terms for permitting the Company to use the line before the date fixed for completion of the contract, that the idea of opening the section from Goolburga to Shahbad has been abandoned, and the work at the diversions stopped.

6. Between Shahbad and Nulwur Stations, 13½ miles, the only incomplete work of importance is the bridge (12 spans of 30 feet, 16 of 78 feet, and six of 62 feet) over the Caugnee River. This work has not been touched for the last six months. There are four piers and one abutment still to found. The other masonry is, with the exception of girder bed blocks, completed. The cause of the delay at this work, as well as at the Shahbad Viaduct, is want of pump power. The Contractors possess only two steam pumps; one has been in use at the Taganore; and the other had not sufficient power to keep down the water at the Caugnee foundations. The pump from the Taganore has now been taken to the Caugnee River, and work will be commenced. The girders over the bridge are to be erected by the Company, but the materials are to be conveyed to that place by the Contractor from Goolburga. The iron-work is now being delivered to the Contractor for conveyance, and the Company can put up the girders in about four months.

7. There are some gaps in the approach banks on the south of the Caugnee River; these gaps were formerly intended to be crossed by bridges, but are now to be closed. Rails are laid for all but 5 miles between Shahbad and Nulwur. This work is progressing very badly; although the Contractor has complained of want of rails, he has not carted forward more than a mile or two during the last six months, and at the time he complained that the Company had declined to permit him to take more rails from their stores at Goolburga, there were in front of his house stacks that had been in his possession since 1866, and that have not been moved to this date. Ballast is laid over the whole distance from Shahbad to Nulwur. Between Nulwur and Yedagherry, a distance of 16½ miles, besides a few culverts, there are only two bridges incomplete, one of 9 spans of 20 feet, and another of 12 spans of 30 feet. The former is in hand and will be finished in about six weeks. At the latter, one abutment and 5 piers are complete, the others are not founded. The difficulty here also has been the want of pump power. The Company are about to lend the Contractor one of their steam pumps, and this work can then be pushed on. There is one cutting in which some granite has been met with, not quite cleared out. With this exception, the earth-works and also the ballasting may be said to be complete. No rails have been laid, or any permanent-way materials brought on to the ground south of Nulwur. There is one bridge of 4 spans of 10 feet close to Yedagherry not completed, but this it has been decided to close.

8. From Yedagherry to Sholapoor Road Station, 14 miles, all the bridges are founded and up to springing. The arches of one, a bridge of 7 spans of 20 feet, are being turned; but at 11 other bridges, having among them 22 arches of 20 feet, and 10 of 10 feet, no work is in progress for want of centres, although dressed arch stones are on the ground. Mr. Bray obtained an advance in his rates for arch-work in May 1868, from Rs. 20 to Rs. 26½ per cubic yard, on the plea that the work the Engineers made him put in was better than provided for in the specifications attached to his contract. He now claims a further advance on the same grounds, and the arch-work has been kept back purposely to get this advance. It can, however, be finished by the date fixed for the completion of the contract, if a few more centres are provided. One or two cuttings in this section are not cleared out, but with these exceptions, the earth-works and ballasting are nearly completed.

9. The distance between Sholapoor Road Station and the Krishna Station and bridge is 13 miles. As on the preceding sections of the line, the earth-works and ballast are nearly finished, and all the bridges are up to springing. But the arch-work is backward, there being still 6 arches of 20 feet, and 14 of 15 feet, to turn, besides the arches and walls of some drains and culverts. Work is, however, in progress, stone is collected on the ground, and the arches will be finished in a few months.

10. The bridge over the Krishna is to consist of 37 spans of one hundred feet each, and will be about 70 feet in height at the deepest part of the river. The bridge is to be built throughout of iron. The design has been prepared, and the site selected by Mr. Berkley. The bridge was to have been built originally with masonry piers, at the road crossing, about two miles lower down the river. But the site was abandoned after about a lakh of Rupees had been expended on earth-works in approaches, and about Rs. 40,000 on stone for the masonry work. For a bridge to be entirely built of iron, there is, I think, but little to be said in favor of the new site over the old. The new line makes the railway a little longer, and the advantage of better foundations that it offers is of no great importance when the piers are to be formed of iron columns. In both places granite crops out in the bed, but at the new site it stretches regularly and at right angles across the river; while at the old site the lie of the rock is at a considerable angle to the direction of the stream.

11. None of the iron-work has yet been despatched from Home, and unless greater exertions are made in England to get it ready, the bridge may not be commenced before the working season of 1871-72. The bridge will take at least two seasons to construct, and great difficulty will be experienced in working traffic over the river till it is finished. The stream was not fordable when I crossed it in the beginning of January 1870.

12. South of the Krishna Station, the Great Indian Peninsula Railway extends to Raichore, or about 15 miles; there are two bridges of some size, one of 7 spans of 30 feet, and the other of 3 spans of 20 feet. The remainder 1 span of 20, 5 of 15 feet, and 8 of 10 feet are up to springing. But no work is in progress on them, nor is stone for the arch-work on the ground.

13. The first bridge 3 spans of 20 feet is being proceeded with, one abutment is up to ground line, the other work is not yet founded. At the second bridge of 7 spans of 30 feet, two piers have still to be founded, the remainder of the masonry work is up to springing. The delay in getting in the foundations is again attributable to want of pump power, and the want of progress with the arch-work, to disputes with Engineers in regard to the quality of work to be provided under the new specification.

14. There were to have been six stations on the contract. The buildings at Shahbad are completed. Those at Nulwur, Yedagherry, Sholapoor road, and Krishna bridge are well advanced, and are being pushed on; but the station at Raichore has not been commenced. This station was to have been the joint property of the Madras and Great Indian Peninsula Railway Companies, and was to have been built about a mile and a half to the north of the junction line of the two undertakings. The Madras Company are desirous to carry out the work, and they can erect a better building for the same money under their contract rates than the Great Indian Peninsula Railway Company can through the agency of Mr. Bray. It has been decided to let the Madras Company carry out the works. This cannot, however, be done without a change of site, and it is proposed to build the station about a mile and a half south instead of north of the dividing line. The new site is equally convenient for the town of Raichore and for water-supply.

15. In conclusion, I have the honor to state that, with the exception of the Krishna bridge, there is no difficulty in completing all the works south of Goolburga by the 30th of June next, the date to which Mr. Bray's time of completion has been, at his own request, extended, and the date by which Mr. Bray's Agent personally admits that the works can be finished, if pushed on with vigour. But from the method in which the works are being prosecuted, the obstructive spirit displayed by the Contractor's Agent, and the absurd claims put

forward for compensation for every trivial deviation from the plans and designs first sent to the Contractor, I cannot but fear that the present working season will be wasted, and the completion of the works delayed to another year, to the great pecuniary loss, not only of Government and the Railway Company, but also of the Contractor, Mr. Bray.

No. 70, dated 17th January 1870.

RESOLUTION—By the Government of Bombay, Railway Dept.

From the Consulting Engineer for Railways, No 114, *dated* 12*th January* 1870.

Submits a report of his inspection of the unopen line of the Great Indian Peninsula Railway between Sholapoor and Raichore.

RESOLUTION.—The line to Goolburga can be opened for passenger and goods traffic on the 1st February 1870. The speed of passenger trains should be restricted till the fencing is complete, and the line thoroughly boxed up to an average of 15 miles an hour. It has given Government pleasure to note the remarkable progress of the works between Sholapoor and Goolburga during the last three months. The arrangements made by the Agent, and the energy and vigour with which the works were carried out by the Resident and Assistant Engineers, have been most creditable.

* * * * *

2 A copy of the Consulting Engineer's report should be sent to the Secretary of State, whose attention should be drawn to the obstructive spirit displayed by the Contractor's Agent for the works south of Goolburga, and also to the delays in the preparation of the iron-work for the Krishna bridge.

3. Government direct the Agent to take all legal steps in his power to secure the vigorous prosecution of the works on Contract No. 19, and to serve notice on Mr. Bray that if the works are not finished by the date to which his contract has been extended, the works will be carried on at his expense by the Company's Officers, and he will be proceeded against for all losses sustained by reason of his failure to complete his contract within the stipulated period.

4. Copies of these papers should also be forwarded to the Government of India.

IRRIGATION OPERATIONS OF FUSL-RUBBEE OF 1869-70 UP TO 31st OCTOBER 1869.

CANAL DIVISIONS.	WATER DISTRIBUTED DURING OCTOBER. Depth in Canals at Rooftaking times. Full Supply.	Actual throughout October.	Gross Consumption C. Ft. per Second. Estimated Full Supply.	Actual Average throughout October.	NAVIGATION RETURN CANAL. Principal Items of Traffic. Up.	Down.	LAND IRRIGATED (APPROXIMATE). Zillah.	Acres.	RAIN-FALL. During month	Average.	CHIEF CROPS (APPROXIMATION). Name.	Area in Acres.	Remarks.
BARREE DOAB CANAL. 1st Division ... Main Branch, Lower	4·9	2·46	...	570·49	...	...	Goordaspoor	436	0·02	0·2	Barley ...	199	The return for the Kurnal Division has not been received; as, however, it is known that rubbee irrigation during October was very limited; it is not considered advisable to detail this statement longer.
2nd Divn. Lahore Branch ...	4·6	0·76	...	90·64	...	...	Umritsur ...	1,787	1·50	...	Mixed grain	773	
	3·3	1·81	3073·6	304·73	...	...	Lahore ...	Nil.	...	...	Wheat ...	1,094	
			...								Others ...	157	
TOTAL B. D. CANAL ...	...	...	3073·6	965·86	...	...	...	2,223	...	...	...	2,223	
WESTERN JUMNA CANALS. Kurnal Division	4·33	...	...	...	...	...	Umballa ...	...	...	...	...	...	
Delhi "	4·4	3·08	...	498·2	...	...	Kurnal ...	...	...	...	...	...	
Hansi " Bulls Head	8·8	8·7	2,546	1,003	...	...	Delhi ...	403	...	...	Barley ...	...	
	8·4	8·1	...	272	...	...	Rohtuck ...	769	...	...	Mixed grain	...	
							Hissar ...	...	...	...	Wheat ...	1,172	
							Jheend ...	...	...	...	Others ...	...	
							Bikaneer ...	...	...	...	...	...	
TOTAL W. J. CANAL ...	...	...	...	...	...	...	...	1,172	...	...	...	1,172	
INUNDATION CANALS. Upper Sutlej Division ...	...	...	...	...	...	...	...	...	...	...	...	...	
Lower Sutlej and Chenab ...	...	...	...	...	...	...	...	12,063	...	...	Wheat ...	34,000	The areas entered as irrigated by Inundation Canals are very rough approximations, there being no revenue establishment, as in perennial canals.
Indus Canals ...	...	...	...	...	...	...	...	21,400	0·1	0·1	Others ...	33,363	
								33,900	...	0·2	...	...	
TOTAL INUNDATION CANALS ...	...	...	...	...	...	...	...	67,363	...	...	...	67,363	
DELHI AND GOORGAON WORKS ...	...	...	...	...	...	...	Delhi ...	355	...	...	Barley ...	63	
							Goorgaon ...	33	...	...	Wheat ...	325	
TOTAL DELHI & GOORGAON WORKS ...	...	...	...	...	...	...	...	388	...	...	...	388	
GRAND TOTAL ...	...	...	...	...	...	...	...	71,146	...	...	...	71,146	

The rubbee irrigation commenced towards the end of October.

W. BROADFOOT, *Lieut., R.E.,*
Asst. Secy. to Govt., Punjab, Irrigation Branch.

LAHORE,
The 11*th January* 1870.

IRRIGATION OPERATIONS OF FUSL-RUBBEE OF 1869-70 UP TO 30th NOVEMBER 1869.

CANAL DIVISIONS.	WATER DISTRIBUTED DURING NOVEMBER. Depth in Canal at Regulating Gauge. Full Supply.	Actual throughout November.	Gross Consumption C. Ft. per Second. Estimated Full Supply.	Actual Average throughout November.	NAVIGATION RETURN CANAL. Principal Items of Traffic. Up.	Down.	LAND IRRIGATED (APPROXIMATE). Zillas.	Acres.	RAIN-FALL. Average.	During Month.	CHIEF CROPS (APPROXIMATION). Name.	Area in Acres.	REMARKS.
BARREE DOAB CANAL. 1st Division	4·9	2·8	...	770·78	...	...	Goordaspoor	8,353	0·20	...	Barley ...	2,422	183·12 C. Ft. per second escaped, not being required for irrigation.
2d Division: Main Branch, Lower	4·6	2·04	...	500·78	...	...	Umritsur ...	9,887	...	...	Mixed Grain ...	5,109	
2d Division: Lahore Branch	3·3	2·65	2,546	485·98	...	...	Lahore ...	5,859	...	...	Wheat ...	11,640	
											Others ...	4,928	
TOTAL B. D. CANAL	...	...	...	...	...	...	...	24,099	...	...	...	24,099	
WESTERN JUMNA CANALS. Kurnaul Division	4·33	4·17	...	232	...	40,343	Umballa ...	594	...	...	...	...	122 C. Ft. per second passed down the Boodha Khera Escape.
Delhi ,,	4·4	...	...	818	...	Bullies	Kurnaul ...	13,662	...	...	...	...	
Hansi ,,	8·8	...	2,546	1,003	...	Kurrees	Delhi ...	12,339	...	...	Barley ...	711	
Do. Bulla Head ,,	8·4	...	...	283	...	Plank &c.	Rohtuck ...	17,796	...	...	Mixed Grain ...	11,989	
							Hissar ...	17,629	...	...	Wheat ...	52,784	
							Jheend ...	6,454	...	...	Others ...	6,124	
							Bikaneer ...	134	...	...	...	...	
TOTAL W. J. CANAL	...	...	...	...	...	40,343	...	71,608	...	...	...	71,608	
INUNDATION CANALS. Upper Sutlej Division	...	...	...	...	...	...	...	...	...	...	...	...	The areas entered as irrigated by Inundation Canals are very rough approximations, there being no revenue establishment as in perennial canals.
Lower Sutlej and Chenab ,,	...	...	...	...	...	...	...	12,063	...	...	Wheat ...	...	
Indus Canals ,,	...	...	...	...	...	...	...	21,400	...	...	Others ...	34,000	
								33,900	...	...		33,363	
TOTAL INUNDATION CANALS	...	...	...	...	...	...	...	67,363	...	...	...	67,363	
DELHI AND GOORGAON WORKS	...	...	...	...	...	...	Delhi ...	565	...	...	Barley ...	526	
							Goorgaon ...	2,225	...	...	Wheat ...	1,700	
											Others ...	564	
TOTAL D. AND G. WORKS ...	...	...	...	...	...	...	...	2,790	...	...	...	2,790	
GRAND TOTAL ...	...	...	...	...	...	40,343	...	165,860	...	...	...	165,860	

W. BROADFOOT, *Lieut., R.E.,*
Asst. Secy. to Govt., Punjab, Irrign. Branch.

LAHORE,
The 18th January 1870.

GOVERNMENT OF INDIA.

FINANCIAL DEPARTMENT.

WORKING OF THE CERTIFICATE TAX ACT IX OF 1868 IN THE DIFFERENT DISTRICTS OF THE NORTH-WESTERN PROVINCES.

No. 53 A, dated 7th December 1869.

From—R. SIMSON, Esq., *Secretary to the Government, North-Western Provinces,*
To—*The Officiating Secretary to the Government of India,* FINANCIAL DEPARTMENT.

I am directed to forward, for the information of His Excellency the Viceroy and Governor General in Council, copy of a letter,* and of its enclosures, from the Secretary to the Board of Revenue, containing a report on the working of the Certificate Tax Act IX of 1868 in the different districts of the North-Western Provinces, together with a copy of the orders of Government thereon, No. 52A of this day's date.

* No. 216, dated 27th November, 1869.

2. It will be observed that the administration of the Act was by far the most successfully carried out in the Meerut district, and that to Mr. Billings, Deputy Collector, fell the largest portion of the work of assessment, and that he performed the duty with great care and ability. The Board recommend that a donation of Rs. 1,000 be granted to Mr. Billings, and the Lieutenant Governor considers that this reward is well deserved, and moreover that the grant of it will have a good effect. His Honor accordingly desires me to submit the proposal for the favorable consideration of His Excellency the Governor General in Council.

No. 52A, dated 7th December 1869.

From—R. SIMSON, Esq., *Secretary to the Government, North-Western Provinces,*
To—*The Secretary to the Board of Revenue, North-Western Provinces.*

I am directed to acknowledge receipt of your letter No. 216 of the 27th ultimo, and to convey to the Board the thanks of the Lieutenant Governor for their full and instructive analysis of the incidence of the Certificate Tax.

2. The Board have very clearly shown, both by comparison with the returns of the Income Tax, and by a numerical examination of the several classes, as also of the average rates of the tax as assessed in the various districts, that (excepting in the Meerut district) the provisions of the Act have not been applied with discrimination and with care.

3. The districts noted in the margin, with the Collectors who have been in charge during the year, are those in which failure has been most conspicuous, and in which consequently it must be concluded that the Collectors failed to discharge efficiently the trust committed to them by the Legislature.

Bareilly	...	Mr. Willock.
Goruckpore	...	,, Clifford.
Ghazeepore	...	,, Pasley.
Jounpore	...	,, Clarmont Daniell.
Shahjehanpore	...	,, R. Saunders.

4. The Lieutenant Governor has already, in the C. O. dated 27th August last, No. 35-20A,* enforced upon Collectors and the controlling authorities

* Circular No. 35-20A of 1869. Dated Nynee Tal, the 27th August 1869.

The Lieutenant Governor desires to impress on you the duty of assessing the Income Tax at a full and sufficient amount, and of omitting no precautions, or sparing yourself any pains or labor, to secure this end.

2. The law has lodged a trust in you which you are bound to fulfil.

3. While every endeavor should be made to avoid over-assessment, it will be remembered equally that every under-assessment is a defrauding of the Exchequer; and that, in the present unfavorable state of the finances, what is short assessed on any one person or class is virtually imposed as a debt which they will have to make good on all other persons and classes.

4. No compunction must therefore be allowed in assessing to the full figure of estimated income. It is a duty owing to the State and to the community at large.

5. The Board of Revenue and the several Commissioners will be required to see that these instructions are fully acted up to, and that any deviations from them are promptly brought to the notice of the Lieutenant Governor.

the obligation that devolves on them to assess the tax at full and adequate rates, and the wrong accruing to the public from any neglect to do so.

5. The operations of the Income Tax in the current year will be carefully watched, and will, in the same manner as the present, be analyzed by the Board; and the merits and demerits of the various officers concerned made public.

6. The remarks by Mr. Tidy as to the weapon for extortion and oppression afforded by proceedings which show a disposition to repose special trust in any of the lower classes of officials deserve the careful attention of all officers engaged in the assessment of the tax. The danger is only to be obviated by active and independent personal enquiry and research.

7. Mr. Forbes and his staff, Messrs. Ward and Billings, deserve much praise for the able discharge of their duties; and the thanks of Government are due to them for the successful results secured by their labors. The Lieutenant Governor will have much pleasure in recommending Mr. Billings for the gratuity proposed by the Board.

No. 216, dated 27th November 1869.

From—W. C. PLOWDEN, Esq., *Secy. to the Board of Revenue, North-Western Provinces,*

To—*The Secretary to the Government of the North-Western Provinces.*

I am desired by the Board to submit the accompanying report reviewing briefly the administration of the Certificate Tax Act IX of 1868 in the different districts of the North-Western Provinces.

2. The tax has been assessed throughout the 36 districts of the Provinces, and the realizations have been £50,835 out of a demand of £51,342. The sum realized was contributed by 34,294 persons (who took out certificates), of whom 332 were Europeans or Eurasians, and the remainder Natives.

3. Statement A shows the realizations, district by district, and Statement B, the classes under which the tax was paid.

4. Turning to the last statement, it will be seen that the 1st class is without a single representative. In the 2nd class, comprising incomes between £20,000 and £40,000, there is one solitary tax-payer, a Native resident of Cawnpore. The great firm of the Muttra Seths is conspicuous by its absence; yet the partners' firm have certainly the repute, if not the enjoyment, of an income exceeding £20,000.

5. In the 3rd class (incomes between £20,000 and £10,000), the 36 districts contribute but five tax-payers, of whom four reside in Allahabad and one in Muttra.

6. In the 4th class, comprising incomes between £5,000 and £10,000, there are 12 contributors to the tax, of whom five are Europeans or Eurasians, and the remainder Natives; four (one European and three Natives) belong to Allahabad, three (two Europeans and one Native) to Mirzapore, one to Agra, one to Muttra, and one to Ajmere.

7. In the 5th class (incomes between £2,500 and £5,000) there are 62 contributors, of whom 26 are Natives, 13 reside in Cawnpore, seven in Allahabad, and six at Muttra; but in 18 districts so large an income as £2,500 does not seem to be known outside of the official and landed classes.

8. It cannot, however, be the fact that the large bankers of Seharunpore, Moradabad, Shahjehanpore, Muttra, Ghazeepore, and elsewhere should have such small incomes as these returns would indicate; and it is only clear that the tax has been evaded by many who should have contributed more largely to it than they have.

9. In the 6th class (incomes between £2,500 and £1,000) there are 245 tax-payers, 23 of whom are Europeans.

10. In eight districts these tables are made to assert that there is not a single individual liable to the Certificate Tax whose income would bring him within this class. These districts are Deyrah, Kumaon, Gurhwal, Bijnour, Jaloun, Lullutpore, Humeerpore, Jounpore, and Turrai; and Moradabad, Etawah, and Etah have each only one individual so favored in the way of income.

11. The 7th class comprises incomes between £500 and £1,000. It includes only 659 tax-payers, of whom 43 are Europeans and Eurasians; 59 belong to Meerut, 42 to Allygurh, 47 to Agra, 75 to Cawnpore, 37 to Allahabad, 29 to Mirzapore, and 33 to Benares; that is to say, nearly half of the entire number will be found in 7 out of the 36 districts.

12. The 8th class is the first which contains over a thousand tax-payers. It comprises incomes between £500 and £250, and embraces 1,733 contributors to the tax, about 5 per cent. of whom are Europeans and Eurasians. About 12 per cent. belong to Meerut (221), half as many to Allygurh (116), and nearly as many to Budaon (104); indeed these three districts contribute 25 per cent. of the persons in this class; Agra adds 89, Cawnpore 139, Allahabad 85, and Azimgurh 66 persons taxed under this class. Bareilly, with its large town population, and with nearly a million and a half of inhabitants in the district, contributes 28 persons; while Goruckpore and Bustee, with their population of three millions and a half, contain 46 persons rated in this class; and Deyrah, Kumaon and Gurhwal add 29 more, of whom 16 are Europeans.

13. In the remaining two classes, where the incomes are below £250, the great bulk of the tax-payers (31,403) is found; of these only 6,851 have incomes above £100 a year.

14. In the first of these last two classes, class 9 (incomes between £100 and £250), out of the 6,851 tax-payers embraced, one-twelfth (578) belong to the Meerut district, and 410 to Cawnpore. Bareilly has three less tax-payers than Budaon, *viz.*, 232 against 235; while Shahjehanpore has only 171. Benares and Mirzapore combined contribute but a few more tax-payers in this class than are found in the one district of Allygurh; the numbers being Allygurh (333), Benares (165), and Mirzapore (196), 361. Allahabad again has even fewer than Allygurh, though more, *viz.* 299, than either Benares or Mirzapore; while Agra (216) and Muttra (229), 445, give but little in excess of Cawnpore and considerably less than Meerut.

15. Goruckpore and Bustee with their enormous population contribute only 296, or about one-fifth more than Azimgurh; Kumaon and Gurhwal give only 34 and 21 respectively.

16. In the 10th class (incomes between £50 and 100) there are 24,726 tax-payers, of whom 38 are Europeans and Eurasians. Here, again, Meerut is conspicuously successful, contributing more than one-sixth (4,256) of the entire number. Cawnpore comes next, *haud passibus æquis*, with 1,144 tax-payers, charged on incomes between £50 and £100.

17. Bareilly is again below Budaon, with 563 against 609; and Benares and Mirzapore are below both these two Rohilcund districts, the figures being

468 and 548. The districts of Seharunpore, Mozuffernugger, and Boolundshuhur stand far above the wealthier districts of the Benares Division already named.

18. Table C shows how the districts stand under the classification of professions, prescribed by the Government of India.

19. *Religion* has entirely escaped taxation, except in the districts of Meerut, Gurhwal, Futtehpore, and Banda; and there are, doubtless, many cases where rich priests have entirely escaped taxation.

20. The heading "Education and Science" is a blank in the return; while the "Fine Arts" contributes 57 tax-payers, of whom 54 belong to Meerut; Agra, Muttra, and Furruckabad supplying the other three.

21. Under "Law" there are 599 tax-payers, three of whom are in the 5th class (over £2,500), and seven in the 6th class (from £1,000 to £2,500). Meerut contributes 57, Agra 75, Cawnpore 21, Allahabad 28, Azimgurh 47, and Allygurh 58. Seharunpore, Kumaon, Gurhwal, Shahjehanpore, Muttra, Furruckabad, Etawah, Jaloun, Lullutpore, Banda, Humeerpore, and Bustee are all blank under this heading, though the Government Vakeel at Seharunpore is said to make Rs. 1,500—£150—by his practice; and there are, doubtless, others in other districts who are not less successful.

22. "Medicine" adds 13 to the number of tax-payers, but they come from only six districts.

23. "Engineering" gives 30; but one-half almost of this class (14) belong to Ajmere only; Allahabad, Cawnpore, Benares, and Agra are all returned blank under this head.

24. "Clerks and shopmen salaried" contribute 39, 29 of whom belong to Ghazeepore; while all the large towns but Benares seem to possess no such class of persons. "Jobbed servants," however, bring in 182, 53 of whom come from Meerut.

25. "Agents" contribute 39 tax-payers, and "Bankers and money-dealers" 13,400, of whom 1,606 come from Meerut, and 1,849 from Cawnpore. Mirzapore returns this class as a blank, and Jounpore shows under it only two persons; Benares has only 184, and the rich district of Ghazeepore 274.

26. "General Merchants."—This class comprises 2,290 persons; and "Piece goods" (dealers in) 2,186; "Grain dealers" show 3,887 tax-payers; "Salt merchants" 206.

27. Without making further comments on the list, it may be said that a careful examination of Statements B and C leads only to one conclusion, and that not favorable to the mode in which the tax has been worked.

28. It appears obvious that in the Meerut district only has an efficient control been exercised in this matter.

29. Mr. Forbes' report and those of his subordinates, by whom the tax was worked, Mr. Ward and Mr. Billings, accompany this report, and explain how it is that the Meerut district stands as high as it does in its collections under the Act.

30. The tax has been rigorously but carefully applied, only 29 appeals having been presented against the final assessments; and the result, most

creditable to Mr. Forbes' management, and to the labors of Messrs. Ward and Billings, has been that Meerut stands out prominent as the only district in which under Act IX of 1868 a larger income has been realized than under Act XXI of 1867.

31. Mr. Forbes himself does not consider that the proper standard has yet been reached in his district; but the extent to which he has been able to carry out his views has been most successful: and the Board recommend Mr. Billings, to whom is due the main credit of having worked out Mr. Forbes' principles, to the favorable notice of the Lieutenant Governor.

32. The Collector of Cawnpore, while referring to the fact of his collections under Act XXI of 1867 having been larger than those of any other city, hazards a surmise that this will again be the case. But, in regard to district operations, his conjecture is opposed to facts, and Meerut stands half as high again as Cawnpore in its realizations under the Certificate Tax.

33. Now there seems to be no reason to believe that Meerut has been over-assessed as a district; on the contrary, as Mr. Forbes points out, it is probable that the full amount which ought to have been assessed has not been levied; and from the nature and scope of the Act, and the circumstances of the country, it is only reasonable to suppose that the best endeavors of officers will never realize from this source an income which will at all correspond with the wealth of the people. It is therefore the more incumbent on district officers and their subordinates to have recourse to all sources of information which lie within their reach, so as to be in a position to apply the tax as thoroughly as possible. Their sources of information are doubtless not so numerous or so well supplied as is desirable, but in many cases, such as they are, they have not been tapped.

34. For instance, there are the returns for Act XXI of 1867. Though they do not exactly indicate what is the number of persons who should contribute to the tax under Act IX of 1868, it is evident that the first five classes, those comprising incomes above Rs. 500, should show the minimum number of persons who in ordinary circumstances would be liable to assessment under Act IX of 1868. This being the case, let us examine Meerut and Cawnpore by the light of the returns in question. We find the following results. A. shows number of persons assessed under Act XXI of 1867, as furnished to the Board in the monthly returns; B., number of persons assessed under Act IX. of 1868.

On Incomes.			Over Rs. 25,000.	Between Rs. 10,000 and Rs. 25,000.	Between Rs. 5,000 and Rs. 10,000.	Between Rs. 1,000 and Rs. 5,000.	Between Rs. 500 and Rs. 1,000.	TOTAL.
No. of Assessments.	Meerut ...	A.	2	10	38	471	1,173	1,694
		B.	1	13	59	799	4,256	5,128
	Cawnpore ...	A.	13	51	109	655	1,009	1,837
		B.	14	41	75	549	1,144	1,823

35. It will be seen from this that in Cawnpore on all incomes over £100, there has been a falling-off in the number of persons assessed, except in the 1st class, which has altered by one in favor of 1868. While in Meerut, leaving out class I, there has been a steady increase in all the classes.

36. It is the same again in Benares and Mirzapore; but as in Cawnpore there has been a fall in the number of persons assessed, which should not have escaped the notice of the Collector; the figures are—

No. of Assessments. On Incomes.		Over Rs. 25,000.	Between Rs. 10,000 and Rs. 25,000.	Between Rs. 5,000 and Rs. 10,000.	Between Rs. 1,000 and Rs. 5,000.	Between Rs. 500 and Rs. 1,000.	Total.
Benares	1867	5	12	62	264	551	894
	1868	2	12	33	214	469	730
Mirzapore	1867	9	32	64	358	642	1,105
	1868	7	25	29	243	548	852

37. In Benares the fall is the more remarkable, because had the Collector referred to the Income Tax returns, he would have seen (1863-64) that out of 2,365 persons, with incomes assessed at over Rs. 500, only 708 were assessed under Schedule I, *i. e.*, on incomes from land; while the other 1,657 should *primâ facie* have been embraced by Act IX of 1868. In fact, a reference to the Income Tax returns shows that under Schedules II and III, which embrace trades and professions, 1,933 persons were assessed in 1863-64, with incomes of Rs. 500, against 730 under the Certificate Tax in 1868.

38. Goruckpore, Bareilly, Ghazeepore, Jounpore, Shahjehanpore are amongst the districts which are conspicuous for the excessively light incidence of the tax per head of the population. Examining these by the light of the returns for Act XXI of 1867, we find in Bareilly taxable incomes between £1,000 and £2,500 have fallen in number from 8 to 3; those between £500 and £1,000 from 32 to 24; those between £100 and £500 from 275 to 260.

39. In Goruckpore, in the same classes, taxable incomes have fallen in number from 6 to 5, from 13 to 8, from 312 to 154; while in the lowest class of all (from £50 to £100) they have fallen from 833 to 698.

40. In Goruckpore the Collector has since pointed out that his realizations in 1867 were largely below his assessments that year, so that a comparison of the assessments in 1867 with the realizations in 1868 will not be crucial. But the fact of the very light incidence of the tax per head on the population remains the same.

41. In Ghazeepore the fall is from 20 to 3, from 57 to 25; and in the lowest class from 847 to 766; while those between £100 and £500 have risen from 270 to 308.

42. In Jounpore, again, the fall is from 8 to nothing, from 19 to 12, and from 167 to 145.

43. In Shahjehanpore there has been no fall to speak of, *viz.*, only from 16 to 12 on incomes between £500 and £1,000, which has been compensated by a rise in the class above this of from nothing to 4.

44. The statements altogether indicate what seems a very unsuccessful administration of the Act (except in the case of Meerut), whether districts are judged by the number of tax-payers in the population or by the incidence of the tax per head on the population. This is illustrated by Statements F and G.

45. The latter table shows that measured by the number of tax-payers in each 10,000 of the population, and excluding Meerut, where the figures are 43 per 10,000, Mozuffernuggur stands highest, with 18 per 10,000; and Goruckpore and Lullutpore lowest, with 4 and 3 per 10,000 respectively.

46. The rate of incidence of the tax per head on the population (excluding Meerut with 9 pie per head) ranges from 7 pie in Cawnpore to 1 pie in Gurhwal, Kumaon, Lullutpore, and Goruckpore.

Ajmere, Allahabad, and Allygurh give 5 pie per head on the population.

Mozuffernugger, Futtehpore, Muttra, Deyrah, Agra, Furruckabad, and Mirzapore give 4 pie per head on the population.

Boolundshuhur, Mynpoory, Saharunpore, Moradabad, Etawah, Etah, Jhansie, Budaon, Banda, and Benares give 3 pie per head.

Jaloun, Azimgurh, Shahjehanpore, Jounpore, Ghazeepore, Bijnour, Humeerpore, Bareilly, and Bustee give 2 pie per head; and the four districts, already named above, close the list with 1 pie per head.

47. Now it cannot for a moment be credited that the population of Futtehpore and Mozuffernuggur, quâ liability to Certificate Tax, is four times as favorably situated as that of Goruckpore; twice as favorably situated as that of Bareilly, Shahjehanpore, Ghazeepore, Jounpore, Azimgurh, and the other districts enumerated as paying 2 pie per head on the population; or 33 per cent. better off than that of Moradabad, Benares and other districts, which contribute 3 pie only per head.

48. The real cause of this apparent difference in circumstances is to be found in the very small number of assessments that have been made in those districts where the incidence of the tax is so light.

49. The district reports, as a rule, are meagre, and do not call for notice; but the remarks made by Mr. Tidy, Deputy Collector, Saharunpore, on the opportunities for extortion afforded by a tax like that imposed by Act IX of 1868, deserve attention.

50. Mr. Tidy writes—"It was not unfrequently found that names which should have been entered in the list had been omitted. The tehseeldar of course could not be blamed for occasional omissions of this kind, for he (especially when, as was the case in this district, none of the tehseeldars had long held the office, and three of the four had only just been appointed) could only depend on his subordinates. The opportunities of extortion, which any License or Income Tax gives to canoongoes, putwarees, and tehseel chuprasees, is one of the worst evils attending it; and the unwillingness of well-to-do traders, whose names had not been entered in the list, to pay when called upon to do

so, and their persistent endeavors even when they had paid to recover the money, led me to the conclusion that they had already had to pay for the omission of their names on a previous occasion. After assessing a portion of another district, I was informed that a canoongoe, whom I had frequently consulted as to the income of the persons who had come before me, had made a large sum by representing to the people that it would be advisable for them to secure his good offices. Remembering this I avoided, as far as possible, putting any question on the subject to canoongoes, putwarees, or other subordinate officials."

51. The Board have already referred to the success which has attended Mr. Forbes' application of the Act in Meerut. That officer in his report observes—"As I believe the results in the Meerut district may possibly exceed those in adjacent districts, I will at once explain the principles upon which I proceeded. I was determined that the trading classes should pay their full quota towards the burthens of the State under which they live, and have gone on prospering and accumulating wealth hitherto untaxed. I was determined that lists prepared by Native officials should not without check or scrutiny be accepted as a correct basis of assessment. I was convinced from my knowledge of the people of the district that former lists prepared for Income and License Taxes were not a true exposition of the distribution of capital; and lastly I was satisfied that there are few Native traders who do not, by retail sales and interest on moneys lent, make a profit of something under one rupee six annas per diem, which brings them within the lowest class of the present assessment.

"I was not content, therefore, that from the former lists the names of those rated under Rs. 500 per annum should be excluded, and the new assessment laid upon the remainder. It would have been an easy and rapid, though perfunctory, mode of getting through a troublesome duty; but at the same time the just claims of Government upon classes hitherto untaxed would have been sacrificed.

"I asked Messrs. Ward and Billings to undertake the preparation of the lists, because whilst knowing my principles and carrying them out, they were uninfluenced by what I must allow might have been my extreme views.

"The work in their hands has been well and mercifully done. Few, I believe, have been taxed who should have been excluded from the lists; and we may look for an increase rather than a decrease of revenue from this source in future years. I believe on income, License Tax should in Meerut produce one lakh of Rupees."

52. That the work has not been done harshly is evident, as already noticed from the small number of appeals made; and the Board consider that both the Collector of Meerut and Messrs. Ward and Billings are specially deserving of favorable notice for the successful manner in which they have applied the Certificate Tax.

53. To Mr. Billings has fallen the largest portion of the work of assessment, and the Board direct me to express their hope that His Honor will be pleased to mark his sense of that officer's assiduous labors by some substantial token of approbation. They would suggest, if the recommendation meets with the Lieutenant Governor's approval, that Mr. Billings should receive a donation of Rs. 1,000 for the successful mode in which he has discharged the difficult duty entrusted to him.

A.

ACT IX OF 1868.

Statement of Demand, Collections, Refunds and Discount for the districts in the North-Western Provinces.

DISTRICTS.	TAX ASSESSED FOR 1868-69.				Population.
	Demand.	Realizations.	Discount.	Refunds.	
1	2	3	4	5	6
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Dehra Doon ...	2,336 0 0	2,336 0 0	3 8 0	100 0 0	102,831
Seharunpore ...	14,912 0 0	14,912 0 0	36 0 0	445 8 0	866,483
Mozuffernuggur ...	15,728 0 0	15,728 0 0	...	...	682,189
Meerut ...	59,332 0 0	57,739 2 9	105 0 0	1,743 8 0	1,199,598
Boolundshuhur ...	12,312 0 0	12,312 0 0	19 0 0	1,444 8 0	800,481
Allygurh ...	25,416 0 0	25,416 0 0	10 7 0	...	925,538
Kumaon ...	2,752 0 0	2,752 0 0	13 0 0	1,392 0 0	385,790
Ghurwal ...	1,248 0 0	1,248 0 0	...	602 8 0	248,742
Bijnour ...	6,088 0 0	5,992 0 0	...	...	690,975
Moradabad ...	17,792 0 0	17,776 0 0	13 0 0	...	1,095,306
Budaon ...	15,832 0 0	15,832 0 0	44 0 0	904 0 0	889,810
Bareilly ...	12,504 0 0	12,504 0 0	37 8 0	495 8 0	1,464,199
Shahjehanpore ...	10,544 0 0	10,544 0 0	4 0 0	...	918,850
Turrai ...	48 0 0	48 0 0	...	...	91,802
Muttra ...	17,208 0 0	17,208 0 0	62 0 0	229 8 0	800,321
Agra ...	20,072 0 0	20,032 0 0	21 8 0	60 8 0	1,029,760
Furruckabad ...	16,916 0 0	16,916 0 0	116 8 0	430 14 0	915,943
Mynpoory ...	11,792 0 0	11,792 0 0	2 8 0	572 0 0	700,220
Etawah ...	10,560 0 0	10,560 0 0	47 0 0	380 0 0	626,444
Etah ...	8,240 0 0	8,240 0 0	12 8 0	...	614,351
Jaloun ...	5,016 0 0	5,008 0 0	...	...	405,272
Jhansie ...	7,568 0 0	6,432 0 0	...	25 8 0	357,774
Lullutpore ...	880 0 0	880 0 0	...	28 0 0	248,146
Cawnpore ...	42,232 0 0	42,132 0 0	36 8 0	8 8 0	1,188,862
Futtehpore ...	13,888 0 0	13,736 0 0	11 8 ..	1,14 0 0	680,786
Banda ...	10,708 0 0	10,684 0 0	14 0 1	93 0 0	724,372
Allahabad ...	37,254 0 0	37,254 0 0	6 0 ...	41 0 0	1,393,183
Humeerpore ...	4,456 0 0	4,448 0 0	7 13	98 0 0	520,941
Jounpore ...	9,592 0 0	9,592 0 0	.. ...	29 0 0	1,015,427
Goruckpore ...	10,888 0 0	10,888 0 0	13 ...	66 0 0	1,983,816
Bustee ...	10,648 0 0	10,632 0 0	6	69 0 0	1,455,697
Azimgurh ...	18,296 0 0	16,893 12 0	0 ...	71 0 0	1,385,872
Mirzapore ...	19,676 0 0	19,676 0 0	7	1,10	1,054,413
Benares ...	13,712 0 0	13,712 0 0	45 8 0	1,072 0 0	793,277
Ghazeepore ...	14,904 0 0	14,717 0 0	...	2,324 0 0	1,382,403
Ajmere ...	12,080 0 0	11,783 0 0	17 0 0	...	426,268
TOTAL ...	5,13,430 0 0	5,08,354 14 9	698 7 0	32,439 6 0	30,016,137

BOARD OF REVENUE, N. W. P.,
ALLAHABAD;
The 27th November 1869.

W. C. PLOWDEN,
Secretary.

B.

ACT IX

District Statement showing classification of

OF 1868.

persons and numbers of persons assessed.

Districts.	Over 40,000£. Class I.		Over 20,000£. Class II.		Over 10,000£. Class III.		Over 5,000£. Class IV.		Over 2,500£. Class V.		Over 1,000£. Class VI.		Over 500£. Class VII.		Over 250£. Class VIII.		Over 100£. Class IX.		Over 50£. Class X.		Total.	
	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.
1. Dehra Doon ...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	10	3	29	20	6	93	47	117
2. Seharunpore ...	...	...	...	...	...	...	...	...	...	...	1	6	..	23	9	41	6	236	...	760	16	1,066
3. Mozuffernuggur ...	...	...	...	...	...	...	...	...	...	...	...	6	1	14	4	46	2	266	...	910	7	1,242
4. Meerut ...	...	...	...	...	...	...	...	...	...	1	...	13	7	52	8	213	5	573	2	4,254	22	5,106
5. Boolundshuhur ...	...	...	...	...	...	..	...	...	...	1	...	2	...	6	...	45	...	204	...	756	...	1,014
6. Allygurh ...	...	...	...	...	...	...	1	...	...	3	...	18	3	39	1	115	4	329	...	901	9	1,405
7. Kumaon ...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	6	8	3	34	3	167	13	211
8. Gurhwal ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	21	...	104	...	127
9. Bijnour ...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	12	...	117	...	377	...	515
10. Moradabad ...	...	...	...	...	...	...	...	...	...	1	...	1	1	26	...	60	...	315	...	954	1	1,357
11. Budaon ..	...	...	..	...	...	...	...	...	...	...	...	6	...	26	...	104	...	235	...	609	...	980
12. Bareilly ...	...	...	...	...	...	...	...	...	...	2	...	3	1	23	1	27	2	230	1	563	5	848
13. Shahjehanpore ...	...	...	...	...	...	...	1	...	...	...	1	3	2	10	1	36	3	168	...	491	8	708
14. Turrai ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	6
15. Muttra ...	...	...	...	...	...	1	...	...	...	1	...	6	1	13	...	42	1	228	...	978	2	1,269
16. Agra ..	...	...	...	...	...	...	...	1	1	6	1	17	7	16	8	81	10	206	4	594	31	921
17. Furruckabad ...	...	...	...	...	...	...	...	1	...	2	...	13	1	46	2	46	2	210	...	523	5	841
18. Mynpoory ...	...	...	...	...	...	...	...	...	...	...	1	2	...	7	...	40	...	234	...	676	1	959
19. Etawah ..	...	...	...	...	...	...	...	...	...	3	...	1	...	7	1	46	...	182	...	481	1	720
20. Etah .	...	...	...	...	...	...	...	...	...	...	1	...	...	3	...	27	1	133	...	577	2	740
21. Jaloun ...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	...	10	...	101	...	295	...	420
22. Jhansie ...	...	...	...	...	...	...	...	...	...	...	...	13	...	9	...	24	...	91	...	294	...	431
23. Lullutpore ...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...	12	...	56	...	72
24. Cawnpore ...	...	...	...	1	..	...	...	...	...	13	2	39	4	71	6	133	4	406	...	1,144	18	1,807
25. Futtehpore ...	...	...	...	...	...	...	...	...	...	1	...	4	...	10	...	37	...	200	1	930	1	1,182
26. Banda ...	...	...	...	...	...	...	...	...	...	...	...	2	...	19	...	42	...	210	...	481	...	754
27. Allahabad ...	...	...	...	...	...	...	...	...	...	...	11	15	6	31	10	75	36	263	13	988	81	1,386
28. Humeerpore ...	...	...	...	...	...	4	1	3	4	7	...	...	...	3	...	18	...	73	...	291	...	385
29. Jounpore ...	...	...	...	...	...	...	...	...	...	...	...	...	1	11	5	19	4	117	...	667	10	815
30. Goruckpore ...	...	...	...	...	...	...	...	...	...	1	...	5	...	8	1	24	3	126	6	692	11	856
31. Bustee ..	...	...	...	...	..	...	...	...	1	1	...	2	...	13	...	21	...	170	...	716	...	922
32. Azimgurh ...	...	...	...	...	...	...	...	...	...	...	...	2	2	12	2	64	2	257	...	1,109	6	1,147
33. Mirzapore ...	...	...	...	...	...	...	...	...	...	3	3	22	2	27	4	43	12	184	...	548	23	829
34. Benares ...	...	...	...	...	...	...	2	1	...	4	2	10	...	33	1	48	4	161	1	468	8	722
35. Ghazeepore ...	...	...	...	...	...	...	...	...	...	2	...	3	1	24	1	56	3	248	1	765	6	1,096
36. Ajmere ...	...	...	...	...	...	...	...	1	...	4	...	8	...	6	...	42	...	155	...	470	...	686
TOTAL ...	...	...	1	...	5	5	7	6	56		23	222	43	616	81	1,652	136	6,715	38	24,688	332	33,962

BOARD OF REVENUE, N. W. P.,
ALLAHABAD,
The 27th November 1869.

W. C. PLOWDEN,
Secretary.

D.

Comparative Statement showing the number of persons assessed on incomes over Rs. 500, under Act IX of 1868 and Acts XXI and XXIX of 1867, under the classification of Act XXI of 1867.

District.	Population.	Class I.		Class II.	
		1867.	1868.	1867.	1868.
		With income above 2,500 £.		Between 1,000 £ and 2,500 £.	
Dehra Doon	1,02,831	...	...	...	...
Seharunpore	8,66,483	1	...	7	7
Mozuffernugger ...	6,82,189	...	...	4	6
Meerut	11,99,593	2	1	10	13
Boolundshuhur	8,00,481	1	1	2	2
Allygurh	9,25,535	3	4	4	18
Kumaon	3,85,790	...	...	...	...
Gurhwal	2,48,742	...	...	...	...
Bijnour	6,90,975	...	...	...	...
Moradabad	10,95,306	...	1	4	1
Budaon	8,89,810	1	...	7	6
Bareilly	14,64,199	2	2	8	8
Shahjehanpore	9,18,850	1	1	...	4
Turrai	91,802	...	...	...	...
Muttra	8,00,321	2	2	6	6
Agra	10,28,544	3	8	18	18
Furruckabad	9,15,943	2	3	10	13
Mynpoory	7,00,220	...	...	3	3
Etawah	6,26,444	1	3	7	1
Etah	6,14,351	...	...	1	1
Jaloun	4,05,272	...	...	...	...
Jhansie	3,57,774	2	...	17	13
Lullutpore	2,48,146	...	...	1	...
Cawnpore	11,88,862	13	14	51	41
Futtehpore	6,80,786	...	1	4	4
Banda	7,24,372	...	...	2	2
Allahabad	13,93,183	11	19	23	26
Hamerpore	5,20,941	...	...	...	...
Jounpore	10,15,427	1	1	8	...
Goruckpore	19,83,816	1	2	6	5
Bustee	14,55,697	...	...	2	2
Azimgurh	13,85,872	5	3	1	2
Mirzapore	10,54,413	9	7	32	25
Benares	7,93,277	5	2	12	12
Ghazeepore	13,32,403	2	...	20	3
Ajmere	4,26,268	6	4	7	8
Total ...	3,00,14,921	74	80	277	245

Board of Revenue, N. W. P.,
ALLAHABAD;
The 27th November 1869.

Class III.		Class IV.		Class V.		Total.	
Number of persons assessed under Act.							
1867.	1868.	1867.	1868.	1867.	1868.	1867.	1868.
Between 500 £ and 1,000 £.		Between 100 £ and 500 £.		Between 50 £ and 100 £.			
6	3	46	62	79	99	131	164
46	23	309	292	718	760	1,081	1,082
17	15	317	318	764	910	1,102	1,249
38	59	471	799	1,173	4,256	1,694	5,128
11	6	141	249	486	756	641	1,014
66	42	334	449	686	901	1,093	1,414
3	3	44	51	62	170	109	224
...	...	15	23	45	104	60	127
10	9	94	129	334	377	438	515
14	27	254	375	628	954	900	1,358
10	26	153	339	408	609	579	980
32	24	275	260	573	564	890	853
16	12	197	208	482	491	696	716
...	...	2	...	...	6	2	6
19	14	181	271	676	978	884	1,271
23	23	281	305	472	598	797	952
40	47	287	260	545	523	884	846
14	7	185	274	467	676	669	960
35	7	228	229	484	481	755	721
3	3	105	161	375	577	484	742
18	14	107	111	231	295	356	420
28	9	147	115	341	294	535	431
5	2	48	14	145	56	199	72
109	75	655	549	1,009	1,144	1,837	1,823
17	10	231	237	717	931	969	1,183
21	19	174	252	422	481	619	754
64	37	645	384	899	1,001	1,642	1,467
3	3	93	91	249	291	345	385
19	12	167	145	485	667	680	825
13	8	312	154	833	698	1,165	867
17	13	119	191	343	716	481	922
43	14	345	325	1,027	1,109	1,421	1,453
64	29	358	243	642	548	1,105	852
62	33	264	214	551	469	894	730
57	25	270	308	847	766	1,196	1,102
9	6	169	197	361	470	552	686
952	659	7,977	8,584	18,559	24,726	27,885	34,294

W. C. PLOWDEN,
Secretary.

E.

Statement showing total realizations under Schedule I, Act XXXII of 1860, *in* 1863-64, *under on trades and professions where incomes exceed Rs.* 500 *; also the incidence of the Certificate in each* 100 *of the population, for the Act XXI of* 1867, *under Act IX of* 1868, *and the number of assessments made in those years Tax (IX of* 1868) *per head on the population, and the number of persons charged to the Act Districts of the North-Western Provinces.*

	Districts.	Realized under Act IX of 1868.	Realized under Act XXI of 1867.	1 Per cent. Income Tax of 1863-64, Schedules 2, 3, and 4 in 1864-65.	No. of persons charged in 1868.	No. of persons charged in 1867.	No. of persons charged under Schedules II and III, 1863-64.	No. of persons charged in every hundred in 1868.	Incidence of Tax in 1868 per head.
1	Meerut	57,739	28,450	21,242	5,128	1,694	1,866	·43	0 0 9
2	Cawnpore	42,132	51,790	16,828	1,823	1,837	1,404	·15	0 0 7
3	Allahabad	37,254	39,390	40,826	1,467	1,642	1,741	·11	0 0 5
4	Allygurh	25,416	22,232	12,912	1,414	1,093	1,019	·15	0 0 5
5	Goruckpore, Bustee	21,520	22,970	15,735	...	...	...	...	...
6	Agra	20,032	18,740	18,453	952	797	1,036	·09	0 0 4
7	Mirzapore	19,676	25,870	32,912	852	1,105	2,004	·08	0 0 4
8	Moradabad	17,776	13,550	10,539	1,358	900	810	·12	0 0 3
9	Muttra	17,208	14,380	18,777	1,271	884	1,490	·16	0 0 4
10	Furruckabad	16,916	18,190	13,179	846	884	780	·09	0 0 4
11	Azimgurh	16,893	24,170	13,791	1,453	1,421	1,510	·10	0 0 2
12	Budaon	15,832	10,040	9,726	980	579	864	·11	0 0 3
13	Mozuffernuggur	15,728	16,480	10,137	1,249	1,102	946	·18	0 0 4
14	Seharunpore	14,912	19,860	10,536	1,082	1,081	885	·12	0 0 3
15	Ghazeepore	14,717	24,570	10,122	1,102	1,196	1,177	·08	0 0 2
16	Futtehpore	13,736	14,290	11,894	1,183	969	1,546	·17	0 0 4
17	Benares	13,712	17,240	26,739	730	894	1,933	·09	0 0 3
18	Bareilly	12,504	17,020	9,189	853	890	977	·06	0 0 2
19	Boolundshuhur	12,312	9,660	7,612	1,014	641	693	·13	0 0 3
20	Mynpoory	11,792	9,636	4,344	960	669	432	·13	0 0 3
21	Ajmere	11,783	12,290	10,998	686	552	703	·16	0 0 5
22	Banda	10,684	10,196	8,593	754	619	670	·10	0 0 3
23	Etawah	10,560	14,726	4,659	721	755	358	·12	0 0 3
24	Shajehanpore	10,544	10,860	10,287	716	696	982	·08	0 0 2
25	Jounpore	9,592	12,170	6,616	825	680	705	·08	0 0 2
26	Etah	8,240	6,350	4,401	742	484	458	·12	0 0 3
27	Jhansie	6,432	12,398	5,200	481	585	260	·12	0 0 3
28	Bijnour	5,992	6,220	3,337	515	488	349	·07	0 0 2
29	Jaloun	5,008	6,250	4,513	420	356	469	·10	0 0 2
30	Humeerpore	4,448	4,617	2,819	385	345	310	·07	0 0 2
31	Kumaon	2,752	1,800	2,179	224	109	98	·06	0 0 1
32	Deyrah	2,336	2,810	3,091	164	131	182	·16	0 0 4
33	Gurhwal	1,248	750	679	127	60	24	·06	0 0 1
34	Lullutpore	880	3,110	1,163	72	199	90	·03	0 0 1
A.	Goruckpore	10,888	15,060	8,037	867	1,165	...	·04	0 0 1
B.	Bustee	10,632	7,910	6,627	922	481	1,792	·06	0 0 2

Board of Revenue, N. W. P.,
ALLAHABAD;
The 27th November 1869.

W. C. PLOWDEN,
Secretary.

F.

Statement showing realizations under Certificate Tax. Number of Assessments. Incidence of Tax on the Population. Number of persons taxed per cent. of the Population.

Districts.	Tax assessed for 1868-69.			
	Realizations.	Number of persons assessed.	Rate of incidence per head on the Population.	Number of persons charged in every hundred people.
Dehra Doon	2,336 0 0	164	0 0 4	·16
Seharunpore	14,912 0 0	1,082	0 0 3	·12
Mozuffernugger ...	15,728 0 0	1,249	0 0 4	·18
Meerut	57,739 2 9	5,128	0 0 9	·43
Boolundshuhur	12,312 0 0	1,014	0 0 3	·13
Allygurh	25,416 0 0	1,414	0 0 5	·15
Kumaon	2,752 0 0	224	0 0 1	·06
Gurhwal	1,248 0 0	127	0 0 1	·06
Bijnour	5,992 0 0	515	0 0 2	·07
Moradabad	17,776 0 0	1,358	0 0 3	·12
Budaon	15,832 0 0	980	0 0 3	·11
Bareilly	12,504 0 0	853	0 0 2	·06
Shahjehanpore	10,544 0 0	716	0 0 2	·08
Turrai	48 0 0	.....	.....	.....
Muttra	17,208 0 0	1,271	0 0 4	·16
Agra	20,032 0 0	952	0 0 4	·09
Furruckabad	16,916 0 0	846	0 0 4	·09
Mynpoory	11,792 0 0	960	0 0 3	·13
Etawah	10,560 0 0	721	0 0 3	·12
Etah	8,240 0 0	742	0 0 3	·12
Jaloun	5,008 0 0	420	0 0 2	·10
Jhansie	6,432 0 0	131	0 0 3	·12
Lullutpore	880 0 0	72	0 0 1	·03
Cawnpore	42,132 0 0	1,823	0 0 7	·15
Futtehpore	13,736 0 0	1,183	0 0 4	·17
Banda	10,684 0 0	754	0 0 3	·10
Allahabad	37,251 0 0	1,467	0 0 5	·11
Humeerpore	4,448 0 0	385	0 0 2	·07
Jounpore	9,592 0 0	825	0 0 2	·08
Goruckpore	10,888 0 0	867	0 0 1	·04
Bustee	10,632 0 0	922	0 0 2	·06
Azimgurh	16,893 0 0	1,453	0 0 2	·10
Mirzapore	19,676 0 0	852	0 0 4	·08
Benares	13,712 0 0	730	0 0 3	·09
Ghazeepore	14,717 0 0	1,102	0 0 2	·08
Ajmere	11,783 0 0	686	0 0 5	·16
	5,08,354 14 9			

W. C. PLOWDEN,
Secretary.

Board of Revenue, N. W. P.,
ALLAHABAD;
The 27th November 1869.

G.

Statement showing total and urban population of each district in the North-Western Provinces, also the incidence of the Certificate Tax per head on the Population, and the number of persons taxed in every 10,000.

Districts.	Number of persons taxed in every 10,000.	Incidence of tax per head on population.	Population.	
			Total.	Urban.
Meerut	43	9	1,199,593	174,529
Mozuffernuggur	18	4	682,189	83,236
Futtehpore	17	4	680,786	37,548
Muttra	16	4	800,321	124,364
Ajmere	16	5	426,268	71,086
Dehra	16	4	102,831	6,847
Cawnpore	15	7	1,188,862	144,561
Allygurh	15	5	925,585	123,289
Boolundshuhur	13	3	800,481	110,787
Mynpoory	13	3	700,220	42,967
Seharunpore	12	3	866,483	124,109
Moradabad	12	3	1,095,306	209,586
Etawah	12	3	626,444	39,919
Etah...	12	3	614,351	59,788
Jhansie	12	3	357,774	49,070
Allahabad	11	5	1,393,183	105,926
Budaon	11	3	889,810	83,321
Jaloun	10	2	405,272	54,058
Banda	10	3	724,372	44,793
Azimgurh	10	2	1,385,872	36,340
Agra	9	4	1,028,544	206,656
Furruckabad	9	4	915,943	150,189
Benares	9	3	793,277	182,268
Shahjehanpore	8	2	918,850	100,744
Jounpore	8	2	1,015,427	33,306
Mirzapore	8	4	1,054,413	81,974
Ghazeepore	8	2	1,332,403	140,492
Bijnour	7	2	690,975	126,941
Humeerpore	7	2	520,941	55,831
Kumaon	6	1	385,790	6,151
Gurhwal	6	1	248,742	.....
Bareilly	6	2	1,464,199	157,847
Bustee	6	2	1,455,697	27,458
Goruckpore	4	1	1,983,816	147,552
Lullutpore	3	1	248,146	9,258

Board of Revenue, N. W. P.,
ALLAHABAD;
The 27th November 1869.

W. C. PLOWDEN,
Secretary.

FORM 14.

Quarterly Return of assessments made under Schedule A of Act IX of 1868, *on persons or firms, for the quarter ending* 30*th April* 1869.

Class.	No. of assessments made since the 1st of May 1868.				Tax assessed.				
	At full Rate.	At ¾ Rate.	At ½ Rate.	At ¼ Rate.	Demand.	Realizations.	Balance.	Discount.	Refunds.
1	2	3	4	5	6	7	8	9	10
					Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Class I	...	...	...	...	...	...	...	...	...
Class II	1	...	...	...	3,200 0 0	3,200 0 0	...	...	40 0 0
Class III	5	...	...	...	8,000 0 0	8,000 0 0	...	20 0 0	720 0 0
Class IV	12	...	...	...	9,600 0 0	9,600 0 0	...	12 0 0	880 0 0
Class V	62	...	...	...	24,720 0 0	24,620 0 0	100 0 0	73 0 0	1,963 0 0
Class VI	245	...	...	...	39,200 0 0	38,312 0 0	888 0 0	128 2 0	2,943 8 0
Class VII	646	1	12	...	52,220 0 0	51,734 0 0	486 0 0	227 5 0	3,663 0 0
Class VIII	1,721	1	11	...	69,090 0 0	68,623 0 0	467 0 0	238 0 0	6,428 14 0
Class IX	6,849	...	2	...	1,09,600 0 0	1,09,224 0 0	376 0 0	...	5,421 8 0
Class X	24,724	...	2	...	1,97,800 0 0	1,95,041 14 9	2,758 1 3	...	10,379 8 0
Total ...	34,265	2	27	...	5,13,430 0 0	5,08,354 14 9	5,075 1 3	698 7 0	32,439 6 0

Board of Revenue N. W. P.,
Allahabad;
The 27th November 1869.

W. C. PLOWDEN,
Secretary.

FORM 15.

Quarterly Return of Assessments made under Section 22 *of Act IX of* 1868, *on Companies, for the quarter ending* 30*th April* 1869.

Mode of Assessment.	No. of Companies assessed since 1st May 1868.	No. of Branches or Agencies.	Demand.	Realizations.	Balance.
1	2	3	4	5	6
			Rs. A. P.	Rs. A. P.	Rs. A. P.
Companies assessed at Rs. 500 per Branch or Agency. — On 1 Branch or Agency	1	...	500 0 0	500 0 0	...
„ 2 Branches or Agencies	...	...	...	...	...
„ 3 or 4 Branches or Agencies	...	...	...	...	...
„ 5 to 8 ditto ditto	...	...	...	...	...
„ 8 to 20 ditto ditto	...	...	...	...	...
„ More than 20 Branches or Agencies	...	...	...	...	...
Companies assessed 1 per cent. on their dividends. — Whose dividend was less than Rs. 500	...	...	...	...	...
„ „ „ equal to or exceeded Rs. 500, but was less than Rs. 1,000	...	...	...	...	...
„ „ „ „ „ 1,000 „ „ 2,500	1	...	24 6 0	24 6 0	...
„ „ „ „ „ 2,500 „ „ 5,000	...	...	...	...	...
„ „ „ „ „ 5,000 „ „ 10,000	...	...	...	...	...
„ „ „ „ „ 10,000 „ „ 25,000	2	3	653 4 0	653 4 0	...
„ „ „ „ „ 25,000 „ „ 50,000	2	...	590 0 0	590 0 0	...
„ „ „ „ „ 50,000 „ „ 1,00,000	2	2	1,109 0 0	809 0 0	300 0 0
„ „ „ „ „ 1,00,000 „ „ 2,00,000	...	...	...	...	...
„ „ „ „ „ 2,00,000 „ „ 4,00,000	...	...	...	...	...
„ „ „ „ „ 4,00,000	...	...	...	...	...
Total ...	8	5	2,876 10 0	2,576 10 0	300 0 0

Board of Revenue, N. W. P.,
Allahabad;
The 27th November 1869.

W. C. PLOWDEN,
Secretary.

FORM 16.

Quarterly Return of Assessment made under Section 23 *of Act IX of* 1868, *on Salaries of Government Officials, during the quarter ending* 30*th April* 1869.

Class.	Number assessed since 1st May 1868.	Amount of assessment.	Refunds.
1	2	3	4
		Rs. A. P.	Rs. A. P.
Assessed on salaries equal to or exceeding Rs. 1,000 per annum, but less than Rs. 2,500 ...	758	10,361 10 0	6 0 0
,, ,, ,, ,, 2,500 ,, ,, ,, 5,000 ...	292	8,640 11 0	15 0 0
,, ,, ,, ,, 5,000 ,, ,, ,, 10,000 ...	252	14,223 13 0	112 0 0
,, ,, ,, ,, 10,000 ,, ,, ,, 25,000 ...	117	12,198 12 0	...
,, ,, ,, ,, 25,000 ,, ,, ,, 50,000 ...	63	14,282 5 0	...
,, ,, ,, ,, 50,000 ,, ,, ,, 1,00,000 ...	4	908 2 0	...
,, ,, ,, ,, 1,00,000 ,, ,, ,, 2,00,000 ...	1	749 4 0	...
,, ,, ,, ,, 2,00,000 ,, ,, ,, 4,00,000 ...	...	...	...
,, ,, ,, ,, 4,00,000	...	...	...
TOTAL ...	1,487	61,364 9 0	133 0 0

BOARD OF REVENUE, N. W. P.,
ALLAHABAD;
The 27th November 1869.

W. C. PLOWDEN,
Secretary.

FORM 1.

Supplemental Statement of Assessments made under Section 23 *of Act IX of* 1868 *on Government Officials during the year* 1868-69, *required under Para.* 3 *of Government of India's letter No.* 538, *dated* 22*nd January* 1869, *to the address of the Accountant General of Bombay.*

Class.	Number assessed in the year 1868-69.	Amount of Assessment.
1	2	3
		Rs. A. P.
Assessed on Salaries equal to or exceeding Rs. 1,000 per annum, but less than ... ... Rs. 2,500	758	10,355 10 0
,, ,, ,, ,, ,, ,, 2,500 ,, ,, ... ,, 5,000	292	8,625 11 0
,, ,, ,, ,, ,, ,, 5,000 ,, ,, ... ,, 10,000	252	14,111 13 0
,, ,, ,, ,, ,, ,, 10,000 ,, ,, ... ,, 25,000	117	12,198 12 0
,, ,, ,, ,, ,, ,, 25,000 ,, ,, ... ,, 50,000	63	14,282 5 0
,, ,, ,, ,, ,, ,, 50,000 ,, ,, ... ,, 1,00,000	4	908 2 0
,, ,, ,, ,, ,, ,, 1,00,000 ,, ,, ... ,, 2,00,000	1	749 4 0
,, ,, ,, ,, ,, ,, 2,00,000 ,, ,, ... ,, 4,00,000	...	...
,, ,, ,, ,, ,, ,, 4,00,000 ,, ,, ... ,, ...	...	...
TOTAL ...	1,487	61,231 9 0

BOARD OF REVENUE, N. W. P.,
ALLAHABAD;
The 27th November 1869.

W. C. PLOWDEN,
Secretary.

FORM 17.

Quarterly Return of Assessments made under Section 24 of Act IX of 1868, *on Servants of Companies, for the Quarter ending 30th April* 1869.

Class.	Number assessed since 1st May 1868.	Amount of Assessment.	Refunds.
1	2	3	4
		Rs. A. P.	Rs. A. P.
Assessed on Salaries equal to or exceeding Rs. 1,000 per annum, but less than Rs. 2,500 ...	78	917 10 5	18 9 0
„ „ „ „ „ 2,500 „ „ „ 5,000 ...	37	903 13 6	16 2 0
„ „ „ „ „ 5,000 „ „ „ 10,000 ...	14	615 9 0	42 0 0
„ „ „ „ „ 10,000 „ „ „ 25,000 ...	3	136 0 0	...
„ „ „ „ „ 25,000 „ „ „ 50,000 ...	...	...	...
„ „ „ „ „ 50,000 „ „ „ 1,00,000 ...	...	...	...
„ „ „ „ „ 1,00,000 „ „ „ 2,00,000 ...	...	...	...
„ „ „ „ „ 2,00,000 „ „ „ 4,00,000 ...	...	...	...
„ „ „ „ „ 4,00,000	...	...	...
TOTAL ...	132	2,573 0 11	76 11 0

BOARD OF REVENUE, N. W. P.,
ALLAHABAD;
The 27th November 1869.

W. C. PLOWDEN,
Secretary.

FORM 18.

Annual Return showing details of assessments made under Schedule A of Act IX of 1868, *on different Professions and Trades, for* 1868-69, *for Europeans, Eurasians, &c.*

		PROFESSION OR TRADE.	No. in Class I.	No. in Class II.	No. in Class III.	No. in Class IV.	No. in Class V.	No. in Class VI.	No. in Class VII.	No. in Class VIII.	No. in Class IX.	No. in Class X.	TOTAL.
		1	2	3	4	5	6	7	8	9	10	11	12
		I.—Professions.											
a		Religion	...	...	...	...	...	...	...	...	...	...	...
b		Education and Science	...	...	...	...	...	...	...	2	18	1	21
c		Fine Arts	...	...	...	...	...	...	...	1	1	2	4
d		Law	...	...	...	...	2	2	6	7	9	2	28
e		Medicine	...	...	...	...	...	1	1	3	4	6	15
f		Engineering	...	...	...	...	...	...	2	1	1	1	5
		II.—Employments.											
a		Clerks, Baliffs, Shopmen (salaried) ...	...	...	...	...	...	1	4	22	38	6	71
b		Servants (domestic)	...	...	...	...	...	...	1	6	12	...	19
c		Ditto (jobbed)	...	...	...	...	...	1	...	...	1	...	2
d		Artizans, not keeping shops for the sale of manufactured articles	...	...	...	...	...	...	...	1	3	1	5
		III.—Commerce.											
a		Agents	...	...	...	...	1	4	...	4	5	...	14
b		Bankers and Money-dealers	...	...	...	...	...	...	1	...	...	...	1
c		Merchants (not Manufacturers) ...	...	...	...	...	...	...	...	...	...	...	...
	1	General	...	...	...	...	2	4	13	8	14	3	44
	2	Piece Goods	...	...	...	...	...	...	...	3	3	3	9
	3	Grain	...	...	...	...	...	...	...	...	...	...	...
	4	Salt	...	...	...	...	...	...	...	...	...	...	...
	5	Others	...	...	...	...	...	...	3	5	1	3	12

FORM 18,—*continued.*

Annual Return showing details of assessments made under Schedule A of Act IX of 1868, *on different Professions and Trades, for* 1868-69, *for Europeans, Eurasians, &c.*

		Profession or Trade.	No. in Class I.	No. in Class II.	No. in Class III.	No. in Class IV.	No. in Class V.	No. in Class VI.	No. in Class VII.	No. in Class VIII.	No. in Class IX.	No. in Class X.	Total.
		1	2	3	4	5	6	7	8	9	10	11	12
d.		*Traders in—*											
	1	Woven fabrics and dress						4	1		4	2	13
	2	Building materials and furniture				1	1						
	3	Metals									3		3
	4	Food								1	3	1	6
	5	Salt											
	6	Spirits, Drugs, and Tobacco				1							
	7	Fuel								1			1
	8	Animal and vegetable substances (not food)							4	2	5	3	14
	9	Books and Stationery								2			2
	10	Miscellaneous								1			1
e.		Carriers											
f.		Dealers in animals											
g.		*Manufacturers (Wholesale) of—*											
	1	Cotton Goods											
	2	Woollen Goods											
	3	Jute, Flax, and Hemp											
	4	Silk											
	5	Indigo				1	2	6	7	10	8	4	38
	6	Sugar											
	7	Tea											
	8	Metals and Machinery											
	9	Others								1	3		4
		Total				5	6	23	43	81	136	38	332

Board of Revenue, N. W. P.,
Allahabad;
The 27th November 1869.

W. C. PLOWDEN,
Secretary.

FORM 18.

Annual Return showing details of assessments made under Schedule A of Act IX of 1868, *on different Professions and Trades, for* 1868, *for Natives.*

		Profession or Trade.	No. in Class I.	No. in Class II.	No. in Class III.	No. in Class IV.	No. in Class V.	No. in Class VI.	No. in Class VII.	No. in Class VIII.	No. in Class IX.	No. in Class X.	Total.
		1	2	3	4	5	6	7	8	9	10	11	12
		I.—Professions.											
a.		Religion								1	3	25	29
b.		Education and Science											
c.		Fine Arts									3	54	57
d.		Law						3	7	21	49	176	343	599
e.		Medicine									1	3	9	13
f.		Engineering							2	4	3	8	13	30
		II.—Employments.											
a.		Clerks, Bailiffs, Shopmen (salaried)									2	5	32	39
b.		Servants (*domestic*)								1	1	11	4	17
c.		*Ditto* (jobbed)								2	10	56	114	182
d.		Artizans (not keeping shops for the sale of manufactured articles)									2	28	82	112
		III.—Commerce.											
a.		Agents								1	4	12	22	39
b.		Bankers and Money-dealers				5	6	42	124	312	824	2,999	9,088	13,400
c.		Merchants (not Manufacturers)												
	1	General					1	6	44	84	128	467	1,560	2,290
	2	Piece Goods							16	47	101	438	1,584	2,186
	3	Grain						1	6	28	114	644	3,094	3,887
	4	Salt								1	5	37	163	206
	5	Others							6	32	110	536	2,802	3,486

FORM No. 18,—*continued.*

Annual Return showing details of assessments made under Schedule A of Act IX of 1868, on different Professions and Trades, for 1868, for Natives.

	Profession or Trade.	No. in Class I.	No. in Class II.	No. in Class III.	No. in Class IV.	No. in Class V.	No. in Class VI.	No. in Class VII.	No. in Class VIII.	No. in Class IX.	No. in Class X.	Total.
	1	2	3	4	5	6	7	8	9	10	11	12
d	*Traders in—*											
	1 Woven fabrics and dress ...	...	...	...	...	...	...	2	17	50	136	205
	2 Building materials and furniture	...	...	...	...	...	...	1	9	23	121	154
	3 Metals	...	...	...	...	...	...	3	13	42	269	327
	4 Food	...	...	...	...	...	...	2	19	147	1,115	1,283
	5 Salt	...	...	...	...	...	...	...	...	6	14	20
	6 Spirits, Drugs and Tobacco	...	...	...	...	1	2	3	9	45	153	213
	7 Fuel	...	...	...	...	...	...	1	2	24	119	146
	8 Animal and vegetable substances (not food)	...	...	...	...	...	...	1	11	17	98	127
	9 Books and Stationery	...	...	...	...	1	...	...	5	5	36	47
	10 Miscellaneous ...	...	...	...	...	...	4	15	52	176	1,115	1,362
e	Carriers	...	...	...	...	...	...	...	...	1	54	55
f	Dealers in animals ...	...	...	...	...	...	...	5	1	28	296	330
g	*Manufacturers (Wholesale) of—*											
	1 Cotton Goods... ...	...	...	...	...	...	...	3	7	30	82	122
	2 Woollen Goods ...	...	...	...	...	...	...	1	...	1	7	9
	3 Jute, Flax, and Hemp	...	...	...	...	...	...	...	1	1	3	5
	4 Silk	...	...	...	...	...	...	...	2	10	11	26
	5 Indigo	...	...	...	...	2	8	14	47	92	176	340
	6 Sugar	...	...	...	...	...	2	28	97	469	1,512	2,108
	7 Tea	...	...	...	...	...	1	1	2	40	182	226
	8 Metals and Machinery	...	...	...	...	...	...	...	1	22	90	113
	9 Others	...	...	...	...	...	...	...	2	60	110	172
	Total ...	...	1	5	7	56	222	616	1,652	6,715	24,688	33,962

W. C. PLOWDEN,
Secretary.

Board of Revenue, N. W. P.,
Allahabad;
The 27th November 1869.

No. 898, dated 4th February, 1870.

From—G. H. M. Batten, Esq., *Under Secy. to the Govt. of India*, Financial Dept.,
To—*The Secretary to the Government, N. W. Provinces.*

I am directed to acknowledge the receipt of your letter No. 53 A, dated the 7th December last, forwarding a report by the Board of Revenue on the working of the Certificate Tax Act (IX of 1868) in the different districts of the North-Western Provinces, together with a copy of the orders of the local Government thereon.

2. The Board's report is interesting and valuable. At the same time, by the Board's own admission, it tells of wholesale failure on the part of the District Revenue Officers of the North-Western Provinces to collect the tax properly, and it must be added that the Board itself has not, from whatever cause, succeeded in duly controlling the Subordinate Revenue Officers. The Governor General in Council is glad to observe that the Meerut District is an exception to this state of things. The Collector of Meerut and his Subordinates have done their work intelligently and faithfully, and are entitled to the thanks of the Government of India. The results achieved by them shew what might have been done by an intelligent attention to their duties by the Revenue Officers generally, and by a really just and liberal assessment of the tax. His Excellency in Council desires that the passage from Mr. Forbes' Report, quoted at para. 51 of the Board's letter, may be circulated among the other District Officers, and that it may be pointed out to them once more that if, through inertness or carelessness, or a mistaken leniency, Collectors fail in recovering the just dues of the State, real injustice is done to the whole remaining body of tax-payers, upon whom the burden of any deficit must eventually fall.

3. From Appendix G of the Report, it appears that the district of Meerut, of which the total population is about one twenty-fifth of the whole population of the North-Western Provinces, and of which the urban population is about one-eighteenth of the entire urban population of those provinces, contributed nearly one-ninth of the whole tax. In this district, which does not contain many towns of great commercial importance, 5,218 persons were assessed (excluding assessments on official salaries). They paid Rs. 57,739, being at the rate of 9 pie per head of the population, and including 43 persons in every 10,000. In no other district were there more than 1,823 persons assessed. This is the number in the Cawnpore District, in which the work was next best done, and which produced Rs. 42,132, being at the rate of 7 pie per head of the population, only 15 persons in every 10,000 being assessed. In 23 out of the 35 districts, the incidence of the tax per head of the population was 3 pie or less. In no district, except Meerut, were more than 18 persons assessed in every 10,000, and in about half of the districts the number fell to 10 persons or less.

4. The district of Agra, for instance, the population of which is about one-nineteenth of the entire population of the North-Western Provinces, and the urban population of which is about one-fifteenth of the entire urban population of those provinces, contributed little more than one-twenty-fifth of the whole tax, or Rs. 20,032, paid by 952 persons, being at the rate of 4 pie per head of the population, and including only 9 persons in every 10,000. And this is not one of the districts which the Lieutenant Governor has mentioned as conspicuous for failure.

5. Again the district of Furruckabad paid only Rs. 16,916, that of Allahabad Rs. 37,254, that of Benares Rs. 13,712, that of Mirzapore only Rs. 19,676. The low assessment of these large and rich districts as compared with Meerut is manifest. Further, the Board justly observe that "Goruckpore, Bareilly, Ghazeepore, Jounpore, Shahjehanpore are amongst the districts which are conspicuous for the excessively light incidence of the tax."

6. In para. 4 the Board remark that the great firm of the Mutra Seths (bankers) is conspicuous by its absence; in para. 19 that "there are many cases

where rich priests have escaped taxation." Again, in para. 47, the Board remark—"It cannot for a moment be credited that the population of Futtehpore and Mozuffernuggur *quâ* liability to certificate tax is four times as favorably situated as that of Goruckpore, twice as favorably situated as that of Bareilly, Shahjehanpore, Ghazeepore, Jounpore, Azimgurh." Yet such is the strange result pourtrayed by the fiscal returns!

7. In short, after presenting a review which literally abounds with instances of failure, the Board conclude by remarking that "the statements altogether indicate what seems a very unsuccessful administration."

8. Now the Government of India must observe that something more is needed beyond an interesting and well constructed report. The Board of Revenue has produced a series of admirable reports ever since the introduction of the Income Tax Act of 1860, and for these they deserve great credit. But it is disappointing to find that the results repeatedly set forth with so much clearness should have led to such little improvement in administration. It will never suffice that confessions of failure on the part of the whole revenue administration should be published, unless amendment follows.

9. The Government of India regrets that the means have not yet been found of compelling all officers to do their full duty in respect of these particular taxes, and positively expects that such means will be found in the future. The censure of the Government of India should be conveyed to the officers named as censurable in the orders of the local Government. It has very properly been ordered that all instances of failure are to be promptly brought to the notice of the Lieutenant Governor. Doubtless His Honor will see fit to adopt such measures (if instances shall unfortunately continue to occur) as may cause it to be generally understood that failure in the fair and moderate realization of imperial taxes cannot be tolerated.

10. The Governor General in Council regrets that he cannot accede to the recommendation of the local Government for the grant of a donation of Rs. 1,000 to Mr. Billings, the Deputy Collector of Meerut, for performing his duty with care and ability. To make such a grant is opposed to the principles of administration. Officers are expected to do their duty thoroughly without special reward. Because other officers have failed in their duty, that is no reason why the Government should pay specially those who attend intelligently and faithfully. Promotion in due course, earlier than less efficient officers, is the proper reward of the efficient and successful servants of the Government.

11. Moreover, there is no doubt that the assessment of the Income Tax, in the various forms in which it has been imposed, has been hitherto extremely insufficient; and though there is no reason to suspect any improper severity in Meerut, it would be objectionable to mark high assessments by special pecuniary acknowledgments.

12. But while constrained to make these strictures on the insufficiency of past and present results, the Governor General in Council is confident that the local Government will without delay take such steps as will ensure a reasonable degree of success in future.

13. These papers will be published in the Supplement to the *Gazette of India*, with the exception of Table C of the appendix to the Board's report, in respect to which I am desired to point out that, as almost all the information contained therein, as well as that relating to the five higher classes in Table B, could have been more clearly given in a few sentences, a needless expense was incurred in printing it. Such tabular printing, being costly and cumbersome, though invaluable in its place, should be used with great discretion.

ORDERED, that a copy of this letter, together with a copy of the papers therein referred to, with the exception of Statement C, be forwarded to the Home Department for publication in the Supplement to the *Gazette of India*.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 8 of 1870.

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, FEBRUARY 19, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

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GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 11th February 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding.*
His Excellency the Commander-in-Chief, K. C. B., G. C. S. I.
The Hon'ble G. Noble Taylor.
Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey, C. S. I.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
The Hon'ble F. R. Cockerell.

REGULATIONS AND ACTS CONSOLIDATION BILL.

The Hon'ble MR. COCKERELL, in moving for leave to introduce a Bill to consolidate and amend the law relating to the local extent of the general Regulations and Acts and to the local limits of the jurisdictions of the High

Courts and the Chief Controlling Revenue Authorities, said that the immediate cause of the present proposal to legislate in this matter was the discovery that the district or tract of country called the Dehra Doon was not subject to the general Regulations.

A case instituted in that district under Act X of 1859 (An Act to amend the law relating to the recovery of rent in the Presidency of Fort William in Bengal) recently came before the High Court of the North-Western Provinces in appeal, in which it was contended that, as the Act just mentioned was not legally in force in the Dehra Doon, the Court had no jurisdiction in the matter.

The High Court in its judgment held that the enactment referred to was simply an amending Act and contained no special provision by which it could, *per se*, have a wider application than the Regulations which it superseded.

As there was nothing to show that the Act had been put in force in the Dehra Doon district by any special procedure, the question of its legal operation therein turned upon the issue of the broader question as to whether the district was subject to the general Regulations. On this point the Court found that the effect of the several enactments relating to this district, passed between 1817 and 1829, was to place it in the category of districts not subject to the general Regulations.

For the past thirty years, the administration of justice had been carried on in the Dehra Doon in the belief that the general Regulations were legally applicable to that district, and it now became necessary to give, by legislative enactment, validity to proceedings which had taken place under an erroneous impression as to the state of the law, as well as to provide for the future legal operation of those Regulations within that locality.

The present need for legislation in this matter was thought to offer a fit opportunity for consolidating the law as to the local application of the general Regulations and Acts.

About two years ago a Repealing Act was passed in this Council, by which a very large number of obsolete Regulations and Acts was removed from the Statute-book. The avowed main object of that action of the Legislature was to clear the way for the work of consolidating the extant Regulations, which, it was hoped, might be undertaken at no distant period.

There was perhaps no single branch of that work in relation to which more could be done towards disencumbering the Statute-book than that which was comprised in the subject of this Bill. The older provinces of the empire were formed into Presidencies and subjected by Acts of Parliament to such Regulations as might be passed by the Governor General of India from time to time; but in the case of all subsequent acquisitions of territory, the operation of those Regulations was secured by special local enactment, and the result of this practice was that there was now a large accumulation of Regulations and Acts, enacted solely to provide for the extension of the operation of the general laws, and to define the local limits of the jurisdiction of the several Courts established in these newly acquired provinces or districts.

It would be the aim of the Bill to dispense with the necessity for retaining these extending enactments, by declaring, in concise form, what provinces were subject to the general Regulations and Acts of the Indian Legislature.

The Bill contemplated no extension of those laws to places in which they were not already in force, except in so far as might be found necessary to remedy any mistakes which might have occurred, as in the case of the district of the Dehra Doon.

The Hon'ble MR. STEPHEN asked permission to make a single remark on the principle of the Bill, because it formed part of an extensive scheme to

which he hoped to refer more particularly at some future time. The present Bill was a proposal for the consolidation of the laws defining the local extent of the general Regulations and the local limits of the jurisdictions of the High Courts and the Boards of Revenue: it would consolidate into one Act, he could not at present exactly say how many, but certainly not less than a hundred, enactments scattered throughout the Statute-book, and would reproduce in a single measure what now had to be searched for in a dozen volumes. That would give some idea of the extent to which consolidation might be carried. He could hardly imagine any legal reform in this country greater than that of consolidating the Written Law, inasmuch as, after a careful consideration and examination of the subject, he had arrived at this amongst other results, that in British India there were no less than twenty-one classes of laws, enacted by nine different authorities for nine different provinces. This shewed how intricate and complicated the Written Law of British India had become. He thought that, if the matter were fairly managed, it would be possible to digest the Written Law in such a manner as to show that, although intricate and complicated to a person fresh to the subject, it was really of much smaller extent, and was less unsystematic than it appeared to be. This Bill was a step in that direction, and he hoped to be able soon to submit a comprehensive scheme for the consolidation of the unrepealed Regulations and Acts.

The Motion was put and agreed to.

EMIGRANTS' REGISTRATION FEE BILL.

The Hon'ble MR. CHAPMAN introduced the Bill to enable the Governor General in Council to increase the fees payable under section 31 of Act No. XIII of 1864 (*to consolidate and amend the law relating to the Emigration of Native Labourers*). He said that this Bill would empower the Governor General in Council, at his discretion, to increase the fee of one rupee now leviable in the Mofussil for the registration of emigrants, to two rupees. By this means the Government would be reimbursed the expense they were now put to in supervising emigration. The measure was of so simple a character that he would not move that it be referred to a Select Committee, and he proposed to ask the Council to pass it at their next meeting.

WEIGHTS AND MEASURES BILL.

Colonel the Hon'ble R. STRACHEY asked leave to withdraw his motion for leave to introduce a Bill to regulate the weights and measures of British India.

Leave was granted.

NATIVE PASSENGER SHIPS' BILL.

The Hon'ble MR. CHAPMAN moved for leave to introduce a Bill to make further provision for the regulation of Native Passenger Ships. He said that it had been brought to the notice of the Government of India that the practice of over-crowding pilgrim-ships from the British ports to Jedda prevailed to a frightful extent. The way in which the law was evaded was this: A ship cleared out of a British port with all her papers in regular order, and with the proper number of passengers. She put in at other ports not under British jurisdiction, and there took in any number of pilgrims. The miseries to which these unfortunate people were subject in these overcrowded vessels, would best be perceived by a perusal of a recent report on the subject to the Government of India. The first case cited was that of a ship which MR. CHAPMAN thought was miscalled the *Day Dream*, but which should rather be called the *Nightmare*. She was licensed at Singapore to carry 216 passengers. She took 150 pilgrims from Singapore; but, instead of proceeding direct to her des-

tination, she took twenty-three from Malacca, fifty from Pinang, one hundred and fifty from the Peder Coast (Diamond Point), sixty-three from Passangan, ninety-one from Jonkow, thirty-five from Peder, fifty from Acheen; thus carrying upwards of 613 passengers, when she was licensed to carry only 216. The sufferings of these unfortunate people were thus described by the chief officer of the vessel. He said—

"With regard to the space allowed to the passengers, the hold was full and the cabins were also full, and a small temporary house, a little better than a box, was put on board, wherein nearly forty women were stowed. This box was about ten feet in length and ten in breadth, and three to four feet high. In the round-house there were about twenty-four women with their husbands. The squares of all the hatches, which ought to have been left free for ventilation, were all lumbered up with jars of oil, and the pilgrims could but hardly creep out of the between-decks. The horrible state of the vessel was indescribable, and the stench arising from the hold was insufferable. There was no opportunity, from the crowdedness of the vessel, and the luggage being thrown over all the decks, to keep her clean, and she was consequently in the most filthy and dangerous condition."

Another case was that of a vessel which apparently bore an Arab name, the *Atiet Rahmán*, of 704 tons burden, from Jedda to Calcutta, whose space was registered at 23,364 cubic feet; but, after deducting for encumbrances, there remained only 14,700 feet, and allowing only fifty-four cubic feet for each person, there was barely accommodation for 272 persons; yet there were 461 pilgrims on board. The Master Attendant at Cochin thus described the condition of this vessel and the pilgrims it carried:—

"The effluvium escaping from the hatches was indescribable, and it is a matter of surprise that no contagious disease had generated. What prophylactic power the cargo of salt on board may have exercised, I am not prepared to say; but certain it is that the state of things was most favourable to the production of disease."

* * * *

"The men appear wretchedly weak and sickly, and their emaciated and squalid condition seems to support the complaint made by them of want of food, room, and general comfort. The women were mostly of very advanced age, and in a state of decrepitude that renders it surprising how they could have ventured upon these tedious and harassing expeditions. These unfortunate beings were so deplorably helpless, as to be scarcely able to go on deck for the purposes of nature. The children were poorly in the extreme, apparently from exposure and want of food. There were two infants in arms."

There was a mortality of thirty-one on board. MR. CHAPMAN thought that Hon'ble Members who knew what the temperature of the Red Sea was, even under the most favourable circumstances, in the commodious and well ventilated vessels of the P. and O. Company, need hardly be told of the miseries of the people in the cases to which he had just referred. It was high time that such practices were put a stop to, and he hoped the Bill he now moved for leave to introduce, would have the effect of doing so.

The Motion was put and agreed to.

The Council adjourned to Friday, the 18th February 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl.
for making Laws and Regulations.

CALCUTTA,
The 11th February 1870.

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

DESTRUCTION OF WILD ANIMALS AND POISONOUS SNAKES.

Nos. 600—609.

Extract from the Proceedings of the Government of India, in the Home Department (Public), under date Fort William, the 29th January 1870.

READ again the following papers on the subject of the ravages committed by wild animals in India and of their destruction:—

Extracts from the Revenue and Topographical Survey Reports for 1866-67 and 1867-68.

Extracts from the Proceedings of the Government of Madras in the Public Department for the months of April, June, July and October 1867, and March, April and June 1868.

Extracts from the Proceedings of the Government of Madras in the Revenue Department for the months of January 1867, and February, April, September and November 1868.

Extract from the Revenue Proceedings of the Government of the North-Western Provinces for 7th December 1867.

Extracts from the Police Reports of the Punjab and the Central Provinces for the years 1865, 1866 and 1867.

Extracts from the Administration Reports of the Central Provinces and Oudh for three years, from 1865-66 to 1867-68.

Extracts from the Judicial Proceedings of the Government of Bengal for July 1864 and October 1866.

Read Memorandum from Foreign Department, No. 1958, dated 30th September 1868, transferring certain papers connected with destruction of wild animals.

Read letter from Captain B. Rogers, Bengal Staff Corps, dated 9th August 1868, on the same subject.

RESOLUTION.—Although the reports available are far from affording full information, yet they are sufficient to convince the Governor General in Council of the great injury done by wild beasts in most parts of India, both to human life and to property, whether in the shape of domesticated animals or of crops.

2. His Excellency in Council has, therefore, determined to call the particular attention of local Governments and Administrations to the subject, and desires that full reports may be submitted, with as little delay as possible, showing, for each of the last three years (*i. e.*, 1866-67 to 1868-69 inclusive), (1), the loss of human life from the several kinds of wild quadrupeds; (2), the loss (where ascertainable) of cattle or crops from the same cause; (3), the number of the various kinds of animals killed; (4), the system for their destruction in force at the commencement of the period and any changes introduced during the three years; (5), the cost to Government of the measures adopted. When within one province special systems or scales of reward have been tried in particular localities, these should be separately shown.

3. After a review of the facts, the local Government or Administration should state its views as to the measures which should be adopted in future, and in this connexion Captain Rogers' proposals should be specially considered. It will, however, be impossible for the Government of India at present to entertain any scheme involving an increase of expenditure. What, therefore, should be attempted is to utilize to the utmost such amounts as have already been allowed for the destruction of wild animals.

4. A second section of the report should treat of the destruction of poisonous snakes, as to which the same information should be given as in the case of noxious quadrupeds, so far as the particulars apply. In those provinces where the rewards

for destruction of snakes once granted have now been withdrawn, an attempt should be made to estimate the result of this withdrawal.

ORDER.—Ordered, that copy of this Resolution be forwarded to all local Governments and Administrations, together with copy of the papers re-read and Captain Rogers' letter, for information and guidance.

Extract from the Annual Report of the operations of the 1st Division, Central Provinces Revenue Survey—Season 1866-67.

PARA. 28. *Tigers.*—In the vicinity of Guneshgunge, cattle are constantly killed by tigers which roam comparatively secure in the extensive jungles that flank the valley of the Bigna, and render their destruction by the Native *shikarees* a matter of considerable difficulty. Not long ago the mail cart, whilst descending a ghaut, was attacked by a tiger, and one of the horses slightly wounded; the coachman, with admirable presence of mind, sounded his bugle and fairly put this brute to flight.

Extract from the Annual Report of the operations of the 1st or Darjeeling Revenue and Topographical Survey— Season 1866-67.

PARA. 17. *Wild Animals.*—In the dense forest at the immediate base of the mountains, are found wild animals of every description. Amongst these are—elephants, tigers, leopards, panthers, bears, and buffaloes, also deer of many kinds. In passing through the Terai, I shot a boa constrictor, which measured 18 feet in length. I was told by the Mechias that they had seen some much larger.

21. There are no roads to be met with in the Sub-division (Daling), but the cleared foot-path leading from Darjeeling to Daling. To the eastern part of the district, and the hills overlooking the Terai, there is not the slightest trace of a human path. The tracks of wild animals are of course numerous.* * * *

Extract from the Annual Report of the operations of the 2nd Division, Lower Provinces, Revenue Survey—Season 1866-67.

PARA. 45. *Wild Beasts.*—In the jungles of Jeypore are found wild elephants, buffaloes, rhinoceroses, tigers, leopards, jackals, deer and wild pig, besides smaller game.

Extract from the Annual Report of the operations of the 2nd Division, Revenue Survey, Oudh—Season 1867-68.

PARA. 13. *Forests.*—These forests abound with all the large species of game,—tigers, leopards, the deer kind, wild pig, &c., and are the scene of those enormous hanuks, or bathres, we see described in the histories of the kings of Oudh. Even now they are still visited by European parties after *shikar*, and by the large and wealthy talookdars, such as the Rajahs of Kupoorthulla and Bulrampore, who come about the beginning of the hot weather, as water becomes scarce, with numerous elephants, and have generally good sport; and whilst we were in the field, we heard of many tigers having fallen. Although they are still numerous, yet they seldom attack men, and for some years past no report has been received by our officials of their having injured any one. This immunity is doubtless attributable to their being so well supplied with food from the herds of deer and other large animals, which are in such numbers in the forests, it is said, that the tiger has a preference for the flesh of the wild pig. Some well authenticated anecdotes are likewise told of the fearless way in which the cattle-keepers, with only a stick in their hands, go up to them and frighten them off when they have pounced upon any of their herds.

Extract from the Report on the Revenue Survey Operations of the 3rd Division, Central Provinces—Season 1867-68.

PARA. 70. *Work hindered by Tigers.*—Considering the unhealthiness of the tract, its densely-wooded character, and the uniform large scale of survey used throughout, the out-turn of the season is highly creditable to the management and energy of the Surveyor. No small obstruction was occasioned by the depredations of tigers which infest the district. A tigress is reported to have killed 127 people, stopped the traffic for many weeks on the road between Mooli and Chanda, until the brute was shot by Lieutenant Coddington near the village of Belzur.

Extract from the Report of the Assistant Revenue Surveyor in charge 1st Division, Lower Provinces—Season 1867-68.

PARA. 5. *Wild Beasts.*—The Doars swarm with animal life—tigers, bears, leopards, buffaloes, deer, pigs, &c.; along the forest strips skirting the hills, elephants; and towards the Monas, rhinoceroses.

Extract from the General Report of the Topographical Surveys of the Bengal Presidency—Season 1867-68.

PARA. 5.—Every district under survey is more or less mountainous, with a very large proportion of dense jungle, and the Native establishments have to take all sorts of precautions against tigers, which in some parts are so exceedingly numerous as to make all travelling on foot dangerous for solitary men. In the Central Provinces, the Surveyor came across a tract which had been utterly devastated by a single tigress, which was estimated to have killed upwards of 50 people, and was known to have driven the inhabitants away from 13 villages. This scourge was ultimately removed by Major Priestley, who very kindly accompanied the Surveyor and shot it.

6. In the Cossyah Hills, the tigers roam about at great altitudes, and are so bold that the party lost two men by them,—one being carried off in the night (the brute actually breaking through the side of the hut in which he had taken shelter), while the other was carried off in mid-day on the line of march.

Extract from the Report of the Surveyor of No. 2 Topographical Survey, Central Provinces.

PARA. 2.—The party completed 3,008 square miles of triangulation and 2,131 of topographical detail, with 165 linear miles of forest boundary. The country under survey was hilly, and generally covered with dense jungle; the jungle in some parts being so dense that there was considerable difficulty in tracing even large water-courses. Wild animals abounded, and tigers were so troublesome as to prevent the erection of signals in some parts. In one case, a single tigress seems to have caused the desertion of 13 villages and thrown about 250 square miles of country out of cultivation. This tigress killed upwards of 50 men and women before she was despatched by Major Priestley, who succeeded in shooting her in June last after a long and troublesome expedition. The district generally owes much to that sportsman's perseverance in the pursuit.

Extract from the Narrative Report of the Surveyor in charge No. 1, Topographical Party, Gwalior and Central India Survey—Season 1867-68.

PARA. 13.—The tigers which abound all over the hills create a good deal of havoc amongst the cattle, and the men themselves do not always escape. All the game in Ulwar is strictly preserved; the consequence is that, in many places, the Nilgáo and Sambar literally swarm. The Nilgáo do great damage to the crops at the foot of the hills, and I was more than once begged by the owners of the fields to shoot them.

Extract from the Narrative Report of the Surveyor in charge No. 2, Topographical Party, Central Provinces Survey—Season 1867-68.

PARA. 7.—Last year, while employed in triangulating the ridges adjoining the Gharaghât Pass, I noticed that a number of eligible hills had been left uncleared by the flagmen detached to erect staves, and on enquiring into the reason of this, was informed that owing to the ravages committed by the man-eating tigress of Gharaghât Pass, the whole of the villages within the tract frequented by the tigress had been deserted by the people. Believing that the underwood of the ridges would afford less cover during the hot weather, I deferred the triangulation of this portion of the Baitool District until I entered the Towa Valley later in the season. So many men, however, had been carried away by the tigress, and the Gonds living in the neighbourhood had become so alarmed, that I only succeeded in erecting eight staves on the principal peaks.

8. This season, after completing the triangulation of the hill jagheers of the Chindwarra District, I was desired by the Chief Commissioner of the Central Provinces to assist Major Priestley in determining the heights of the most favorable passes into the Chindwarra and Towa Valleys; and as this involved the examination of the tract frequented by the tigress, it affords me great pleasure in being able to add that Major Priestley succeeded in slaying this scourge of the people. The number of men and women killed by this horrible beast during the last three years is variously stated, at from 50 to 150, and, judging from the official reports, the number of deaths appear to have exceeded 50.

9. The following are the villages that have been depopulated by the ravages of this scourge of the Gharaghât Pass and the ridges adjoining, embracing an area of 250 square miles, over which, during particular portions of the year, the tigress appears to have roamed, *viz.*:—Rajra, Bichkan, Patargad, Naiagad, Bithu Asola, Rodri, Persadana, Bisighât, Dhangwa, Boldai, Bodur, and Sitagang.

10. The Gowli, whom the tigress attempted to kill three years ago, is residing at the village of Sornadai. He has the marks of two teeth on the back of his head, and the scars of a claw on his back. He stated that he was out grazing buffaloes, and that, while following them home in the evening, he suddenly heard a rustling behind him, and, on turning round, saw the tigress rapidly approaching him. Before he had time to move away, he was seized by the head and thrown upon his face perfectly senseless. When he was able to sit up, he found himself bleeding profusely, and surrounded by the herd of buffaloes, the tigress looking on at a short distance. Watching his opportunity, he fled home, leaving the buffaloes between himself and the tigress. Subsequently a lad bringing home cattle late in the evening, while half of the herd were within and half beyond the bounds of the village, was seized and carried away.

11. The above seem to show that, although the tigress had the choice of food, she preferred on both occasions a human victim.

12. On the 2nd May she killed a Gond while watching cattle below the village of Sornadai; and on the 11th of the same month, while Major Priestley and myself were encamped at Sornadai, she killed a Rajpoot employed with three others in cutting bamboos below the village. One of the latter, after witnessing the death of the Rajpoot, and joining the other two in scaring away the tigress, ran up to Sornadai to give notice of what had occurred, and point out the spot to Major Priestley. A very interesting account of the pursuit and slaughter of the tigress was given by Major Priestley.

13. Whenever a Gond or Kurku is killed by a tiger, his wife and children, and father and mother, if living, are thrown out of caste; all intercourse between them and the rest of the inhabitants being interdicted on the ground that they are laboring under the displeasure of the Deo. What makes this belief more distressing is, that the tiger is one of the principal Deos of both Gonds and Kurkus; and a man-eater is the Deo to whom the propitiatory sacrifice and

feast prescribed on these occasions is invariably offered often by taxing to the utmost the scanty means of the poor creatures afflicted by his ravages, and occasionally involving their proceeding upon begging expeditions to collect the amount required.

14. Prior to our arrival at Sornadai, the people intended to desert the village, and would have left after our departure had the tigress not been killed. The relief to the whole country has been very great; the sudden way in which men were carried off and devoured from different portions off the forest between Batune and Kolmesra, having rendered the whole of the intermediate ridges unsafe. Indeed, the dread of the tigress was so great that Gonds, who could furnish information regarding her locality, were afraid to do so, lest they should be asked to assist in tracking her. Before we left Sornadai, we had the satisfaction of learning that the whole of the villages would be re-occupied as soon as the old inhabitants could arrange for their return.

Extract from the Proceedings of the Government of Madras, in the Public Department, for the months of April and June 1867.

READ the following letter:—

Dated 18th April 1867.

From—The REVD. A. R. SYMONDS, M. A., *Secretary to the Society for the Propagation of the Gospel in Foreign Parts, Madras,*

To—The Right Hon'ble the Governor in Council, Madras.

Under permission, I beg to bring under your Lordship's notice the prevalence of tigers in one of the missions of the Society of which I am Secretary. In the month of October last, I made a tour of the mission which lies partly in the Cuddapah, and partly in the Kurnool Districts. At Mutyalapand (the head quarters of our Missionary, the Reverend John Clay), which is situated about 40 miles north of Cuddapah, and just to the north of the line which separates the Cuddapah District from that of Kurnool, I found considerable fear prevailing on account of a man-eating tiger which infested the neighbourhood, and which had carried off about 50 people. One of the Superintendents of the Survey Department was at that time at Mutyalapand, and he told me that his work was hindered in consequence of the men under him being afraid to go out on survey in the fields. Since then, I have received accounts from Mr. Clay of further ravages committed by this tiger, which has at times carried off people within a short distance of the station. I am not able to state the exact number, up to the present time, who have been killed, but I think I should be quite within the mark if I put it down at 60. I may mention that one of the passes through the hills, which separate this portion of the district from the Budwail Valley, and through which the Missionary and others used to go, in getting from the villages on the western side to those on the east, is completely stopped by a man-eating tiger. On a former occasion, I went through this pass on my way from Mutyalapand to the Budwail Valley; but on my last visit, when I proposed to go by the same route from Kalsapand (in the Budwail Valley) to Mutyalapand, I was told that I could not possibly go that way, for that not a single bearer or cooley would accompany me; I therefore took another, but more lengthy, route by the Nundy Ghât, which leads from the Cummun high road on the east, to Ghazilpally on the west; but even by this route I was obliged to commence my journey in the middle of the day, so as to get through the first part of the pass before dark as a tiger infested this region also. An East Indian employé (whose name I forget), who had charge of the road over the pass, told me that I must not think of going through it after dusk, and indeed, that the bearers would not be willing to go. He mentioned to me a fact which had not long before occurred, how that, when he himself was taking a gang of coolies to work on the pass, this tiger carried off one of the men before his eyes. And this reminds me of a

circumstance that, within the last few days, has been reported to me, and which only a short time since occurred. A string of bandies was passing along, when the tiger which infests the Mutyalapand neighbourhood suddenly sprang upon one of the drivers in the very middle of the string, and carried him off. This will show how bold the creature has become, and what terror it naturally occasions.

2. I venture to bring these facts under your Lordship's notice in the hope that you will be pleased to cause some measures to be adopted for the extermination of these tigers. I can assure your Lordship that if it can be done, not only will it be for the comfort and security of the people in whom I am more specially interested, but for the well-being of the inhabitants generally.

No. 426, dated 26th April 1867.

Order thereon by the Madras Government.

ORDERED, that copies of the foregoing letter be forwarded to the Collectors of Cuddapah and Kurnool, who will report how many persons have been killed by tigers in the localities mentioned by Mr. Symonds within the last six months, and will state whether any special measures have been adopted for the destruction of tigers in their districts during the same period.

2. The Collectors of the above districts, if satisfied that the alarm is well founded, are authorized to offer such increased rewards for the destruction of each man-eating tiger as may be necessary.

3. The Collectors will report their proceedings at once to Government, with any further suggestions for the extirpation of the tigers which they may deem expedient.

No. 20, dated 16th May 1867.

From—*The Collector of Cuddapah,*

To—*The Chief Secy. to Govt. of Madras.*

In reply to the Proceedings of Government, dated 26th April 1867, No. 426, I have the honor to state that only nine men, as shown in the margin, are reported by Mr. Cox, Superintendent of Police, to have fallen victims to tigers during the last six months ending 30th April 1867, in or contiguous to the tract of the country referred to by Mr. Symonds in his letter; that I have never heard of any ravage of tigers so serious as is reported by him in this district, and that I have duly published in the *District Gazette* notices offering a maximum reward of Rs. 100 for the destruction of each of the two man-eating tigers then reported to haunt the said locality or thereabouts.

	Males.
In Sidhout Talook	... 1
„ Proddatur „	... 6
„ Budwail „	... 2
Total	... 9

2. I feel certain that the people's reports to Mr. Symonds were most exaggerated, and I cannot understand why neither he, as head of the Church Mission, nor Messrs. Clay and Spencer, the Clergymen here, never represented this matter (for I am in constant communication with them) to me, instead of writing to His Excellency Lord Napier. With Mutyalapand I have nothing officially to do.

3. With reference to paragraph 3 of the Proceedings, I beg to state that I see no necessity for the present to lay before Government any suggestions to adopt further measures for their extirpation.

No. 36, dated 16th May 1867.

From—T. A. N. CHASE, Esq., *Magistrate of Kurnool,*

To—*The Chief Secy. to the Govt. of Madras.*

In reply to Government order No. 426, dated 26th April, Public Department, I have the honor to inform you that within the last six months twelve persons are reported to have been killed in the Sirwell Talook, and one in the Cumbun Talook, by tigers for whose destruction a reward of Rs. 100 for each man-eating tiger was offered.

2. The man killed in Cumbum was a Tappal runner while going through the Nandikanama Pass.

3. In March I gave a reward of Rs. 50 for a tiger killed in the Talook of Sirwell. The *shikaree* who shot it brought with him a broken piece of a glass bangle, such as is commonly worn by women, which, he said, he had found in the tiger's stomach, but as the skin was soft and glossy, and that of a young tiger, and the evidence connecting the piece of bangle in the tiger's stomach untrustworthy, I did not feel justified in giving Rs. 100, but gave more* than the sum sanctioned by the Board of Revenue, *viz.*, Rs. 35, as an encouragement.

* Rs. 50 under G. O. No. 184, dated 2nd February 1865.

4. In April another was killed near Nandikanama Pass, for which Rs. 50 were also awarded, as there was no evidence whatever of its being a man-eater.

5. In another locality, *viz.*, Markapore, during the same month, the Head Assistant gave a reward of Rs. 34 for a killed tiger.

6. I think, however, that the alarm is well founded, and shall avail myself of the powers† granted by Government, to award increased rewards for the destruction of each man-eating tiger.

† Paragraph 22.

7. I would suggest that Mr. Sheffield, the Assistant Conservator of Forests, be supplied with strychnine, and an endeavour made to poison some tigers. His head quarters are at Nundial, about 15 miles distant from the Nandikanama Pass, and all the hills in the neighbourhood are under his surveillance, so that he is peculiarly well situated for giving such an experiment a fair trial.

P. S.—After writing the above, Maistry Davud Saile brought the skin of a very large tiger, measuring with the tail nearly 12 feet. It is reported by the village moonsiff of Mememadgala, in the Talook of Nandikotkur, to have killed two persons—a Chensu and a Wadder. I gave a reward of Rs. 100 under Government order No. 184, dated 2nd February 1865.

No. 37, dated 21st May 1867.

From—T. A. N. CHASE, Esq., *Magistrate of Kurnool,*

To—*The Chief Secy. to the Govt. of Madras.*

I have the honor to inform you that on the 13th instant a man named Ramdu, of the village of Mutyalapand, in the Sirwell Talook, was attacked and killed by a tiger at Ahobalam in the same talook.

2. I have directed the Tehseeldars of the Cumbum, Sirwell, and Nundial Talooks to proclaim, by beat of tom-tom, that the sum of Rs. 300 will be granted to the person or persons who may kill this tiger. I have also published the reward in the *District Gazette*, and I trust the Government will sanction my proceedings.

No. 612, dated 5th June 1867.

Order thereon by the Madras Government.

The Governor in Council will not, in this instance, withhold his sanction from the offer made by the Collector of Kurnool of a reward of Rs. 300 for the destruction of the man-eating tiger referred to in his letter of the 21st ultimo, but he deems it proper to observe that so large a reward should not be offered, except for the destruction of a decided and notorious man-eater, which is known to be infesting a particular locality, and to be habitually preying upon human beings.

2. The Government approve of the Collector's suggestion that Mr. Sheffield, the Assistant Conservator of Forests, should be furnished with a supply of strychnine for the destruction of tigers in the neighbourhood of the Nandikanama Pass. Mr. Chase will obtain a supply either from the Zillah Surgeon, or from the Medical Stores at Madras, and furnish it to Mr. Sheffield.

3. The Government would further suggest that supplies of strychnine should be furnished through the Tehseeldars to any intelligent heads of villages in that part of the country which is infested by tigers, who might safely be entrusted with it.

Extract from the Proceedings of the Government of Madras, in the Public Department, for the month of July 1867.

READ the following letter:—

No. 23, dated 2nd July 1867.

From—H. S. THOMAS, Esq., *Acting Magistrate of South Canara,*

To—The Acting Chief Secy. to the Govt. of Madras.

Having just received the orders of Government marginally quoted, I have the honor to submit the required report on the ravages committed in this district by beasts of prey, and the measures which I would suggest for their extirpation.

Public Department, dated 5th June 1867, No. 612, and 26th April 1867, No. 426.

2. A reference to the death register kept in my office shows that in the official year 1865-66, no less than 40 human beings were killed by wild beasts, and that in 1866-67 the number of similar violent deaths premises to be equally high, having in 10 months risen to 33.

Deaths by wild beasts.

	1865-66.	1866-67.
July	5	1
August		
September	2	2
October	6	0
November	2	3
December	1	4
January	3	3
February	2	7
March	7	7
April	7	6
May	3	—
June	2	33
	40	

3. These returns, it will be remembered, show only the deaths known and reported by the village authorities, and are rather under the mark than otherwise. If we add a slight margin, therefore, for a few cases of neglect to report —a not unusual accident—and for ignorance of those occurring in the more jungly localities, it will be found that death by leopards is an occurrence that, on an average, takes place once a week in this district.

4. But it is doubtful whether this loss of human life is by the people themselves considered more serious than the almost daily depredations on cattle, goats, and watch-dogs. The great majority of tigers and leopards are, for known reasons, not man-eaters. The great majority, therefore, must live on wild game or domestic cattle. There are few localities here in which deer are yet to be found. On the cultivator, therefore, falls the main burden of breeding and providing herds and flocks to feed these beasts of prey. One man alone complained that he had lost 50 head of cattle by leopards.

5. I should here mention that tigers are few here comparatively, and that it is by leopards that this destruction of life and property is wrought. Even since my arrival here one little child has, at dusk, been taken away from the street of the village, and one poor woman from the very verandah of her house, when asleep at night, and both by leopards.

6. The Government orders sanctioned the payment of an enhanced reward for man-eating tigers, but not for man-eating leopards, for I believe it is not generally known that leopards are capable of being as formidable as in South Canara they are. The largest reward at present sanctioned for the destruction of any leopard is Rs. 17-8.

7. And yet I would not seek sanction for any special reward for man-eating leopards, for I should be unable to award it, unable to satisfy myself as to which was, and which was not, a man-eater. In most districts a man-eater is well known by wide repute; his beat is known, and the surrounding open plain of ploughed fields prevents his changing it. Here, the cover is thick, nearly every quarter of a mile contains a well-wooded ravine, the cultivated valleys even are full of cocoanut, arecanut, sugarcane, catechu and shrubs on Kumaki lands, which affords such good shelter that any leopard can change his habital without being noticed; and, in practice, they generally take up their quarters within a mile of a village till they have cleared it of dogs and such goats and cattle as are not safely housed, when they remove to another village, and follow the same course; and it is by no means in special localities that human beings are carried off, or killed in self-defence. I believe it to be here generally the accident of their finding no other food on the occasion, or being interfered with. For reasons that I could give, a mangy skin, too, is by no means the sure indication of a man-eater that it is supposed to be; man-eaters are sometimes particularly sleek.

8. My predecessor, Mr. Cadell, seems to have had in view this difficulty of recognition when he enhanced the reward on all leopards generally. His letter* on the subject is enclosed.

* To Board of Revenue, No. 28, dated 16th February 1867.

9. The accompanying return of leopards and tigers killed in this district will show that Mr. Cadell's enhanced rewards were not without good effects, though possibly the increased numbers killed may, in some degree, be owing to the increase in leopards, which I shall explain below.

10. I conceive the most practical way of inducing an increased destruction of these beasts of prey is to hold out the extra encouragement of higher rewards. The present rewards,—a tiger, 10 star pagodas (*i. e.*, Rs. 35); a cheeta, 5 star pagodas (*i. e.*, Rs. 17-8),—were fixed in 1836, since when the price of the staple grain of this district has risen 228⅓ per cent., and Rs. 35 and Rs. 17-8 are not the liberal rewards they were. Their equivalents would now be Rs. 114-13 and Rs. 57-7. Moreover, the jungles then provided deer enough to obviate the leopards' present necessity for feeding on the cattle of the cultivator.

11. Considering the gravity of the evil to the cultivator, both in person and property, I venture to hope the Government may be induced to consider the present rewards inadequate, and accord me permission in this district to grant rewards of Rs. 60 and 40, respectively, for tigers and leopards, and especially for leopards. If other Collectors do not agree with me, I venture to think it is because they are not similarly circumstanced.

12. The successful sportsman feels it a great task to leave his house and march 50 or more miles with a heavy skin to head and divisional head quarters for the sake of the reward; it is discouraging. I should therefore propose to let all Tehseeldars pay it on the spot, and, to preclude a temptation to malpractices, I would leave them no discretion, but order one uniform sum to be paid in every

case, leaving the sportsman to take his luck of male or female, large or small, man-eater or not; and I would take means to make it thoroughly well known all over the district that one uniform sum was in every case to be had immediately on application with a head and unmarked skin of a tiger or leopard killed in the district. The Tehseeldars would have to support their payments each month with the skins as vouchers, which they would be instructed to mark when paying the reward. The status of Tehseeldars is very different since 1836, and thus checked, I think there is very little danger of the money not reaching the right hands. They are trusted to fine Rs. 50 and imprison for a month, and commit for murder, and I think they might be similarly trusted in this matter.

13. I should add that, pending instructions, I have taken upon me to authorise my Tehseeldars to pay the present sanctioned rewards on the spot, and that one wealthy man, the one who complained of losing 50 head of cattle, has undertaken to tell off a band of ten or fifteen of his farm laborers to the one duty of tiger and leopard shooting. Mr. Whiteside sent him powder, and I have arranged for his having the temporary loan of 12 muskets. If the reward is enhanced, and these picked men are successful, they may be encouraged to keep to their new, pleasant and profitable profession, and their example may, as in other districts, be followed by men calculated to live by their gun. I think nothing is so well calculated as a high and ready reward to induce the right class of men to take up this occupation. Such men, when successful, are also made welcome visitors by all cultivators. But it is a very precarious existence; there are many blank days and weary nights of watch to one successful shot, and nothing but a high reward will counterbalance the blanks, the difficulties, and, to the Native mind, the dangers, too, for he shoots not for sport but bread.

14. But the Government may desire to know whence this increase in the beasts of prey in this district. The Natives hasten to impute it to their old enemy, Coomery; the restrictions on the Coomery clearings have, they say, afforded more cover; but this, I think, is prejudice. Mr. Cadell has already reported that the restrictions hitherto sought to be placed on Coomery cultivation have been most successfully and generally evaded. Coomery has not *diminished*, and cannot affect the matter. Moreover, if it did, it would rather affect it the other way, for the underwood that springs up after a Coomery clearing forms a far denser cover than the more open virgin forest. I *am of opinion that the* real origin of the increase of leopards and tigers is to be looked for in the extensive clearings of coffee, on the tops of ghâts in Coorg, which are kept open and worked, and the wild animals naturally retreat from them to the jungles below, whence they follow the cattle, &c., to the villages.

15. With reference to the high rewards I have sought, I will venture to argue that it is good economy to be liberal. It will be very *much cheaper in* the end to have paid twice or thrice as much for the heads of the present tigers than to go on paying moderate sums for many years for all the many cubs that they and their cubs will keep on rearing from year to year. So far do I urge this argument that, I think, it would be good economy to enhance the reward in those districts also in which there are a few tigers, for then there would be some chance of their being thoroughly exterminated, and the evil and the expenditure for ever brought to an end. It was done in England with wolves, when the country was densely wooded, and not so well armed as India now is. I venture to think it a stain on our administration that, at this date, the beasts of prey should still contest the field with us, and no man dare leave his flocks out at night, except in those districts and localities where we have completed the work of extermination. I specially refer to such beautiful grazing grounds as the Neilgherries, the Palamies, and the Mookh, where man can claim the mastery for himself and his herds only by sufferance—only by day-light; whereas in Australia the cattle, sheep and horses are unhoused by day and night for months. The expense of secure housing is itself a very serious difficulty in the way of the grazier.

No. 28, dated 16th February 1867.

From—W. M. CADELL, Esq., *Collector of South Canara,*

To—*The Secretary to the Board of Revenue, Madras.*

The Board have disallowed from my contingent bills the sum shown in the margin in the grant of rewards over the sanctioned maximum scale for killing six cheetahs in September and October, and the Accountant General has consequently called on me to refund the amount of Rs. 35. I beg, however, to lay before the Board the circumstances under which these increased rewards were given, with the view of procuring their special sanction upon the same.

	Rs.	A.	P.
Objection statement for September, dated 15th December 1866 ...	29	8	0
Ditto for October, dated 11th ditto. ...	7	8	0
Total ...	37	0	0
In Udipi Talook.			
4 Cheetahs, at Rs. 25	100	0	0
1 Cheetah	20	0	0
In Mangalore Talook.			
1 Cheetah	20	0	0
6 Total ...	140	0	0
Admitted at Rs. 17½	105	0	0
Retrenched ...	35	0	0

2. The depredations caused by tigers and cheetahs have of late been somewhat serious in the district, and even the town of Mangalore itself is not free from their incursions. In the month of June 1865 it was reported that, during the previous 12 months, no less than 16 human beings had been carried off in the Udipi and Candapore Talooks; and in the rest of the district the loss of life by this cause only was gradually on the increase. In addition to this, the losses by the villagers of their cattle, goats and pigs were in some localities very considerable. As a stimulus to the people to track out and destroy these obnoxious animals, I took advantage of G. O. dated 2nd February 1865, No. 184, which gives authority to Magistrates to offer as high a reward as Rs. 100 for man-eating animals, and issued a notification allowing a reward of Rs. 30 in the two above talooks for a cheetah, and Rs. 35 in the vicinity of Mangalore. In pursuance of this notification, the excess now retrenched was disbursed with reference to the dangerous character of the animals killed, and the depredations committed by them. These orders, I may observe, have had a very beneficial effect, and a large number of animals have been since destroyed by the people. In proof of this, I may mention that Lieutenant Thompson, of the Artillery, has, since the date of the above, killed five cheetahs or panthers in the very vicinity of this place.

3. Under these circumstances, I beg to request that the Board will be pleased to pass the small amount of Rs. 35 now under retrenchment.

4. The amount of Rs. 2, retrenched out of 7, paid upon the skin of a hyæna in September, also under retrenchment, will be refunded.

Statement showing the number of Tigers and Cheetahs killed, and rewards paid from 1861-62 *to* 1866-67, *in the District of South Canara.*

Months.	1861-62.		1862-63.		1863-64.		1864-65.		1865-66.		1866-67.		Remarks.
	Tigers and Cheetahs.		Tigers and Cheetahs.		Tigers and Cheetahs.		Tigers and Cheetahs.		Tigers and Cheetahs.		Tigers and Cheetahs.		
	No.	Rewards. Rs. A.	No.	Rewards. Rs. A.	No.	Rewards. Rs. A.	No.	Rewards. Rs. A.	No.	Rewards. Rs. A.	No.	Rewards. Rs. A.	
May ...	...	.....	3	20 0	3	26 0	3	35 0	1	12 0	9	196 0	
June...	...	.....	2	8 0	...	.....	...	.....	*	.....	24	518 8	* The enhanced rates of rewards were allowed from this month, *viz.*, June 1865.
July ...	...	.....	...	.....	...	.....	2	15 0	4	70 0	4	112 8	
August	...	.....	...	.....	1	1 0	2	36 0	5	60 0	4	75 0	
September	...	119 8	...	.....	...	.....	...	.....	6	124 0	9	164 0	
October	...	137 0	1	10 0	...	.....	...	.....	17	359 8	6	104 0	
November	...	51 8	...	.....	1	6 0	...	.....	9	242 8	8	143 0	
December	...	6 0	...	.....	...	.....	2	44 0	5	122 8	8	190 8	
January	...	8 0	1	18 0	6	66 0	2	50 0	11	324 0	7	169 0	
February	...	64 0	2	16 0	3	55 0	9	128 0	11	305 0	3	90 0	
March...	...	55 0	5	85 0	...	.....	...	.....	12	241 0	6	122 8	
April ...	...	12 0	8	85 0	6	108 0	8	169 0	10	242 8	6	154 8	
Total ...	45	453 0	22	242 0	22	208 0	28	477 0	97	2,103 0	94	2,039 8	

H. S. THOMAS,
Acting Magistrate.

MANGALORE,
The 2nd July 1867.

No. 878, dated 20th July 1867.

Order thereon by the Government of Madras.

In the above letter, which the Governor in Council has read with much interest, the Acting Collector of South Canara describes the ravages which are annually committed by wild beasts in the district under his charge. The loss of human life during the years 1865-66 and 1866-67 is lamentable; no less then 40 persons having been carried off in the former year, and 33 in the ten months of the present year; while the loss of cattle and domestic animals must have been proportionately great.

2. Mr. Thomas represents that the rewards at present sanctioned are not sufficient to induce the people to undertake the risk and labor of pursuit; that the scale of rewards now in force was sanctioned 30 years ago, when the value of money was undoubtedly greater, relatively, than it is now, and proposes that permission shall be accorded to him to grant rewards of Rs. 60 and Rs. 40, respectively, for every tiger or leopard killed. Mr. Thomas would also, as a further inducement to sportsmen, authorize the several Tehseeldars throughout the district to grant the above rewards at the head quarters of their talooks immediately on application, and on production of the head and unmarked skin of the slain animal, the skins being forwarded to the Collector's office each month by the Tehseeldar as vouchers in support of the payments made.

3. Mr. Thomas would not recommend special increased rewards for the destruction of man-eating tigers or leopards, owing to the facility which the peculiar nature of the country affords for shelter and easy migration from one place to another, and to the difficulty of deciding whether or not any particular tiger or leopard is an habitual man-eater or not.

4. The Government, as an experimental arrangement, approve the proposals made by the Acting Collector, and they trust that the increased rewards which will be promptly paid for every tiger or leopard killed, without entailing unnecessary trouble on the sportsman, may induce the inhabitants to devote themselves to the extirpation of the wild beasts which at present devastate their fields and homes.

5. Mr. Thomas will report at the expiration of six months the result of the measures now sanctioned.

6. On the receipt of the tiger and leopard skins, the Acting Collecter will take care that they are marked in such a manner as to preclude their being again offerred for the reward.

7. The Collectors of districts will forward, in January 1868, a return of the number of persons who have been killed by wild beasts in their respective districts during the year 1865-66 and 1866-67, and the amount paid in rewards for the destruction of these animals during each of these years.

***Extract from the Proceedings of the Government of Madras, in the Public Department, for the month of October* 1867.**

READ the following:—

No. 78, dated 9th October 1867.

From—*The Collector of Kurnool,*

To—*The Chief Secy. to Govt. of Madras.*

I have the honor to bring to the notice of Government the terrible ravages of the tigers in the Nandikanama Ghât, regarding which I reported to Government on the 21st May 1867, letter No. 37.

2. Lieutenant Russell, Assistant Superintendent of Police, has reported that, during this year up to the 27th September 1867, a man-eating tiger has carried off 64 human beings, and has caused such a terror that the post runners and beat constables will not traverse the ghât until large numbers of persons collect accompanied with numerous tom-tom beaters, and that the coolies of the Public Works Department have stopped work through fear of attack from this tiger.

3. It is a question in my mind whether it is one tiger only that causes this havoc, for the jungles are most dense, and afford remarkable cover for wild beasts of all descriptions; but when I went over the ghât in August, on the night after Mr. Russell's bullock-driver was carried off, the chensus and coolies working on the roads told me all the mischief is done by one individual tiger, and that it is known by its foot-marks, which are peculiar, showing an immense growth of one of the claws in one of its fore-feet.

4. On my recommendation, the Board of Revenue have sanctioned the expenditure of Rs. 1,200 towards clearing the dense jungle for a space of 100 yards on each side of the road. This, however, is but a precaution for the future. What appears necessary for the present is the adoption of some measure for the extirpation of the plague. I can think of none better adapted for the purposes than that recommended by Mr. Russell, and that is, placing at his disposal two Government elephants for the express purpose of pursuing and hunting down the tigers in the neighbourhood of the pass. Mr. Russell is placed in a dangerous position, for he has the superintendence of two talooks on the east, and one talook on the west, of the Nalla Malla Hills, and cannot do his work without having constantly to pass over this ghât.

5. At Bellary, I should think there were several elephants available in the Commissariat Department, and I can hardly see to what better use they can be put than in assisting toward the destruction of the tigers which have spread a fear throughout the hills in their neighbourhood.

Dated 14th October 1867.

From—The Assistant Inspector General of Police,

To—The Chief Secretary to the Govt. of Madras.

I annex copy of telegram received from Captain Stuart regarding a man-eater.

Dated 14th October 1867.

Telegram from—CAPTAIN STUART, *Depy. Inspr. Genl. of Police, Central Range, Kurnool,*

To—The Inspector General of Police, Madras.

Beat stopped on Nandikanama Ghât. Tiger carried off beat constable. Men being killed on an average of one in three days. Press Government for greater reward.

No. 1278, dated 16th October 1867.

Order thereon by the Government of Madras.

The Governor in Council authorizes the Collector of Kurnool to offer rewards to any amount he may deem proper, not exceeding Rs. 300, for the destruction of the tiger referred to in the foregoing papers, and of any other man-eating tigers in his district.

2. He is also authorized to employ skilled *shikarees* on daily wages, who will also be eligible to the reward, and, if necessary, to obtain arms and ammunition for them from the Arsenal at Bellary.

3. It will be ascertained, through the Military Department, whether elephants fit for use in tiger-hunting can be furnished from Bellary.

4. Ordered, that the following telegram be despatched to the Collector of Kurnool:—

> "You are authorized to offer such reward as you deem proper, not exceeding Rs. 300, for the man-eating tiger referred to in your letter of 9th instant; also to engage skilled *shikarees* on daily wages, who will also be eligible to receive reward. If necessary, obtain arms and ammunition for them from Bellary Arsenal. Your proposal to employ elephants has been referred to the Military Department."

Extract from the Proceedings of the Government of Madras, in the Public Department, for the month of March 1868.

READ the following:—

No. 92, dated 7th March 1868.

From—The Collector of Kurnool,

To—The Chief Secy. to the Govt. of Madras.

I have the honor to inform you that the man-eating tiger, regarding which I wrote to Government on the 9th October 1867, is reported by Lieutenant Russell to have been shot by his party on the night of the 3rd March 1868. It proved to be an old tigress.

2. I trust soon to obtain more details, regarding which I will again address you.

No. 324, dated 11th March 1868.

Order thereon by the Government of Madras.

The Government await a detailed report on the operations of the party, when orders will be passed as to the reward to be given, and as to the payment of the expenses.

No. 9, dated 18th February 1868.

From—The Acting Principal Assistant Collector, Chicacole,

To—The Collector of Ganjam.

I have the honor to forward to you a statement I have procured from Mr. Thomas Reay, the Jailor here, regarding an encounter he had on the 9th ultimo with a panther under circumstances which call, I think, for more than usual notice.

2. The animal, according to all accounts, was a particularly savage beast, and, on the morning in question, broke into the town, being within 100 yards of the Jail, when Mr. Reay came upon it. It wounded no fewer than four persons; first the owner of the field behind the jail, upon whom it came unexpectedly. He escaped away from it, and gave the alarm at the jail, and then followed the circumstances detailed in the enclosed statement of Mr. Reay. After Mr. Reay was removed by the Apothecary, in order that his wounds might be treated, one Lalamiah advanced towards the panther with a sword. The animal at once closed

with him and gave him such a severe bite on the sword-arm that his life was for some days despaired of. A number of people then advanced with clubs, and a constable with his bayonet, and the panther was despatched. As stated by Mr. Reay, pensioned Havildar Doorga Persaud has died since the encounter, though it was not thought at the time that he was so severely wounded as either Mr. Reay or Lalamiah.

3. The death of the panther was undoubtedly due chiefly to Mr. Reay, and he is entitled to the usual reward for killing it. The highest reward I am empowered to give is Rs. 17½, but I trust you will agree with me that the intrepidity displayed by Mr. Reay, as well as the peculiar circumstances of danger to the inhabitants, that a higher reward than this should be bestowed on him. I would, therefore, suggest the sanction for a special reward of, say, Rs. 50, and that Lalamiah also be recommended to receive a reward of Rs. 15.

4. I should have drawn your attention earlier to this subject, but I have been out on a jamabundy tour nearly all the time since I joined the district.

No. 144, dated 21st February 1868.

Endorsed by the Collector of Ganjam.

Copy submitted, with enclosures in original, for the favorable consideration of Government.

Statement of Mr. T. Reay, *Jailor,—dated Chicacole, the* 13*th February* 1868.

I beg to furnish particulars regarding the panther shot by me, and the injuries caused on the morning of the 9th of January. On my return from the jail, a native informed me that a panther was in the adjacent fields (back of the jail) which had already bitten two Natives. On receipt of information I went home, loaded, and went after the animal. On reaching the spot I found a vast number of Natives surrounding the field in which the animal was, but out of the number not one would venture into the cholum field, which was above six feet high. I directed two constables to follow me into the field, but they withheld on reaching. I entered at once, and was about firing when I gave instructions to the constables to clear the crowd; while doing this the animal made for me; as it was coming, I fired and struck it on the right shoulder; immediately after the animal sprang on me, and caught me by the shoulders. I then threw him full on the ground; he immediately rushed on to me and attempted to fasten to my throat. I however forced my right hand under his jaws and loosened the hold on my throat. He then fastened on my left shoulder. This time I received a bite on the throat, and he sunk five or six teeth on my left shoulder, one of which was about 1½ inches deep; this happened after he had thrown me. The way I got rid of him was by twining my legs round his body to throw him. He then slipped and ran into an adjacent brinjall field. I again loaded and went after him. On reaching the place I could not get sight of him. A pensioned Rajpoot Havildar,* who had just come, took a sword and entered the bush where the animal was, when it sprang on him unawares and bit him. I ran up and fired at the animal, and put the bullet through his leftside. I then brought the Havildar out, and Mr. Gillespie, who was at that time at the spot, dressed the wounds, which, however, caused his death on the 22nd ultimo. I then got tom-toms to try and beat the animal out of the bush, but it was of no avail. I loaded again and went into the bush, searching for the animal, but before I could observe him, he sprang at me; as he was in the act of doing so, I fired; he was on me twice; I again threw the animal, and the third time he threw me and caught me on the left shoulder again, and sunk five or more of his teeth. The animal would very likely have killed me, but that he had been

* Doorga Persaud.

wounded, and was weak from the loss of blood. On my twining my right leg on him the third time to attempt to throw him off, he left me and made off for the bush. I followed, but could not get sight of him. I felt then very weak, and went under a tree, when Mr. Gillespie, the medical officer in charge of the station, saw me and advised me to return as I was bleeding profusely; but, before doing so, I advised the village authorities not to meddle with the animal, as I would return and kill it after my wounds were dressed, but after half an hour the animal was brought to me dead. On enquiring, I found that during my absence an inhabitant of Chicacole ventured at the animal with only a sword; it made for him and bit him too. While it was on him, a constable of the jail guard had bayoneted him. The animal was at its last stage when this occurred. The animal is of the panther class, full grown, being in length six cubits.

I beg to attach a certificate from the medical officer regarding the state of my wounds.

Certificate of Apothecary D. Gillespie, *in medical charge of Chicacole,—dated* 13*th February* 1868.

This is to certify that Mr. Thomas Reay, Jailor at Chicacole, suffered severely from the bites of a panther: one of the wounds was about an inch or more in depth and about an inch in length, and several other smaller wounds on the left and right shoulders, and one on the right side of his throat; these wounds were, in my opinion, of a dangerous nature.

No. 331, dated 13th March 1868.

Order thereon by the Government of Madras.

The Governor in Council is pleased to sanction the payment of a reward of Rs. 50 to Mr. Reay for his gallant conduct in attacking and disabling a very dangerous panther, and also of a reward of Rs. 15 to Lalamiah for the assistance he afforded on the occasion.

Extract from the Proceedings of the Government of Madras, in the Public Department, for the months of April and June 1868.

Read the following:—

No. 106, dated 18th March 1868.

From—The Collector of Kurnool,

To—The Chief Secy. to the Govt. of Madras.

Referring to my letter No. 97, dated the 12th March 1868, and to the order of Government, No. 324 of the 11th idem, I have the honor to forward the detailed report submitted by Mr. Sharp regarding the destruction of the man-eating tigress on the Nandikanama Ghât.

2. I would recommend that the reward of Rs. 300 be given to Major Christie as head of the party which killed the tigress.

No. 15, dated 12th March 1868.

From—F. R. H. Sharp, Esq.,

To—The Magistrate of Kurnool.

In continuation of my letter No. 13 of the 9th instant, I have the honor to state that, on the night of the 3rd instant, *shikaree* Vencataswamy and constable Nagaloo were posted over a pool of water between the 72nd and 73rd mile-stones on Nandikanama Ghât, and *shikaree* Sheik Ali and another *shikaree* (name at

present unknown) were posted over the body of the man who had been recently killed by a tiger at a place about 300 yards from the other two.

2. Venkataswamy and Nagaloo then shot a large tigress, whose skin and claws have been produced here.

3. In my last letter I stated that it was at first* generally believed that the man-eating tiger on the Nandikanama was a tigress.

* That is, in November 1864, when the loss of life by tigers began.

4. That tigress, there is reason to believe, is at any rate one of the man-eaters which have so long infested the Nandikanama Ghât.

5. Six bandy men, who went of their own accord and saw its skin shortly after the animal had been killed, stated that about 20 days before, when passing over the ghât, they had seen a tiger carry off a man 30 yards from them near Dhoni Bhavi, and recognized the skin before them by its dark stripes, general appearance, and tail as that of the tiger they had then seen.

6. The man-eating tiger was commonly known as the Dhoni Bhavi tiger, and the animal now destroyed was shot about half a mile from the Dhoni Bhavi.

7. As the killing of this tiger is a special case, I think it best to report the matter for your orders, instead of disposing of it myself, and only conclude by recommending that the payment of the reward of Rs. 300 may be sanctioned, and by again requesting that a second reward of Rs. 300 may be offered for the destruction of another man-eating tiger, which, from the reasons mentioned in my last letter, is believed to be still infesting the ghât.

8. The *shikarees*, I understand, acted under the orders of Major Christie and Lieutenant Russell in occupying the position from which the tiger was destroyed, and Major Christie claims that the reward may be paid to him, as the tiger was shot under his arrangement, though he intends to transfer the sum to *shikarees*. In the event of your sanctioning the payment of the reward, I shall be obliged by your informing me to whom it should be paid.

No. 417, dated 2nd April 1868.

Order thereon by the Government of Madras.

The Governor in Council learns with much satisfaction that a tigress, which is known to be a man-eater in the neighbourhood of the Nandikanama Pass, has been shot by the party under Major Christie's direction. A sum of Rs. 1,000 will be placed at Major Christie's disposal, out of which amount he will disburse Rs. 500 to Venkataswamy *Shikaree*, and Nagaloo, Police Constable, in equal sums of Rs. 250 each.

2. Major Christie will distribute Rs. 500 in such proportions as may seem proper to him to those persons who, under his direction, have been engaged in the pursuit of this tigress.

3. With reference to paragraph 1 of the letter from the Magistrate of Kurnool, dated 12th March 1868, No. 97, it is observed, as already intimated in the G. O. No. 356 of date the 18th instant, that by G. O. No. 1278, dated 16th October 1867, the Collector was authorized to offer rewards to any amount he might deem proper, not exceeding Rs. 300, for the destruction of any man-eating tigers in his district.

Dated 1st April 1868.

From—Major H. L. Christie,

To—*The Chief Secy. to Govt. of Madras.*

Agreeably to your instructions, I have the honor to submit a report of proceedings against man-eaters.

Self and party took up a position at the foot of the Nandikanama Pass on the 17th February, and up to 25th March continued in incessant pursuit of tigers.

2. On the evening of 2nd March, "the tiger" killed a man. We went up the ghât following morning, tracked the man-eater to his lair, found the body, and posted two men over it, and two men over nearest water.

3. Up to date of our arrival, their bodies, I was told, had never been recovered, the people fearing to enter the jungle.

I may mention, on our arrival at the place, we found four village *shikarees* very indifferent ones; these men we employed, and strongly drilled and broke them in to assist us in night-work.

4. On the occasion in question two of these men shot the tiger over the water. During our stay at the place we all worked very hard after the tigers, and were very unfortunate, or should have killed at least three. But I think we have shown the people how to kill these animals at that place, and the remainder can be disposed of in like manner.

5. Should the Government be pleased to give the reward to me for distribution, I shall propose to divide it (*viz.*, Rs. 1,000) as follows:—Rs. 300 to village *shikarees* employed, the remainder for party, *viz.*, self, Captain Thompson, R. A., and Lieutenant Russell, Police.

6. I may state that the pursuit of these man-eaters is not only a very difficult but a dangerous undertaking, and we certainly did our utmost.

The very tigress we killed has, by Police reports, been killing men since November 1864. By the arrangements which we made we were fortunate enough to dispose of her in a fortnight.

7. Latterly our people all got so ill with fever that we were obliged to break up the camp for the time, but the operations will be continued at the Nandikanama, the principal place.

The village *shikarees* up to date of our arrival had never attempted to kill the tiger; they were in the habit of escorting the bandies and people up and down the ghât, and I suppose make a good thing of it in that way. We took the depositions of a number of people at the time as to the identity of the tiger; they appeared to be quite positive that it "was the one," having often seen it kill men close to them in the day-time. I beg to state, however, that others are left in the district; the destruction of human life has been very great; while we were there, some six men were killed. But there is no doubt the tigers can be killed; it merely requires method and perseverance.

8. I also submit a bill of expenses, which I hope will be considered moderate, as we spent as little money as possible on beaters, as I found it to be of no use.

Bill of expenses incurred by Major Christie's *party.*

	Rs.	A.	P.
Railway from Madras to Cuddapah, *viz.*, 2 1st class, 3 servants, 2 grass-cutters, and 2 horses	70	14	0
Railway from Cuddapah to Madras	70	14	0
Bandy-hire from Cuddapah to Nandikanama Pass and back ...	119	0	0
Coolies for beating	16	8	0
Batta for Mahouts and attendants, 12 in number	50	0	0
Extra baggage by rail, both ways	25	0	0
Total ...	352	4	0

Madras,
The 2nd April 1868.

H. L. Christie, *Major,*
Madras Army.

No. 456, dated 7th April 1868.

Order thereon by the Government of Madras.

The Government are much indebted to Major Christie and Lieutenant Russell for the skill and patience which they have shown in organizing the hunt which has succeeded in ridding the Nandikanama Pass of one of the man-eating tigers which have proved so destructive to human life in that neighbourhood.

2. These operations should be continued until the other tigers are killed.

3. With reference to paragraph 5 of Major Christie's letter, that officer is referred to G. O. dated the 2nd instant, No, 417.

4. The Governor in Council is pleased to authorize the payment of Rs. 352-4 for expenses incurred by Major Christie's party.

No. 133, dated 28th May 1868.

From—The Acting Magistrate of the Godavery District,
To—The Chief Secy. to the Govt. of Madras.

Captain W. Robertson, Superintendent of Police in this District, lately made a tour in the Rumpa country, which comprises the hill tracts.

2. He reports as follows :—

"The country in this part is overrun with tigers. When I was there, I was informed that almost every village had lately suffered from the ravages of man-eaters : no road was safe, and only a few days before my arrival a tiger charged a body of villagers within a few hundred yards of Kondada Station. A reward of Rs. 100 has already been ordered for one notorious man-eater; but I think that, if Rs. 100 were offered for all tigers killed in Rumpa (as is done in Jeypore), it might have a good effect. * * * I believe several of the smaller villages have been deserted. The villagers of Kondada told me that, were it not for the Police Station being there, they would move to other parts of the hills."

3. I have the honor strongly to recommend that Government will be pleased to sanction a reward of Rs. 100 being given for all tigers *bonâ fide* killed in the hill tracts of this district, as they have already done in this case of the Vizagapatam District.

No. 700, dated 9th June 1868.

Order thereon by the Government of Madras.

Sanctioned for a period of two years, at the close of which a report will be submitted as to the necessity for continuing the enhanced rate of reward.

Extracts from the Proceedings of the Government of Madras, in the Revenue Department for the months of January 1867, and February and November 1868.

READ the following :—

No. 3443, dated 7th December 1866.

From—The Collector of Ganjam,
To—The Secy. to Board of Revenue, Madras.

In reference to the enclosed copy of an account of the courage shown by five ryots of Tootipoorum in the destruction of a very savage bear and her cubs, I have the honor to request sanction for the disbursement of Rs. 40 to these five men, being about double the usual reward for three bears.

No. 207, dated 5th December 1866.

From—The Actg. Senior Assistant Collector,
To—The Collector of Ganjam.

I have the honor to forward, for your information, a report forwarded to me by the Carzee of Tootipoorum, in the Chikaty Division.

2. It appears therefrom that, for some time past, this village has been frequented by a bear, which, during the last few months, has killed no less than five persons, and on Saturday last, the 1st instant, wounded two* more severely, when five of the villagers hurried out in pursuit with only clubs and spears and fortunately succeeded in killing the bear and her two well-grown cubs without further loss of life.

* Lingum Ramdass and Goomsetty Ramaswamy.

3. The bears were brought into camp only a few miles distant, and I would beg to recommend that a suitable reward may be granted to the above individuals for the intrepidity shown by them in going to the rescue of the unfortunate two, who had been attacked by the bear.

Order thereon by the Board of Revenue, Madras.

Recommended for the sanction of Government.

No. 27, dated 7th January 1867.

Order thereon by the Government of Madras.

SANCTIONED.

No. 530, dated 5th February 1868.

From—The Officiating Conservator of Forests,
To—The Secy. to the Govt. Madras. Reve. Dept.

Man-eating tigers are causing a great loss of life along the whole range of Nallay Mallay Forests, from near Cuddapah up to the bank of the Kistna. There are said to be five altogether; one that frequents the Nandy Canama Ghaut is the most notorious, and is said to have killed upwards of 100 people. The Collector has already, I believe, reported to Government about this tiger, and a reward of Rs. 300 has been sanctioned. This might, I think, be raised to Rs. 500.

2. My Assistant at Nundial has, on several occasions, tried strychnine, but without success, as the tiger never comes back to his victim after his first meal, and he is never known to kill cattle. These jungles are not such as to allow of elephants being used, but the tiger might, I think, be killed if a large beat was organized. His whereabouts are generally well known, and as his depredations are considerably affecting our working operations, the Forest Department might give Rs. 100 towards the expenses of a beat if the Collector would organize one, and I have no doubt that sportsmen from Bangalore, Madras, and elsewhere would be glad to assist.

3. I have lately seen a large steel spring tiger-trap on the principle of a rat-trap; its cost is Rs. 70, and I have the honor to request sanction for purchasing it for use in these forests: its cost can be met from the amount sanctioned for contingencies.

No. 466, dated 19th February 1868.

Order thereon by the Government of Madras.

The purchase of the trap in question is sanctioned.

2. A beat with elephants for the tigers has been already organized.

No. 655, dated 14th October 1868.

From—The Collector of Kurnool,
To—The Actg. Secy. to the Board of Revenue, Madras.

I have the honor to inform you, in reply to proceedings of the Board of Revenue, dated 23rd September 1868, No. 6774, that up to the 1st September, from the date on which Major Christie's party killed a tiger on the Nallay Mallay Hills, eight men and two women have been killed on those hills by tigers.

2. On Nundial side, four *shikarees* at Rs. 7 a month, and on the Cumbum side five *shikarees* at Rs. 6 a month, have been employed since November 1867, as sanctioned by Government in their order dated 16th October, No. 1278.

3. They have not succeeded in killing any tigers, but they undoubtedly serve to give confidence to persons crossing the hills, and probably, through I have had no complaints against them, exact fees from the parties they escort. I do not think they are of any use, and would recommend that they should be discontinued.

4. The only way of rendering the pass through the hills safe, in my opinion, is to effectually clear the jungle for one hundred yards on each side of the road, and to keep up a regular establishment for keeping it down; but this has been objected to on account of its costliness, and the Board (*vide* Proceedings No. 6893, dated 28th September 1868) recommend four halting places at short distances along the road.

Submitted for the information of Government in accordance with their order of the 13th August 1868, No. 2155.

2. The Board have already in their Proceedings dated 28th September 1868, No. 6893, stated the course they recommend. They concur with the Collector in regarding the longer maintenance of nine *shikarees*, on Rs. 58 a month, as useless.

No. 2880, dated 17th November 1868.

Order thereon by the Govt. of Madras.

In their order under date 7th November 1868, No. 2805, the Government have sanctioned the adoption of measures calculated to contribute to the safety of travellers through the Nandikanama Pass, and, as observed by the Collector and the Board, the retention of the *shikarees* is a useless expense. Their discharge is accordingly sanctioned as recommended.

Extract from the Proceedings of the Board of Revenue,—No. 6893, under date the 28th September 1868.

The reports that have been from time to time received regarding the ravages of tigers on the Nandikanama Ghat indicate that the chief causes are the habit of night-travelling, and the excessive narrowness of the jungle-cutting through which the road is carried.

2. The jungle is described by Mr. Chase as in many cases brushing the bandies on each side.

3. The Board, in their Proceedings of the 4th June on reports from the Collector and his subordinates, selected the places noted in the margin as suitable points for the construction of secure halting places, considering that, by providing such at easy stages, the necessity for night-travelling would be to a great extent obviated.

1. Charavu Narasimha Pagoda.
2. Pacherla.
3. Mahodevooni Bhavy.
4. Ragoomani Guntalu.

	Rs.
Three enclosures with wells	1,970
Choultry with two wells ...	5,326
Total ...	7,296

4. It was also resolved that a choultry should be constructed at one of the stages, Pacherla. The Collector now submits estimates as noted in the margin, amounting to Rs. 7,296.

5. The Board consider the plan of choultry needlessly expensive, and would adopt the Malabar plan of a building enclosing three sides of a square, the fourth being enclosed by a strong palisade,—the building being, of course, so planned as to afford security from attacks of tigers.

6. As regards clearing the jungle, the Collector proposed, in the first instance, clearings on either side of 100 yards; but the estimated expense was so large, Rs. 10,000, that Government in their order dated 2nd April 1868, No. 876, declined to sanction it.

7. The Board consider that the safety of the road would be much promoted by the clearing, to a less extent, say of 20 yards, on each side.

8. An expenditure of Rs. 1,444-7-4 from the Road Fund has already been incurred, and it is impossible to indent further on this source for so large an expenditure as is required. The road, moreover, is an imperial one.

9. The Board, therefore, propose that Government should undertake to provide a moiety of the cost of choultry, halting places, and clearing, which will probably not exceed a total of Rs. 12,000.

10. In this case the Collector can be directed to revise his estimates, and to commence the work at once, and prosecute it vigorously in anticipation of sanction.

No. 2805, dated 7th November 1868.

Order thereon by the Government of Madras.

The propriety of taking some steps in order to protect travellers in the Nandikanama Ghât Road, in the Kurnool District, has for some time been under the consideration of the Collector and the Board of Revenue; but a former proposition of the Board, that a sum of Rs. 11,250 should be expended from imperial funds for clearing the jungle through the pass to the extent of 100 yards on each side of the road, was not acceded to by Government.

Proceedings dated 2nd April 1868, No. 876.

2. The Board now report that the chief cause of the frequent attacks made upon travellers by tigers are the habit of night-travelling, and the excessive narrowness of the cutting in the jungle through which the road passes. They therefore propose the construction of some secure halting places and an inexpensive choultry, considering that by this means the necessity for night-travelling will be to a great extent obviated. They also propose to clear the jungle on each side of the road to the extent of at least 20 yards. The cost of these improvements is roughly estimated at Rs. 12,000, and the Board request that a moiety thereof may be paid from imperial funds.

3. The Board's proposals are reasonable, and should be acted on with the least practicable delay. Much has been done towards opening the Nandikanama Pass, which is an imperial line; but it is still avoided by Native travellers and brinjaries owing to the want of secure and convenient halting places, and the outlay now proposed by the Board will serve to utilize what has hitherto been expended on the pass.

4. Orders will be issued by the Public Works Department for the payment of a moiety of the proposed expenditure, and the balance should at once be provided from local funds.

No. 259, dated 24th August 1869.

From—The Collector of Kurnool,

To—The Secy. to the Board of Reve. Madras.

I have the honor to bring to your notice that, having just passed through the Nandikanama Ghât, I made a point of considering what means might be taken either effectually to put a stop to the alarming ravages caused by tigers there, or at all events to lessen in some way the dangers of the pass from that source.

2. I hear that some 40 lives have been lost this year, and matters are coming to such a crisis that, unless some check is adopted, persons will entirely be prevented travelling on that road, and Cumbum and Markapore will become severed from the remainder of the Kurnool District. There is only one other pass, the Dornal, which at present is but little frequented owing to its being very far north, and the distance through the hills so very great without any intervening villages.

3. As an example of the dangers of the Nandikanama Pass, Lieutenant Russell, of the Police, was travelling at night on the 19th instant in a bullock carriage, with his driver in front of the bullocks leading them on, when suddenly a tiger rushed at the driver and within three seconds had carried him off and disappeared in the jungle.

4. The jungles for several miles is fearfully dense, and tigers hide quite near the road and run off with people passing before any resistance can be made. The road in the jungle is so narrow that a bullock carriage cannot pass without both sides touching the trees.

5. I think the only plan which could afford protection would be to have the jungle cut down for one hundred yards on each side of the road all through the pass, and this would open so large an area that probably tigers would not then come to the road at all.

6. In the Local Fund Budget sanctioned by Government there are several roads, which, for want of plans and estimates, cannot be commenced during the current official year. Rather than allow such money sanctioned to lie useless, I shall feel obliged if the Board would allow this clearance to be made.

7. For instance, Road No. 4, from Rampore Pass to Nandikanama Ghât, cannot, I think, possibly be commenced. For it Rs. 17,000 have been sanctioned. If the Board would allow some of this money to be laid out in clearing the jungle from the Nandikanama Ghât, commencing from near Kistam Shettypalli, the work might be taken in hand at once under the superintendence of the Acting Head Assistant Collector, and another commencement might be made at the other side of the Hill Gazerpally under the superintendence of Deputy Collector Sudarasana Row. At first about Rs. 1,000 might be entrusted to each of these officers, and, when some progress has been made, I should be in a position to estimate what the clearance through the whole length of road might be.

The Board sanction a grant of Rs. 1,200 from the Road Fund Reserve to commence the proposed work, which has their approval. Mr. Chase should send a detailed estimate of the cost.

No. 351, dated 20th November 1867.

From—The Collector of Kurnool,

To—The Secy. to the Board of Reve. Madras.

In reply to Proceedings of the Board of Revenue, No. 6132, dated 24th September 1867, I have the honor to forward an estimate for the cost of clearing the jungle through the Nandikanama Pass. The length that will require clearing is about 22 miles more, and the cost of clearing will be, at the rate of Rs. 500 per mile, Rs. 11,000, besides the Rs. 244-7-4 spent by Sudarasna Row in excess of the previous sanction, making a total sum of Rs. 11,244-7-4.

2. I have the honor, therefore, to request the sanction of the Board for the expenditure of this sum from the local funds from one of the roads which cannot possibly be put in hand for some time, as surveys, I hear, have not been commenced from Rampore Pass to Nandikanama Pass, No. 4.

3. I would urge most strongly the clearing of this jungle as soon as possible; for otherwise, from constant dread of tigers, I fear it will be entirely abandoned, as is almost the case at present.

The Board are of opinion that the Nandikanama Ghât is, and always has been, an imperial work, and therefore resolved to submit, for the sanction of Government, an estimate, received with the foregoing letter of the cost of clearing the jungle through the ghat. The total length of the ghat requiring jungle clearing was 25 miles, of which three miles have already been cleared at a cost of Rs. 1,444-7-4, though only a grant of Rs. 1,200 was made out of the

current year's road fund reserve in the Board's Proceedings dated 24th September 1867, No. 6132. Deducting the three miles, there remained 22 miles, which, at Rs. 500 a mile, would cost Rs. 11,000. Including the excess charge on the three miles, already cleared, the amount required will be Rs. 11,250. This is a heavy charge on the road fund, and can only be supplied by postponing more legitimate.

2. Should there be no imperial funds available for the work in question, the Board would not object to advance the required amount from the road fund, subject to recovery from the Public Works allotment.

Order thereon by the Govt. of Madras, No. 876, dated 2nd April 1868.

The Government are not prepared to adopt this recommendation.

Extract from the Revenue Proceedings of the Government of the North-Western Provinces for 7th December 1867.

PARA. 19. The year under report has not been without its gains and losses. The rains of 1273 ceased early; this enabled me to start my works sooner than usual. The sickness from the small amount of rain-fall was less; the rubbee crop all over the district was unusually good. On the other hand, cholera, during the months of April and May, carried off five hundred and ninety-six women and children. On the disappearance of the cholera, sickness attacked the cattle in these pergunnahs. Many ploughs in consequence coming to a stand-still, advances have been liberally made to enable the cultivators to replace their plough cattle; and lastly, the khurreef crop was very scanty; as an instance of what the cultivator in the northern villages bordering the forest has sometimes to go through, I would here mention an occurrence that took place on the night of the 27th March in the small village of Lohurra, Pergunnah Roodurpore (I do not believe that there is a similar case on record). About midnight, whilst most of the cultivators were out watching their rubbee crops, and there were only some fourteen or fifteen people in the village, a bear in the short space of two hours killed two men, three women, and one child, also wounding two men. He first entered the house of one Ahmed Yar Khan, Puthan, and killed two women. He next destroyed Sobratee, dhobee, who had come to the assistance of the women. He then entered the house of Ellai Buksh, butcher, and killed his wife and child. The husband attacked him with a knife, but the bear appears (from the investigation), with one blow, to have torn away his head and face. On retiring from the village he attacked six head of cattle, three of which died before morning. The cries from the village attracted the attention of two of the cultivators, who, proceeding from their fields to ascertain the cause, met the bear a short distance outside the village. He immediately attacked them, wounding them both, but the wounds were not serious. The following night the animal entered the adjoining village of Pertaubpore. He there entered the house of a "Raie" and wounded his wife; he then attacked the man, and had succeeded in wounding him badly on the arm, when he was shot by a man named Wully Mahomed; he was bit under the right shoulder and fell dead; he also wounded some cattle on approaching this village. The man who shot him was a "Shikary" of village Kutingree, in Pergunnah Kilpooree, and by great luck had come to the village the preceding day. Had he not been there, the beast would probably have taken more lives. I sent for the man and rewarded him. The cultivators came in a body, and stated that if matchlocks were not provided, and small walls built in front of their houses, they would leave the village. On making these arrangements, and explaining the improbability of such a circumstance again occurring, they were induced to remain. The "Booksas," who inhabit a village close to this, believe to this day that it was a man, who being a magician, under the influence of a devil, was enabled to destroy so many human beings. The beast, there is no doubt, was mad.

The year 1274.

It was at first supposed that it had been wounded by some one previously; and infuriated by his wounds, had attacked the village; but this was not the case, for I examined the skin carefully, and was only able to discover one small wound, and this corresponded to the account given by the people who saw the animal shot as to where he was hit. It was a small-sized male.

Extracts from Public Reports regarding wild animals.

Punjab Police Report for 1865.

PARA. 57. His Honor ordered this return to be included in the Police returns, and I therefore submit it:—

Statement showing the number of wild animals destroyed, the rewards paid for their destruction, and the number of persons killed and injured during the year 1865.

1	2	3	4	5	6	7					8					9				
Animals.	Males.	Females.	Cubs.	Total number of animals killed.	Total amount of rewards paid.	Number of persons killed.					Number of persons injured.					Total number of persons killed and injured.				
						Men.	Women.	Boys.	Girls.	Total.	Men.	Women.	Boys.	Girls.	Total.	Men.	Women.	Boys.	Girls.	Total.
					Rs.															
Tigers	17	3	3	23	311	3	3	32	33	71	9	1	3	...	13	12	4	35	33	84
Leopards	161	32	66	259	1,714															
Bears	106	5	52	163	1,034															
Wolves	1,708	644	3,596	5,948	25,144															
Total ...	1,992	684	3,717	6,393	28,203	3	3	32	33	71	9	1	3	...	13	12	4	35	33	84

Returns from the following districts have not yet been received:—Delhi, Peshawur, and Bunnoo.

Punjab Police Report for 1866.

PARA. 56. Statement showing the number of wild animals destroyed, the amount of rewards paid for their destruction, and the number of persons killed and injured during the years 1865 and 1866:—

1		2	3	4	5	6	7					8					9				
Animals.		Males.	Females.	Cubs.	Total number of animals killed.	Total amount of rewards paid.	Number of Persons killed.					Number of persons injured.					Total number of persons killed and injured.				
							Men.	Women.	Boys.	Girls.	Total.	Men.	Women.	Boys.	Girls.	Total.	Men.	Women.	Boys.	Girls.	Total.
During 1866.						Rs.															
Tigers		12	5	5	22	270	12	3	19	23	57	37	12	7	3	59	49	15	26	26	116
Leopards		209	36	62	307	2,087															
Bears		172	19	48	239	1,654															
Wolves		1,247	656	2,951	4,854	18,265															
Hyænas		...	...	...	3	...															
Total ...	1865 ...	2,156	763	4,285	7,204	30,833	3	3	34	33	73	9	1	3	1	14	12	4	37	34	87
	1866 ...	1,640	716	3,066	5,425	22,282	12	3	19	23	57	37	12	7	3	59	49	15	26	26	116

Paragraph 12 *of the Local Government's review.*

The return of wild beasts destroyed continues satisfactory. The number of licenses to manufacture arms and ammunition appears large in the Lahore,

Umritsur, and Rohtuk Districts; on the other hand, that of licenses to possess arms in the Umritsur District appears to be singularly small.

Punjab Police Report for 1867.

PARA. 41. The following table shows the number of wild animals destroyed during 1867:—

1	2				3	4					5					6				
Animals.	Number destroyed.				Total amount paid in rewards.	Number of persons killed.					Number of persons injured.					Total of persons killed and injured.				
	Males.	Females.	Cubs.	Total.		Men.	Women.	Boys.	Girls.	Total.	Men.	Women.	Boys.	Girls.	Total.	Men.	Women.	Boys.	Girls.	Total.
					Rs. A.															
Tigers	11	...	4	15	187 0															
Leopards	187	48	72	307	2,059 0															
Bears	136	20	59	215	1,411 0	7	7	6	10	30	17	1	5	5	28	24	8	11	15	58
Wolves	1,099	486	2,096	3,681	15,211 8															
Hyænas	3	...	...	3	...															
Total for 1867 ...	1,436	554	2,231	4,221	18,868 8	7	7	6	10	30	17	1	5	5	28	24	8	11	15	58
„ 1866	1,640	716	3,066	5,425	22,282 0	12	3	19	23	57	37	12	7	3	59	49	15	26	26	116
„ 1865	2,156	763	4,285	7,204	30,833 0	3	3	34	33	73	9	1	3	1	14	12	4	37	34	87

The three hyænas destroyed were in the Simla District; the rewards paid were not given in the return.

There has been a decrease in the number of wild animals destroyed, also in the number of persons killed and injured by them:—

Oudh Police Report for 1865.

PARA. 217. Deaths by wolves:—

In 1864	...	...	... 153
„ 1865	...	...	... 118
		Decrease	... 35

Oudh Police Report for 1866.

PARA. 217. Deaths by wolves:—

In 1865	...	...	... 118
„ 1866	...	...	... 140
		Increase	... 22

Oudh Police Report for 1867.

PARA. 231. Deaths by wolves:—

Districts.	Adults.		Children.	
	Males.	Females.	Males.	Females.
Lucknow	...	...	13	5
Oonao	...	1	7	6
Barabunkee	1	...	...	1
Pertabghur	3	1	2	1
Sultanpore	1	...	5	9
Fyzabad	...	...	7	9
Gondah	...	...	24	30
Baraitch	...	...	5	4
Kheree	...	...	2	...
Hurdui	...	...	7	14
Seetapore	...	...	...	1
Total ...	5	2	72	80

PARA. 232. There is a slight increase of deaths by wolves :—

1866	...	...	...	... 140
1867	...	...	...	... 159.

More than one-third of these deaths took place in Gondah, and in Lucknow, Oonao, Hurdui, Fyzabad, and Sultanpore. Wolves still appear to be pretty numerous.

Central Provinces' Police Report for 1865.

PARA. 31. The death of 2,593 persons and the injury of 386 persons by accidents were reported to the Police. The number of deaths is nearly the same as in 1864. Of the above, 546 persons were killed, and 137 persons were wounded by wild beasts. * * * * * * *

Paragraph 30 *of Chief Commissioner's review.*

The number of deaths from wild beasts is still considerable, though there is a diminution, probably owing to the increased destruction of these animals. The Police are frequently in a position to aid the District Officer in the preventon of these accidents, and to watch the localities likely to be infested. The District Superintendent should see that this is done.

Central Provinces' Police Report for 1866.

PARA. 40. By accidents 2,775 persons were killed, and 569 were injured. This is a considerable increase on the numbers shown in 1865, which were 2,593 killed and 386 injured. Of the above, 699 persons were killed, and 174 wounded by wild beasts. In 1865 the numbers were 546 killed and 137 wounded. The large increase in 1866 is greatly to be lamented. I have no return of the number of wild beasts killed, but I know it is considerable, and I should suppose it is larger than in 1865. Several of the Police Officers have earned the gratitude of the inhabitants of their districts by their success in destroying man-eating tigers.

* * * * * * *

Paragraph 25 *of Chief Commissioner's review.*

The number of persons injured and killed by accidents is very large, the returns showing an increase over the previous year; this is much to be lamented. An increase is also apparent in the number of human beings who have been killed and wounded by wild beasts, notwithstanding that many hundreds of wild beasts have been destroyed during the past and previous years, and that no opportunity has been lost by the Administration in offering inducements for their still more plentiful destruction.

The rewards paid by Government are very high, and it is feared that no good will accrue from their enhancement. During the year District Officers have been authorized to offer rewards ranging from Rs. 10 to Rs. 20 for the destruction of wolves, whenever it is found that they are more than ordinarily destructive to human life; of this authority in several districts advantage has been taken.

* * * * * * *

Central Provinces' Police Report for 1867.

PARA. 42. Two thousand nine hundred and nineteen persons were reported to have been killed and 620 injured by accidents during the year, being 144 in excess in the former and 51 in the latter of the number reported in 1866; of these 516 were killed and 256 were wounded by wild beasts. This is a decrease of 40 persons killed and an increase of 119 wounded as compared with 1866. As remarked in the observations on the Raepore District, I do not believe that all the deaths that occur from wild beasts, or nearly all, are reported to the Police.

Extract from the Administration Report of the Central Provinces for 1865 66

SECTION II

PARA 40 The Police Returns furnish the following statistics of death, which may be interesting —

	Died	Injured
* * * * * *	*	*
From wild beasts	546	137
* * * * * *	*	*

42 The following statistics of the number of wild beasts destroyed in the districts during the year may also be added in this place —

Tigers	543
Panthers and leopards	760
Bears	392
Wolves	168
Hyænas	387
TOTAL	2,250

for which rewards to the amount of Rs 35,462 (£3,546) were paid

Extract from the Administration Report of the Central Provinces for 1866 67

SECTION V

PARA 45 The returns showing the number of wild beasts destroyed during the last two years may be abstracted thus —

	During the year 1865	1866
Tigers	543	543
Panthers and leopards	760	982
Bears	392	512
Wolves	168	108
Hyænas	387	433
Snakes		6,010*

* This represents the number of snakes killed during the second half of the year 1866 previously rewards were not given for their destruction

for which rewards to the amount of Rs 49,820 (£4,982) were paid. Among the tigers killed were 13 man eaters, which used to live by destroying human life A few packs of man-eating wolves have recently been committing ravages in tracts of country near Jubbulpore Special rewards have been sanctioned for the destruction of these animals, and it is hoped that they will in time be killed off Heretofore the wolves of these parts have no habit of carrying off children, as is the case with wolves of Northern India

The Police Returns give the subjoined statistics of violent or accidental deaths in the Central Provinces —

		During the year 1865	1866
* * * * * *		*	*
From wild beasts		546	699
* * * * * *		*	*

Extract from the Administration Report of the Central Provinces for 1867-68

PARA 39 The Police have reported accidents to life during the year to the following extent as compared with the two preceding years —

	1865	1866	1867
From wild beasts	546	699	506
* * * * * *	*		*

The steady increase is probably to some extent owing to more correct reporting, but tigers are undoubtedly decreasing under the present liberal scale of reward still scarcely a year passes over but some man eating tiger is reported to have taken up his head quarters in the vicinity of a district road in the interior now falling on the unwary traveller, now on some unsuspecting cultivator, and by degrees grown bolder and more determined in his taste for human flesh, carrying off his prey from within the village enclosures The country *shikaree*

will have nothing to say to those man-eaters, and till special measures are taken, and the European District Officer or the European sportsman come to the rescue, the country round remains in a kind of panic.

40. The special attention of this Administration has, during the past few years, been given to the thinning, if not, of exterminating these wild beasts; and, in addition to the offer of liberal rewards, Government has sanctioned the allotment of several elephants to District Officers to aid in the measure.

The following is an abstract of what has been done in this way during the last three years:—

	Wild beasts destroyed during		
	1865.	1866.	1867.
Tigers	543	543	518
Panthers and leopards	760	982	895
Bears	392	512	534
Wolves	168	108	467
Hyænas	387	433	475
Snakes	...	6,910	13,644

Two reports of the destruction of man-eaters, one of which is said to have counted his victims by hundreds, have recently reached this Office.

Extract from the Administration Report of the Province of Oudh for 1865-66.

SECTION I.—PART III.

PARA. 76. The comparative number of accidental deaths are as follows:—

Mode of death.	1864.	1865.	Decrease.
By Wolves	153	118	35

* * * * * * * *

For the year 1866-67.

SECTION I.—PART III.

PARA. 64. The comparative number of accidental deaths is given in the following Table:—

Mode of death.	1865.	1866.	Increase.
By Wolves	118	140	22

* * * * * * * *

For the year 1867-68.

SECTION II.—CHAPTER II.

PARA. 30. The number of accidental deaths has again increased—

Mode of death.	Adults.	Children.
By Wolves	7	152

Extracts from the Judicial Proceedings of the Government of Bengal for July 1864 *and October* 1866.

No. 251, dated Simla, 16th May 1864.

From—A. COLVIN, Esq., *Offg. Under Secy. to the Govt. of India*, HOME DEPT.,

To—*The Officiating Secretary to the Government of Bengal.*

I am directed to forward copy of a despatch from the Secretary of State, No. 31, dated the 14th March, relating to the depredations committed by tigers, wolves, and other wild animals in several parts of India, and to request that you will be good enough to move His Honor the Lieutenant Governor to take such action on the subject as he may consider necessary.

I am desired to add that the inhabitants of villages exposed to the ravages of these wild animals should, if deemed expedient, be at once authorized to retain such a number of arms as may be absolutely necessary for their protection.

No. 31, dated 12th March 1864.

From—The Right Hon'ble Sir CHARLES WOOD, *Bart.*, M. P. *and* G. C. B., *H. M.'s Secy. of State for India,*

To—His Excellency the Governor General of India in Council.

It has recently been brought to notice that in several parts of India, more especially in the Madras Presidency, the lives of the inhabitants are frequently sacrificed, and the cattle and the crops are exposed to serious depredations, from the increasing numbers of tigers, wolves, and other wild animals.

I am aware that it is customary to offer rewards for the destruction of beasts of prey, and I believe that this means has ordinarily been found effectual in checking the evil. It is evident, however, that it has failed of late, and in some parts of the country, to produce this effect, and it seems not improbable that this result may, in part at least, be owing to the villagers having been deprived of their arms through the operation of the General Disarming Act.

In 1860 the Government of Bombay, with reference to the number of deaths from tigers in the Kolapore State, authorized both an increase in the amount of rewards and the distribution of a greater number of guns among the villagers, and these measures appear from subsequent reports to have been attended with success. I have to request that you will take the subject into consideration, and that you will, if you see fit, authorize such a number of arms being retained by the inhabitants of those villages which may be more particularly suffering from the ravages of wild beasts as may be absolutely necessary for the protection of themselves and their property.

No. 1166T, dated 30th June 1864.

From—The Secy. to the Govt. of Bengal,

To—All Commissioners.

I am directed to forward herewith copy of a despatch from the Right Hon'ble the Secretary of State for India, No. 31, dated the 14th March last, relating to the depredations committed by wild animals in various parts of India, and to request that you will submit a special report on the subject, accompanied by a return of deaths caused by wild animals during the past six years. The Lieutenant Governor will be glad to receive any suggestions you may have to make in respect to the destruction of noxious animals.

2. In filling up the form of return, you should, in the column of remarks, distinguish whether the animals killed were cubs or full grown, and also give details of entries under the head of "other animals." Deaths from snakes and alligators must not be included in the return.

No. 1166T, dated 30th June 1864.

From—The Secy. to the Govt. of Bengal,

To—The Commissioner of the Patna Division.

I am directed to forward herewith copy of despatch from the Right Hon'ble the Secretary of State for India, No. 31, dated the 14th March last, relating to the depredations committed by wild animals in various parts of India, and to request that you will submit a special report on the subject, accompanied by a return of deaths caused by wild animals during the past six years. The Lieutenant Governor will be glad to receive any suggestions you may have to make in respect to the destruction of noxious animals.

2. In filling up the form of a return, you should, in the column of remarks, distinguish whether the animals killed were cubs or full grown, and also give details of entries under the head of "other animals." Deaths from snakes and alligators must not be included in the return.

3. I am to request that you will at the same time report how far arms should be allowed in the district of Shahabad to serve as a means of protection against wild beasts.

Abstract of replies to Circular No. 1166T, dated 30th June 1864, calling for special reports relating to the depredations committed by wild animals in India, accompanied by a return of deaths caused by those animals during the last six years.

Rajshahye.—The Commissioner remarks that both tigers and leopards are exceedingly numerous in the districts of his Division, with exception to Moorshedabad; but as both are called "baugh" by the Natives, it is impossible to separate the destructions of one from those of the other, and that deaths from these animals in Rungpore are very common, the leopard being, in the Commissioner's opinion, quite as destructive as the tiger. Mr. Campbell does not think that these animals are on the increase, quite the contrary, and says that the present reward for their destruction is quite high enough, unless where the death of a tiger is specially called for, in which case he recommends that the reward be raised to Rs. 25. He objects to the general distribution of arms among the villagers, as they do not know how to use them, but considers that it would be a good move to have one or two *shikarees* on Rs. 5 each per mensem in the districts of Dinagepore and Rungpore, furnishing them with a double-barrelled gun and allowing them, in addition to their pay, the usual reward for each animal killed.

Assam.—The Commissioner submits his return without any remarks beyond a few having reference to the cause of delay in its transmission.

Patna.—The Commissioner observes that in the two districts north of the Ganges, *viz.*, Tirhoot and Chumparun, noxious animals are few as compared with those to the south of the river. He does not think that the returns of the District Officers are absolutely correct, as they have been most likely prepared from the Police reports, and do not include animals shot by sportsmen; and after noticing the failure of the late attempt to destroy the wild animals in Shahabad by means of regular establishments of Native huntsmen, he says that the system of paying a reward for each animal destroyed is the only one likely to prove in any way successful. Mr. Cockburn states that the Magistrates are willing to grant licenses to persons requiring fire-arms, and adds that he does not think that any increase has taken place in the number of wild animals from the disarmament of Behar and Shahabad.

Nuddea.—The Commissioner says that the records of his Division do not furnish complete materials for a return, but that he submits one containing, as far as possible, the required information. He remarks that the greatest number of deaths from wild beasts occur in the Sunderbuns and Jessore, and that, so long as the forests of the former remain uncleared, it will be hopeless to attempt to exterminate the wild animals inhabiting them. Mr. Dampier promises to instruct the Collectors of the 24-Pergunnahs and Jessore to authorize officers who move about the Sunderbuns to grant the prescribed rewards for the destruction of wild animals on the production of the heads, and recommends that the reward for killing tigers and leopards be doubled.

Dacca.—Mr. Buckland simply submits his return, remarking that the statement from Sylhet has not come in, but will be forwarded on receipt. It is stated in the return that, owing to the gradual clearing of the jungle in Dacca (districts), deaths from wild animals are on the decrease.

Cuttack.—Mr. Shore states that the large number of tigers killed in Cuttack and the heavy rewards paid will excite attention, and observes that the labyrinth of creek and jungle extending along the Cuttack Coast is such a harbour for tigers that the Salt Department, with a view to check their ravages, paid Rs. 15 for each tiger killed in addition to Rs. 5 paid by the Revenue Department; but now that the former reward has ceased, these animals will probably increase in number. He recommends, in concurrence with the Magistrates of Cuttack and Balasore, that the ordinary rewards for a tiger, as distinguished from a leopard, be raised from Rs. 5 to 10; beyond this the Commissioner does not think that any special measures are called for in the Mogulbundee part of the province, as the inhabitants have not been subjected to the Disarming Act, and wild animals have not increased during late years.

The Commissioner says that the regulation part of the province is that least infested by wild beasts, but that the Tributary Mehals are full of them, and, except in the three Government killahs,* no rewards are, as a rule, paid even for the destruction of tigers.

* Bankee. Ungool. Kund Mals.

On the contrary, the sporting Rajahs do not wish the tigers to decrease in number, and have sometimes fined, instead of rewarding, those who have killed them. He suggests that rewards be paid for killing animals in the Gurjats, as well as in the Mogulbundee, but doubts if even this will have any effect so long as the present immense tracts of impenetrable jungle will exist; and, in proof of this, mentions that the Rajah of Dhenkanal has killed 200 tigers and leopards with his own hand, without in any way decreasing the number of those animals in that killah.

In noticing the destructiveness of wild elephants in the Gurjats, north of the Mahanuddy, Mr. Shore remarks that they roam about in herds of from 80 to 200; but, notwithstanding that a Government reward of Rs. 50 is offered for the destruction of each elephant, the Natives will not and dare not shoot them, and he suggests that this reward be increased to Rs. 100, but thinks that it would be best to form keddahs for their capture.

The Commissioner promises a return of the persons and wild animals killed in the Tributary Mehals.

Chota Nagpore.—Colonel Dalton thinks the return he submits of little use as a comparative statement, because more care has been taken in the last year or two than in previous years to secure a correct return of casualties.

He says that the people of Lohardugga and Singhbhoom are all given to hunting, and, as they have all bows and arrows, or arms of some sort, are more than able to hold their own. That in Maunbhoom the population (Bengalee) is not much inclined to hunting, and, as a consequence, the mortality is great. That the deaths in Hazareebaugh are mostly by wolves; that since the reward for tigers and wolves was increased, the number killed yearly is increasing.

The Commissioner says that he is satisfied that the best way to ensure the destruction of wild animals in his Division is to increase the amount of reward and allow a supply of gun-powder in some districts, and he suggests that the rewards in Lohardugga, Singhbhoom, and Hazareebaugh be allowed to stand as at present, but that those in Maunbhoom be raised to the Hazareebaugh scale, so as to induce *shikarees* to resort to the district.

Burdwan.—Mr. Montresor remarks that some of the districts of this Division embrace large tracts of woodland and jungle, particularly Bancoorah, through which the high road to Juggernath runs, whence numbers of pilgrims are carried off by tigers without any one being the wiser, and he proposes that the owners of land along the road be compelled to clear the jungle to one hundred feet on either side, and that the reward for a tiger be increased from Rs. 5 to Rs. 20, and that for a bear from Rs. 2-8 to Rs. 5. In Beerbhoom *shikarees* abound, and the Commissioner does not think that any special measures are called for in this district, or in those of Burdwan, Howrah, or Hooghly, where there are scarcely any wild animals, though deaths do sometimes occur from the bites of mad dogs, snakes, &c. Midnapore has a large expanse of forest and jungle-land, and a large number of deaths are occasioned by tigers, bears, and leopards; and, though the Government reward is higher than in other districts, it is not, the Commissioner says, sufficient. He suggests, as a general remedial measure, that in places where wild animals are known to exist, a certain number of villagers be allowed to keep and use arms, and that the reward for a tiger be raised to Rs. 20, and those for other animals to double the present rates.

Bhaugulpore.—In submitting his return, the Commissioner says that it is imperfect, owing to the destruction of records in some places, and that, as there has been generally a marked decrease of late years in the number of persons killed and an increase in the number of animals destroyed, nothing beyond the present rewards for the extermination of wild animals is called for.

Chittagong.—Mr. Young does not think that the returns have been kept with any method, and suggests the issue of instructions on this head to the Inspector General of Police. He adds that, in addition to the present rewards, every encouragement should be given to the clearance and cultivation of jungly tracts.

STATEMENT of the number of persons killed by wild animals and the number of wild animals destroyed in Bengal during the last six years.

Division and District.	No. of persons killed by						No. of animals killed.						Amount paid as rewards.	Remarks.
	Tigers.	Leopards.	Bears.	Wolves.	Hyænas.	Other animals.	Tigers.	Leopards.	Bears.	Wolves.	Hyænas.	Other animals.		
Rajshahye.													Rs. A. P.	
Bograh	123	...	...	...	...	...	570	...	6	...	...	...	1,875 0 0	Cannot say how many of the animals killed were cubs, and thinks that many of those entered as tigers were leopards.
Dinagepore ...	178	...	...	...	...	...	(*a*) 104	(*b*) 236	...	...	...	...	1,057 8 0	Rewards were paid for the animals killed, but others were killed by private parties; (*a*) 1 cub; (*b*) 29 cubs.
Maldah	20	5	...	...	...	(*a*) 4	64	42	...	...	...	...	425 0 0	(*a*) One by a hog and 3 by jackals.
Moorshedabad ...	...	...	...	...	...	...	...	...	...	...	...	...	...	.....
Pubna	121	...	...	...	...	(*a*) 62	(*a*) 46	95	...	...	...	...	609 10 6	The list of persons killed is only for the last four years, the papers of the previous two having been destroyed; (*a*) 60 by jackals and 2 by hogs.
Rajshahye	77	...	3	...	...	19	30	73	...	...	...	...	309 2 8	.....
Rungpore	342	...	...	...	...	(*a*) 55	(*b*) 134	(*b*) 143	(*c*) 12	...	...	...	1,052 6 8	(*a*) Chiefly by hogs, but partly by jackals and buffaloes; (*b*) no cubs; (*c*) all cubs.
Assam.														
Gowalparah ...	(*a*) 74	...	6	...	...	(*b*) 42	225	69	50	...	...	(*c*) 115	1,707 4 0	(*a*) Eleven cubs; (*b*) 5 by bears, 3 by rhinoceros, 30 by buffaloes, and 4 by elephants; (*c*) 99 buffaloes and 16 rhinoceros.
Kamroop	229	...	22	...	...	41	(*a*) 3,402	(*b*) 1,424	(*c*) 345	...	...	(*d*) 254	21,022 8 0	(*a*) Two hundred and fifty-four cubs; (*b*) 98 cubs; (*c*) 94 cubs; (*d*) 240 buffaloes, 12 calves, and 2 elephants.
Durrung	65	44	5	3	...	(*a*) 71	326	204	75	...	...	(*b*) 700	416 7 8	(*a*) Fifty-six by buffaloes, 4 by mad dogs, 10 by boars, and 1 by rhinoceros; (*b*) 175 cubs.
Seebsaugor ...	8	...	...	...	...	(*a*) 21	157	33	1	...	...	(*b*) 214	1,421 4 0	(*a*) Three by elephants, 17 by buffaloes, and 1 by jackals; (*b*) 3 rhinoceros, 210 buffaloes, and 1 elephant.
Luckimpore ...	11	...	1	...	...	(*a*) 2	231	36	33	...	...	472	2,515 0 0	(*a*) By buffaloes.
Cossyah and Jynteah Hills	8	...	...	...	...	...	1	2	...	...	...	...	10 0 0	.....
Nowgong	336	...	...	...	...	(*a*) 15	(*b*) 133	...	6	...	...	(*c*) 12	672 8 0	(*a*) By buffaloes; (*b*) 21 cubs; (*c*) 2 elephants, 1 rhinoceros, and 9 buffaloes.

STATEMENT of the number of persons killed by wild animals and the number of wild animals destroyed in Bengal during the last six years,—continued.

Division and District.	No. of persons killed by						No. of animals killed.						Amount paid as rewards.	Remarks.
	Tigers.	Leopards.	Bears.	Wolves.	Hyenas.	Other animals.	Tigers.	Leopards.	Bears.	Wolves.	Hyenas.	Other animals.		
Patna.													Rs. A. P.	
Behar	(*a*) 248	...	1	1,287	2	43	4	15	4	(*b*) 46	10	...	263 10 0	This does not include 1858; (*a*) the records of 1859 and 1860 having been destroyed, this includes the total number killed during these years by tigers and other animals; (*b*) 8 cubs.
Chumparun ...	2	...	....	...	...	...	...	...	...	...	...	...	...	The Commissioner doubts the correctness of this return.
Patna	...	...	...	1,471	...	12	...	...	...	(*a*) 93	...	...	304 0 0	(*a*) Thirty-four cubs.
Shahabad	...	...	...	24	...	(*a*) 3	...	...	...	(*b*) 36	...	...	164 0 0	(*a*) One by a bull and 2 by buffaloes; (*b*) 4 cubs.
Tirhoot	1	...	...	6	...	10	3	...	...	(*a*) 4	...	(*b*) 27	...	(*a*) Four cubs; (*b*) 17 cubs.
Sarun	...	...	...	83	...	...	...	...	...	3	...	1	10 0 0	.....
Nuddea.														
Jessore	...	346	...	1	...	(*a*) 33	...	2	...	1	...	18	15 4 0	(*a*) Twenty-seven by jackals, 2 by buffaloes, 2 by boars, 1 by a stag, and 1 by an elephant.
24-Pergunnahs ...	103	...	...	...	...	...	26	3	...	...	...	...	218 0 0	.....
Nuddea	...	...	...	...	...	(*a*) 120	...	...	...	...	...	...	...	(*a*) The Magistrate cannot say by what animals, but thinks principally by leopards and partly by alligators.
Dacca.														
Dacca	101	18	...	...	...	...	9	21	...	...	3	...	103 8 0	Cannot say how many cubs.
Backergunge ...	56	1	...	...	...	12	15	7	...	...	...	...	82 0 0	.....
Mymensing ...	249	...	2	...	...	16	426	1,154	64	62	...	...	5,226 10 8	.....
Furreedpore ...	...	45	...	...	...	...	...	37	...	...	...	...	67 5 1	This is a doubtful return, as the Magistrate says that of the 37 leopards killed, 39 were cubs and 8 full-grown, thus making 47 killed, and adds that 1 tiger alone killed more persons than the whole number in the return.
Cachar	26	...	...	...	...	(*b*) 4	(*a*) 97	(*a*) 7	...	...	...	...	499 7 4	(*a*) Fifteen cubs; (*b*) by wild boars.
Sylhet	64	...	1	...	...	(*a*) 21	(*b*) 58	...	...	...	...	...	178 10 7	(*a*) Four by buffaloes, 12 by boars, 4 by elephants, and 1 by stag; (*b*) 6 cubs.
Cuttack.														
Cuttack	54	15	3	...	...	13	68	20	1	1	...	4	1,238 4 0	.....
Pooree	33	1	3	...	...	1	16	59	8	...	12	...	274 0 0	.....
Balasore	8	...	11	...	...	43	13	21	5	6	...	142	837 15 8	.....

STATEMENT of the number of persons killed by wild animals and the number of wild animals destroyed in Bengal during the last six years,—concluded.

Division and District.	No. of persons killed by						Amount paid as rewards.	Remarks.
	Tigers.	Leopards.	Bears.	Wolves.	Hyænas.	Other animals.		
							Rs. A. P.	
Chota Nagpore.								
Lohardugga ...	5	1	...	...	...	...	4,594 2 0	(*a*) Thirteen cubs; (*b*) 16 cubs; (*c*) 24 cubs; (*d*) 19 cubs.
Hazareebaugh ...	...	...	...	...	...	(*a*) 142	2,436 0 0	(*a*) Principally by wolves.
Maunbhoom ...	137	20	17	17	...	(*a*) 3	204 5 3	(*a*) Mad dogs; (*b*) 1 cub; (*c*) 2 cubs.
Singhbhoom ...	8	...	1	1	1	23	524 8 0	(*a*) Four cubs; (*b*) 11 cubs.
Burdwan.								
Bancoorah ...	...	38	14	...	...	...	346 5 10	(*a*) Sixteen cubs; (*b*) 56 cubs.
Beerbhoom ...	18	1	1	...	...	(*a*) 5	71 0 0	(*a*) One by boar, 2 by elephants, and 2 by domestic cattle; (*b*) cubs.
Burdwan ...	...	...	...	...	11	...	2 0 0	
Hooghly ...	...	...	...	(*a*) 28	...	...	5 0 0	(*a*) Can't say by what animals.
Howrah ...	...	...	...	...	...	(*a*) 30	5 0 0	(*a*) Twenty-nine by jackals and 1 by a boar.
Midnapore ...	227	72	...	...	...	(*a*) 18	329 9 4	(*a*) By mad dogs and jackals; (*b*) 1 cub; (*c*) 1 cub.
Bhaugulpore.								
Bhaugulpore ...	502	86	4	685	167	(*a*) 14	3,501 13 4	(*a*) Eleven by boars and 3 by elephants; (*b*) 1 cub; (*c*) 39 cubs.
Monghyr ...	...	...	2	685	11	(*a*)2,210	2,590 0 0	(*a*) Can't say by what animals, the records being insufficient.
Purneah ...	67	...	...	...	...	*a* 41	738 3 6	(*a*) Twenty-seven by jackals and 14 by mad dogs; (*b*) 24 cubs; (*c*) 4 cubs.
Darjeeling ...	14	...	...	...	...	...	402 8 0	No records as to the age of the animals.
Rajmehal ...	86	...	...	...	...	...	897 0 0	Ditto ditto.
Pakour ...	69	...	...	...	...	...	486 10 6	Ditto ditto.
Doomka ...	252	644	4	...	1	2	3,222 0 0	(*a*) Three cubs; (*b*) 32 cubs.
Godda ...	52	...	...	...	...	...	1,861 14 6	(*a*) One cub; (*b*) 1 cub; (*c*) 1 cub; (*d*) 2 cubs.
Deoghur ...	147	71	4	14	3	...	0 0 0	.....
Chittagong.								
Chittagong ...	53	...	...	...	...	...	65 0 0	.....
Noakhally ...	...	...	...	...	...	(*a*) 69	92 8 0	(*a*) Can't say what animals.
Tipperah ...	51	...	...	...	...	(*a*) 35	57 8 0	(*a*) Seven by boars, 6 by buffaloes, 1 by deer, and 21 by jackals.
TOTAL ...	4,218	1,107	105	4,287	174	3,210	65,071 9 1	

Division and District.	No. of animals killed.							
	Tigers.	Leopards.	Bears.	Wolves.	Hyænas.	Other animals.		
Chota Nagpore.								
Lohardugga ...	(*a*) 141	(*b*) 506	(*c*)348	(*d*)947	2	...	4,594	(*a*) Thirteen cubs; (*b*) 16 cubs; (*c*) 24 cubs; (*d*) 19 cubs.
Hazareebaugh ...	154	173	81	58	5	...	2,436	(*a*) Principally by wolves.
Maunbhoom ...	(*b*) 35	(*c*) 16	68	10	38	...	204	(*a*) Mad dogs; (*b*) 1 cub; (*c*) 2 cubs.
Singhbhoom ...	(*a*) 89	(*b*) 79	48	...	...	...	524	(*a*) Four cubs; (*b*) 11 cubs.
Burdwan.								
Bancoorah ...	(*a*) 5	(*b*) 48	123	1	1	...	346	(*a*) Sixteen cubs; (*b*) 56 cubs.
Beerbhoom ...	2	10	14	...	(*b*) 3	(*a*) 5	71	(*a*) One by boar, 2 by elephants, and 2 by domestic cattle; (*b*) cubs.
Burdwan ...	...	...	...	1	...	...	2	
Hooghly ...	1	...	...	...	...	...	5	(*a*) Can't say by what animals.
Howrah ...	...	...	...	...	...	(*a*) 30	5	(*a*) Twenty-nine by jackals and 1 by a boar.
Midnapore ...	16	42	(*c*)33	...	10	(*a*) 18	329	(*a*) By mad dogs and jackals; (*b*) 1 cub; (*c*) 1 cub.
Bhaugulpore.								
Bhaugulpore ...	(*b*) 133	(*c*) 295	34	16	10	...	3,501	(*a*) Eleven by boars and 3 by elephants; (*b*) 1 cub; (*c*) 39 cubs.
Monghyr ...	163	80	17	16	45	...	2,590	(*a*) Can't say by what animals, the records being insufficient.
Purneah ...	(*b*) 119	(*c*) 58	18	...	...	...	738	(*a*) Twenty-seven by jackals and 14 by mad dogs; (*b*) 24 cubs; (*c*) 4 cubs.
Darjeeling ...	56	20	9	...	...	...	402	No records as to the age of the animals.
Rajmehal ...	54	30	2	...	...	...	897	Ditto ditto.
Pakour ...	20	43	...	...	...	...	486	Ditto ditto.
Doomka ...	(*a*) 33	(*b*) 246	116	...	74	...	3,222	(*a*) Three cubs; (*b*) 32 cubs.
Godda ...	44	(*a*) 134	(*b*) 21	(*c*) 1	(*d*) 35	...	1,861	(*a*) One cub; (*b*) 1 cub; (*c*) 1 cub; (*d*) 2 cubs.
Deoghur ...	39	158	122	16	36	...	0	.....
Chittagong.								
Chittagong ...	9	8	...	...	...	...	65	.....
Noakhally ...	14	9	...	...	...	(*a*) 69	92	(*a*) Can't say what animals.
Tipperah ...	5	13	...	...	...	(*a*) 35	57	(*a*) Seven by boars, 6 by buffaloes, 1 by deer, and 21 by jackals.
TOTAL ...	7,278	5,663	1,671	1,338	296	1,950	65,071	

The following table shows the rewards sanctioned in 1850 for the destruction of wild animals generally in all divisions, and the special rewards sanctioned then and since for certain districts:—

Division and District.	Tiger.	Leopard.	Bear.	Hyæna.	Elephant.	Rhinoceros.	Buffaloe.	Wolf.	Remarks.
	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	
All Divisions ...	5 0	2 8	2 8	2 0	...	...	...	...	One-third the amount of reward to be paid for cubs.
Assam	...	...	...	...	0 10	5 0	2 8	...	
Midnapore ...	10 0	...	...	...	...	...	...	...	
Cachar	7 0	...	...	...	...	...	...	...	
Balasore ...	...	...	...	...	...	...	5 0	...	
Since 1850									
Hazareebaugh ...	10 0	...	...	...	...	...	...	8* 0	* Half for a cub
Cuttack	...	...	...	...	Rs. Rs. 30 to 40	...	...		
Bhaugulpore and Monghyr, south of the Ganges, and Sonthal Pergunnahs.	10 0	10 0	...	2 8	...	...	...	5 0	
Patna, Behar, and Shahabad.	...	...	...	...	...	...	...	6* 0	* Cub ... 2.

* It is only in the districts of the Patna and Bhaugulpore Divisions that any rules are laid for granting rewards. In both Divisions the rewards are paid by Police Inspectors on the production of the dead animal, but in the Bhaugulpore Division the head and skin are sent in to the Magistrate by the Inspector.

Resolution by His Honor the Lieutenant Governor of Bengal, dated the 2nd November 1866.

Read a letter from the Government of India in the Home Department, No. 251, dated 16th May 1864, forwarding a copy of a despatch from Her Majesty's Secretary of State on the subject of the destruction of human life and the depredations committed by tigers, wolves, and other wild animals in India, and directing this Government to take such action on the subject as may be considered necessary.

Read also the reports and statements called for by Government and submitted by the Commissioners of the different Divisions in the Lower Provinces regarding the deaths caused by wild animals killed during the same period.

1. *Rajshahye.*—In the districts of the Rajshahye Division, with the exception of Moorshedabad, tigers and leopards are numerous; but the Commissioner thinks that the number is decreasing, and considers the present scale of rewards quite high enough, unless where the death of a tiger is specially called for; and he recommends that the reward in each case of this description should be raised to Rs. 25. The Commissioner objects to the general distribution of arms among the people, as they do not know how to use them, but thinks that two *shikarees* on a salary of Rs. 5 each per mensem, with other advantages, might be employed in the districts of Rungpore and Dinagepore.

2. The Lieutenant-Governor approves of the proposal to grant a reward of Rs. 25 in each case when the special circumstances of the case render it a matter of very great importance that any particular tiger should be destroyed. The Commissioner should, however, first satisfy himself in each case that the ordinary reward is not sufficient, and that special circumstances exist which warrant the grant of the special reward. Care must also be taken to ascertain that the tiger for which the special reward is offered has been killed, and that the body of another tiger has not been substituted.

3. The plan of employing paid *shikarees* for the destruction of wild animals has failed under more favorable circumstances than the districts of Rungpore and Dinagepore would present for the carrying out of the scheme, and it is not therefore considered advisable to try it in those districts.

4. *Assam.*—In Assam the existing scale of rewards is sufficient, and no special measures are called for.

5. *Patna.*—The same may be said generally of the Patna Division, where wild animals are not on the increase. In Shahabad there is great loss of life from wolves, but a special reward has already been sanctioned for the destruction of this animal in that district.

6. *Nuddea.*—In the Nuddea Division the greatest number of deaths from wild animals occurs in the Sunderbuns and in the Jessore Districts, where special arrangements for exterminating dangerous animals are impossible, until such time as the forests and the jungle in the Sunderbuns are more cleared.

7. The Commissioner may be desired, if he has not already done so, to authorize officers who move about the Sunderbuns to grant the prescribed rewards for the destruction of wild beasts on the production of the heads.

8. *Dacca.*—In the Dacca Division no special rewards are called for, as, owing to the gradual clearing away of all jungle, deaths from wild animals are on the decrease.

9. *Cuttack.*—In the Cuttack Division the reward for killing a tiger was formerly Rs. 20, of which Rs. 15 was paid by the Salt and Rs. 5 by the Revenue Department, and great numbers of these animals were annually destroyed, but the reward from the former Department has now ceased. As the Commissioner expects that tigers will increase in numbers owing to the smallness of the present reward, he may be informed that his recommendation to increase it from Rs. 5 to Rs. 10 for each tiger has been sanctioned.

10. In respect to wild elephants, the Commissioner observes that they are very destructive in the Gurjats, north of the Mahanuddy River, where they roam in herds of from 80 to 200; and as the Government reward of Rs. 50 for each elephant is not sufficient to induce the people to run the risk of attempting to destroy them, he suggests that the reward be increased to Rs. 100, or that kheddahs for their capture be formed.

11. The Lieutenant Governor would rather see these useful animals captured than killed, and the attention of the Commissary General will be drawn to the question whether kheddahs might not be established. The Commissioner should also consider whether private persons might not with his assistance find the capture of these animals a profitable employment.

12. *Chota Nagpore.*—The existing arrangements and rewards are sufficient in all the districts of Chota Nagpore, with the exception of Maunbhoom, where the people being Bengalees are not much given to hunting like the people of the other districts, and the mortality from wild animals is consequently great.

13. The Commissioner may be told that, under the special circumstances of the case, his proposal to raise the rewards for destroying wild animals in this district to the scale allowed in the Hazareebaugh District has been sanctioned. It is hoped that this measure will induce *shikarees* to resort to Maunbhoom to hunt and destroy noxious animals.

14. *Burdwan.*—The districts of Burdwan, Howrah, and Hooghly, in the Burdwan Division, are nearly free from wild animals; but in Bancoorah there are large tracts of woodland and jungle through which runs the high road to Juggernauth, whence numbers of people are said to be carried off by tigers.

15. The Commissioner should adopt measures to compel the owners of land along this road to keep it clear of jungle for 100 feet on each side of the road. The increase of the reward for each tiger killed from Rs. 5 to Rs. 10 is also sanctioned both for the Bancoorah District and for that of Midnapore.

16. *Bhaugulpore.*—No special measures are required in the Bhaugulpore Division, as there is a marked decrease of late years in the number of persons killed by wild animals and an increase in the number of animals destroyed.

17. *Chittagong.*—In the Chittagong Division also the existing rate of rewards is sufficient; but the Commissioner should be told that it is the duty of the Magistrates to keep the returns of deaths caused by wild animals, and of the number of wild animals killed, and to see that the Police are careful and precise in furnishing information under both heads.

18. It should be suggested to the Commissioners generally that strychnine might be used with advantage and without risk in all cases where a tiger takes up his abode near a village and preys upon the people or their cattle. The poison might be introduced into the body of a cow or other animal after it has been killed by the tiger, but it should only be so used by the Police, or at least under their orders and immediate supervision.

ORDER.—Ordered, that a copy of this Resolution be forwarded to all Commissioners, to the Accountant General of Bengal, and to the Inspector General of Police, for information; also that extract (paragraphs 10 and 11), with extract, paragraph 4, from the Report of the Commissioner of Cuttack, No. 20, dated 13th May 1865, be forwarded to the Commissary General.

No. 4775.

Copy forwarded to all Commissioners.

No. 4776.

Copy forwarded to the Accountant General, Bengal.

No. 4777.

Copy forwarded to the Inspector General of Police, Lower Provinces.

No. 4778.

Extract, paragraphs 10 and 11, of the above, with extract, paragraph 4, from Report of Commissioner of Cuttack, No. 20, dated 13th May 1865, forwarded to the Commissary General.

No. 383, dated 22nd September 1866.

From—COLONEL H. HOPKINSON, *Agent to the Govr. Genl., N. E. Frontier, and Commr. of Assam,*

To—*The Secretary to the Government of Bengal.*

I have the honor to report, for the information of Government, that tigers have become very numerous in the Jynteah Hills, and during last month the Assistant Commissioner in charge reported that no less than 14 human beings had been killed by them. Among the victims was a Havildar of the 5th Native Infantry, who was on his way to join the Detachment at Jowai.

2. In the neighbourhood of Cheera Poonjee and in Cheera Poonjee itself, tigers have also been doing considerable damage, four or five people having been killed by them within the last twelve months, besides a good number of cattle.

3. The Officiating Deputy Commissioner of the Cossyah and Jynteah Hills having been called on to report what measures he would recommend for lessening the number of tigers, suggests that the reward for killing them should be increased, so as to induce people to engage actively in their destruction, and the amount at which he would propose to fix the reward in future is Rs. 25 instead of Rs. 5, the present rate.

4. I beg to state that I concur entirely in Captain Clark's suggestion, and would recommend that it be sanctioned for the Cossyah and Jynteah Hills as a

special measure. The reward for tiger cubs and full-grown leopards now fixed at Rs. 2-8 per head should also be increased proportionately, and be equal to half the reward given for tigers.

No. 2862T, dated 5th October 1866.

From—J. GEOGHEGAN, ESQ., *Offg. Junior Secretary to the Government of Bengal,*
To—*The Commissioner of Assam.*

I am directed to acknowledge the receipt of your letter No. 383, dated the 22nd ultimo, and in reply to inform you that the Lieutenant Governor has been pleased to sanction the increase of the reward for killing tigers in the Cossyah and Jynteah Hills from Rs. 5 to Rs. 20 for each tiger.

2. His Honor also sanctions your proposal to increase the reward for killing tiger cubs and leopards in those hills from Rs. 2-8 to Rs. 10 each.

3. These increased rewards should, the Lieutenant Governor thinks, be sufficient inducement to the people to hunt and kill these animals, which are now so destructive to life.

No. 2863T.

COPY forwarded to the Accountant General for information.

Dated Simla, the 9th August 1869.

From—CAPTAIN B. ROGERS, *Bengal Staff Corps,*
To—*The Private Secy. to His Excellency the Viceroy.*

I have the honor to submit the following plans and suggestions, as I imagine they may be useful in case it should be the wish or intention of Her Majesty's Indian Government to take further measures, or adopt a regular system for the destruction of the wild animals that infest this country, killing large numbers of Her Majesty's subjects and committing such depredations on those poorer tribes who live in or near the jungles, and whose little all is vested in their one or two head of cattle on which these animals so frequently prey.

I am aware of a case in which a tiger entered a herd of cattle, and in a short space of time killed six in the sight of a friend of mine.

By killing as they do these cattle, not only are the villagers losers, but also the Government in an indirect way.

It is by these people, and these people again assisted by their live agricultural stock, that the vast jungles are becoming tracts of cultivated country; but the wild beasts greatly retard the same, and act as a considerable check on the energies of those unfortunates, who are now to a great extent at the mercy of any tiger or other beast of prey that may take up its quarters in their district.

I have on every opportunity visited the jungles, being fond of sport, and taken much pains in ascertaining the habits and peculiarities of all the larger game of this country.

There are many tigers, I have no hesitation in saying, now at large that have killed more than one hundred men each; and I have known of one that defied all the endeavors of some of the best sportsmen in India for upwards of three years, and during that time remained within a circle of 25 or 30 miles, killing, it was calculated, more than two hundred people and numbers of cattle.

A reward of two hundred Rupees was on its head, and most of its "kills" were carefully watched.

Had the system I am about to propose been in vogue, it must have been killed in a few days, or at the most a few weeks, and by the death of that one animal nearly all the lives taken by it saved.

I am also aware of a second animal in Chota Nagpore. Every hour I could get away I was after it, following it frequently day and night. Its deeds of blood were hardly less frightful than the former.

On finding myself so ill as to be obliged to proceed to England in 1864 on medical certificate, and being thus unable to kill the beast fairly, and at the same time not wishing to leave it alive, I had a trap laid very similar to the one I recommend, and it was killed on the second or third day.

No thefts or murders in India can exceed the horrors and misery caused by the wild animals, and no picture or language can give even a faint idea of the suffering of their victims. These poor creatures, living as they do for the most part in districts seldom or ever visited by any European, except an occasional sportsman, are obliged to bear their losses or sufferings with little or no chance of the same being brought to the notice of the Government whose subjects they are.

It is only by mixing with the villagers when out shooting, and being able to converse freely with them, that anything like an idea of their position can be realized. I have frequently assisted men who have been torn by tigers, and heard their history of the circumstances connected with their individual cases, and find that a Native, who is naturally well qualified to make a good story out of his heroic deeds and adventures, can hardly do justice to the positions they were in.

A short time since I would have scorned the idea of killing a tiger or other beast by stratagem, and would have felt the most supreme contempt for any English sportsman doing so. The same feeling is, I am confident, entertained by almost every sportsman, hence the reason of this most important subject not having been brought so prominently to the notice of Government as it otherwise would have been, as from this class of person alone the requisite information could be furnished.

My ideas are now changed, and I feel it to be much more commendable to save the lives and property of nominally protected human beings, and esteem it a matter of duty to thus address you, in the hopes of your kindly soliciting His Excellency the Viceroy to be graciously pleased to allow this communication to be laid before him.

I have, perhaps, gone into the subject too fully. I sincerely trust you will not consider it presumption my having done so.

I look upon it in the light of a question involving the lives of hundreds of persons yearly; and in a second and less serious light, as affecting the loss of cattle to the value of very many lakhs of rupees for the same period, and the same being almost entirely the only worldly property of thousands of half-starved creatures of a much more honest and truthful disposition than the inhabitants of the towns and villages in the immediate vicinity of our stations. ***There is a wide difference between cattle stolen and the cattle thus destroyed.*** In the former case the animals may be recovered, or if not, they are still available for human food, or to assist man in his daily labor; but in the latter, it is simply destruction. The victims knowing of no power to help them, look upon the loss of their one head of cattle as their fate, and experience has taught them that no effort of theirs can prevent it, and they are ignorant as to whom to apply for that assistance of which they stand in need.

It is almost ruin to them, and for years they feel the loss, having in all probability to borrow money from bankers or others at an exorbitant rate of interest to enable them to purchase another animal, and thus continue their vocations.

These mahajuns who furnish the requisite funds are, as a rule, grasping and cruel in the extreme in the manner they treat their creditors: he is a fortunate man who being once in their power has not good reason to regret it to his death.

Rewards cannot and will not reduce the number of wild beasts; but a regular system, such as I propose, must eventually exterminate them, or render their power of doing injury *nil*, as on their first appearance they find death on their road, and the missle that kills them has no power of injuring persons or property if used with the care that the most simple-minded *shikaree* can exercise.

Accidents will and must happen, but these, under all circumstances, are unavoidable.

One of the many objections to the present system of rewards is this—a *shikaree* knows of a tiger, and has the means of killing him; but he does not do so, but allows the animal to continue his deeds of blood undisturbed. "Why?" because he looks forward to a sahib coming out and shooting it, and his getting, not only a higher pecuniary reward, but also ammunition. Should such be the case, the sahib only in the end pays the sum he gives over and above the reward, as on application to the civil authorities he recovers the amount of the sanctioned reward, and retains what he greatly prizes, *viz.*, the animal's skin; of course the value of any ammunition he may, or may not, have given would be nominal.

I have also heard men complain of the trouble in obtaining the rewards. Native landholders also, in many instances, do not like wild beasts being killed on their estates, because they imagine it gives them a chance (if these jungles contain tigers) of making friends with some influential English gentlemen, especially when they find him in that most amiable temper that a sportsman always is when standing over the skin or body of a tiger he has killed and that has given him good sport. I do not for one moment intend to convey the idea that an English gentleman is influenced in any way by circumstances of the kind, but the result is the same—Natives believe such to be the case, and I am confident that this has allowed a tiger many times an extra draught of human blood, and over and over again left him undisturbed to feed on the cattle of the ryots, when otherwise he would have been destroyed.

To prevent the above no rewards would avail that could be sanctioned for killing the animal; neither will they in parts of India where superstition exists regarding the animal.

Many circumstances, differing widely from each other but with similar results, have induced me to recommend certain slight particulars in my form of returns, which experience has proved to be necessary. Of these forms, I have sent herewith only two, as I imagine they will be quite sufficient to explain how I propose my suggestions should be carried out; and I have endeavoured to be as brief as possible so as to prevent the perusal of this letter taking up more of your valuable time than is absolutely necessary to put you in possession of the basis of my proposed operations, the manner in which they should be carried out, and my reason for believing operations of the kind advisable.

The extent of country over which I would propose they are granted a trial is immense, and until it is proved by practical experience that the results are all I represent them as likely to be, of course the sum granted for carrying out the same would be very limited. They are therefore of the most simple nature that can, I believe, be arranged to ensure correct reports being received of the exact loss and injury caused by the different classes of animals, their estimated pecuniary value, and the result of the endeavours of the executive to improve matters.

With regard to the weapon, I propose the use of the old muskets, that have merely a nominal value as iron, and are constantly being broken up and sold as

such. These would still remain the property of the State, and could at any time be called in, and still retain as great a pecuniary value as they had when issued.

An adjustment attached to the trigger is the only expense, and this would not exceed four annas per musket.

There are three strings attached to this trigger adjustment. The one marked A is the fatal one, and, running along the barrel, crosses the path these animals frequent, and is set at the height of the shoulder of the beast it is desired should be killed; and that string represents the line of fire. The bullet, therefore, invariably enters the most fatal part. It is a well known fact that wild beasts do not wander, as animals of the deer tribe do, all over the jungle, but invariably travel by the paths and roads through the jungle when going for food or water; and that, in the event of one being killed, and another coming to the same district, the chances are ten to one that animal will use the same paths and roads, and take up his quarters in almost exactly the same spot as his predecessor. Their haunts and walks are well known to every *shikaree* in the district, and it would be a matter easily determined as to where to set the gun to ensure the animal's destruction before it had time to do much injury.

To prevent the destruction of animals that should not be destroyed, there are two other strings attached to the trigger, and these (marked BB) are laid at such a height from the ground as to allow a tiger or other animal it is wished to kill to pass underneath without touching.

These are not laid in the same straight line as the one laid for the animal to be killed, but right and left of it, at such angles and distances as may be necessary under different circumstances.

Cattle or persons coming in contact with these strings cause the gun to go off, and its fire is perfectly harmless. Other precautions of an ordinary nature, and depending on circumstances, and also on the ground, could be taken by any common *shikaree*, ensuring favorable results and the prevention of accidents. I will not, therefore, go further into the description of the weapon and its use, the diagram I attach renders it unnecessary.

Ammunition would be furnished as required on payment and at cost prices, and would be obtained from Government Magazines. On account of the extent of ground to be protected and watched, it would doubtless at first be imagined that a much larger amount of ammunition and number of arms would be required than are absolutely necessary. The exact quantity and number could not be stated until it was known where this is to be granted a trial, if it is to be tried. English fire-arms would only be given to men who would be best fitted to use them, and most men would have a roughly constructed adjustment given them to be placed on their matchlocks; but this would not in all cases insure fatal results, as their action is not certain or instantaneous.

In those districts where bows and arrows are the arm of the Natives, the same attachment can be used, and nearly equally fatal results secured with that antiquated weapon. At the same time, here and there in those districts, a gun would be issued to an intelligent Native, who would doubtless make good use of it, and many men would exert themselves in hopes of having a gun issued to them. The *shikarees* of the districts can be organised, and prove a most formidable body of Police (if I may call them so) to act, not against human robbers and murderers, but still the greater curse of the country—the animal tyrants of the jungle and forests. No Native *shikaree* should be granted the use of a gun without paying an annual tribute to Government of ten rupees. This may appear hard, but it is not so, when animals (deer) are plentiful, and it would be the wish of Government that they be destroyed, ten rupees would be easily earned; for, on a beast being killed by a *shikaree*, its flesh is exchanged for grain, and the

average value is about two seers of grain for one of flesh, which is the reason of so many lazy fellows being *shikarees* ; and if their number were reduced to one-third of what they now are, many men would be obliged to work at their trades or cultivation, instead of going out one or two days in the month and killing an occasional animal, which enables them to live in ease and luxury (according to their ideas) for the remaining days; and thus, as is always the case, one lazy man will not only not work himself, but keep others also from their work, and, instead of being a useful member of his society, he is a public nuisance. Most of the animals killed would come from the Government waste lands, and are thus the property of Government; and even, if such were not the case, the hardship would not be great. The payment need not always be in coin of the realm. It could be made in skins or horns. If he cannot kill enough during the twelve months to enable him to pay the license tax, either he is not fit for a *shikaree*, or lazy, or there is not a sufficient quantity of game to render it necessary for him to be granted a certificate without payment.

Eight rupees could be given as a reward, but never more, except under special circumstances, having no reference to the damage the tiger is doing, but to any extra trouble or injury the *shikarees* has sustained in killing it; for instance, if he has tied up cattle to entice the animal to pass the line of the fatal chord, and the beast kills them, I would recommend that he receive compensation in addition to the eight rupees, which is merely a remuneration for his time and trouble.

A certain number of *shikarees* should hold certificates gratis, and not pay the ten rupees yearly, for which favor, on them could rest the responsibility of wild animals being killed on their making their appearance, or committing any loss or injury in their district. The number of *shikarees* being reduced by not paying the ten rupees yearly would greatly increase the value of the privilege of those gaining a certificate gratis, and further stimulate the energies of others who pay for theirs to kill wild animals in hopes of having a similar favor conferred upon them.

It is only on due consideration, and with a general knowledge of the jungles and their inhabitants, both human and animal, that the full value of the license thus given in the certificate can be conceived, or how it would be appreciated by the individuals holding it. One or two men in each district would receive one of the guns furnished by Government, and in case of an animal being killed, the reward paid by the Government would not, as a matter of course, be given to one individual, but be divided between two or three, if it was considered right.

I would appoint in each district a jemadar of *shikarees*, who will report every irregularity committed by the others in his district, for which responsibility he would receive yearly one coat of the value of twelve rupees. Although this appears a small remuneration, yet it is enough, and carries with it a dignity of which that class of men would be greatly proud, and he would wear it on grand occasions; and, being a little chief of the jungles in his way, would be most zealous in his endeavour to retain his position. Of course his appointment would only be from year to year.

All skins of animals and their claws, for which a reward is paid, to become the property of Government, and no person should have the option of purchasing the same, but that they be sold at stated places and at appointed times, of which due notice would be given. These will realise a large sum of money, and, with a little management, a number of valuable skins can be brought into the market; and a small sum being given for skins on which care had been bestowed would soon induce the Natives to give them up in a better condition than at present.

The granting of certificates should rest entirely with the officer of the district superintending the destruction of these animals, whether the certificate be paid for or not; and should the district civil authorities even consider it advisable for more certificates to be granted, they should refer the matter to that officer,

and that officer should, if he think fit, refuse to grant a certificate even on payment; and further, no man, European or Native, should be allowed to give his servant a gun to discharge with the intent of killing an animal, unless that servant has a certificate, without being liable to a fine for so doing, as well as the man using it. Any man having a certificate, paid for or not, and seeing another man use a gun for the destruction of animals without having a certificate, to be liable to forfeit his certificate if he does not at once report the same to the nearest Police Station.

A man holding a certificate never to go out with his gun without it, and on all occasions to produce it when called upon to do so by a man holding one, or by the civil authorities.

On an animal being killed, the man must report it to the nearest Police Station at once, where he will receive the authorized reward, and deposit the skin. If the skin is not perfect, the fact must be mentioned in the regular form reporting the case, and sent from the Police Station to the District Superintendent of Police, who will forward the same in the Vernacular to the officer superintendending the destruction of the animals, keeping a duplicate in his Office.

If the skin is in a very bad state, the reward could be withheld until the reason of the same was investigated.

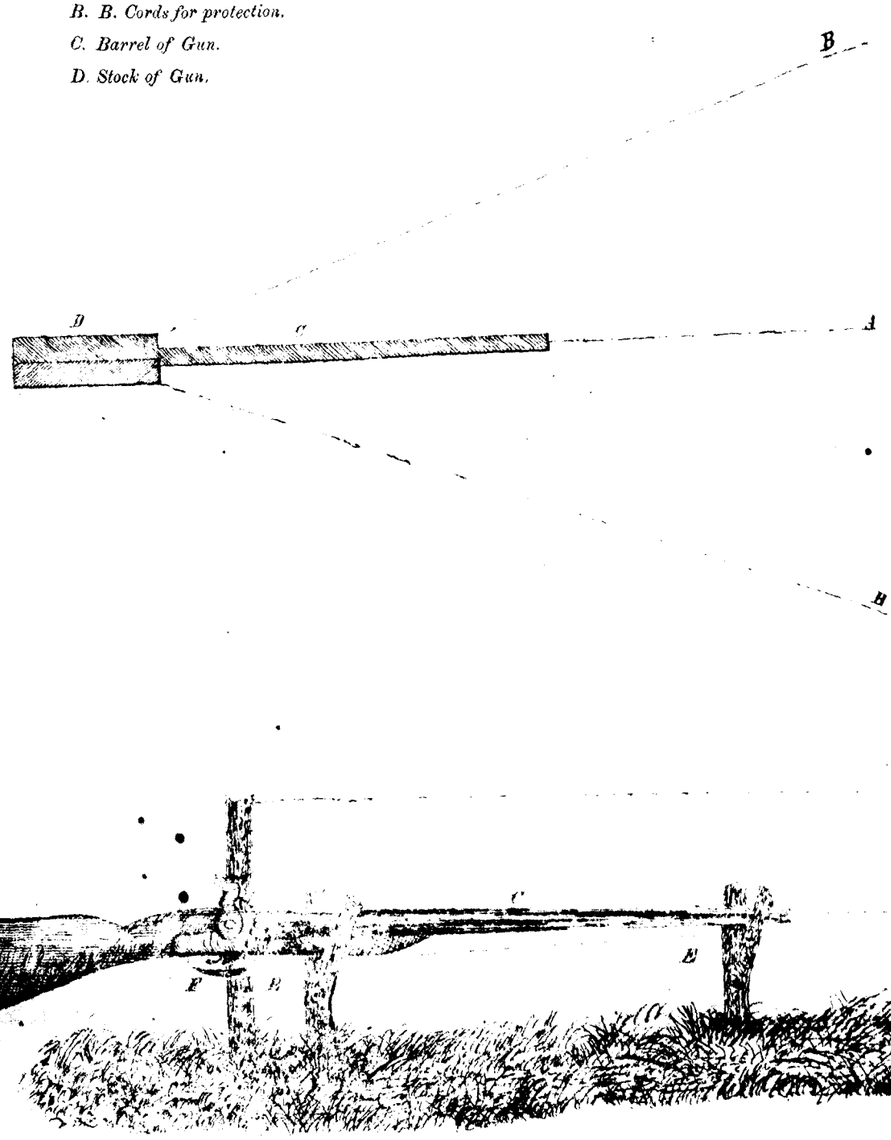
In the event of any people or cattle being killed or injured, the headman of the village in which the same occured should report the same (whether they belong to his village or not) at the nearest Police Station, and, in the case of cattle, state their value, and always mention by what class of animal the injury was committed, and the date; and the above should be communicated in the form sanctioned to the District Superintendent of Police, who, if convinced of its truth, would forward it on as before to the officer superintending the destruction of wild animals.

Of course this return would be in the Vernacular; and the reason it is sent through the Police is to ensure its being a true statement, and prevent false records being framed.

A monthly and annual statement would of course be compiled, showing all the points above referred to, and reporting general progress.

In conclusion, I will say nothing further than to apologise for having written at such length, and I trust the subject will be considered a sufficient excuse for my having done so.

A. Fatal cord and line of fire.
B. B. Cords for protection.
C. Barrel of Gun.
D. Stock of Gun.



A. Fatal cord and line of fire.
B. Cords for protection.
C. Barrel of Gun.
D. Stock of Gun.
E. E. Sticks on which the Gun rests.
F. Stick raising the cords of protection.

The above diagrams show the proposed system of placing the gun, and also the manner in which the stated results may be obtained.

B. ROGERS.

Reward Certificate. *Dated 1st August* 1869.

District No. 1.

Tiger.	Description of beast.	1st January 1869.	When killed.	Ram Singh.	Name.	Brahmin.	Caste.	Cultivator.	Vocation.	Yes. Certificate Gratis.	If Govt. Shikaree.	Mundla.	Village.	Sharpore.	Thanna.	N. W. Provinces.	Province.	Hoosaene.	Name.	Head Constable, No. 3.	Vocation.	7th February.	Date.	Sharpore Police Office.	Place.	Ram Singh had a bullock tied up to entice the tiger, and it was killed; value Rs. 7-8. A. B., *Head Constable, Shapore Thanna.* Certificate regarding the above attached. A. B.
																										Forwarded. W. B., *Capt.*, *Depy. Supdt. of Police.*

BENARES,
The 22nd August 1869.

Return of Animals killed. *Dated 12th August* 1869

District No. 1.

Owner.			Description.		Where killed.			By what wild beast.	Remarks.
Name.	Caste.	Vocation.	Species.	Value.	Date.	Village.	District.	Province.	
Ram Singh.	Brahmin.	Cultivator.	Two bullocks.	Rs. 10 each.	10th August 1869.	Teka Dhana.	Sharpore.	N. W. P.	Panther.	Reported at the Thanna of Shapore by "Murro," headman of the Village of Sundla. A. B., *Head Constable, Shapore Police Station.*

Forwarded.
A. B., *Capt.*,
Depy. Supdt. of Police.

BENARES,
The 22nd August 1869.

GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

TREATY BETWEEN THE BRITISH GOVERNMENT AND THE MAHARAJA OF JEYPORE REGARDING THE LEASE OF THE JOINT PROPERTY IN SALT ON THE SAMBHUR LAKE.

I.

Treaty between the British Government and His Highness S. RAM SINGH, *Maharaja of Jeypore*, G. C. S. I., *his heirs and successors, executed on the one part by* MAJOR WILLIAM H. BEYNON, *Political Agent at the Court of Jeypore, under authority from* LIEUTENANT COLONEL RICHARD HARTE KEATINGE, C. S. I. *and* V. C., *Agent to the Governor General for the States of Rajpootana, in virtue of the full powers vested in him by His Excellency the Right Hon'ble* RICHARD SOUTHWELL BOURKE, EARL OF MAYO, VISCOUNT-MAYO OF MONYCROWER, BARON NAAS OF NAAS, K. P., G. M. S. I., P. C., &c., &c., *Viceroy and Governor General of India; and on the other part by Nawab* MAHOMED FAIZ ALI KHAN, *Bahadoor, in virtue of the full powers conferred on him by Maharaja* RAM SINGH *aforesaid.*

ARTICLE I.

Subject to the conditions contained in the following Agreement, the Government of Jeypore will lease to the British Government its right of manufacturing and of selling salt within the limits of the territory bordering on the Sambhur Lake, as hereinafter defined in Article IV, and of levying duties on salt produced within such limits.

ARTICLE II.

This lease shall continue in force until such time as the British Government desires to relinquish it, provided that the British Government shall give notice to the Government of Jeypore of its intention to terminate the arrangement two full years previous to the date on which it desires the lease to cease.

ARTICLE III.

To enable the British Government to carry on the manufacture and sale of salt at the Sambhur Lake, the Jeypore Government shall empower the British Government, and all Officers appointed by the British Government for such purposes, to enter and search, in case of suspicion, houses and all other places enclosed or otherwise within the limits hereinafter defined, and to arrest and punish with fine, imprisonment, confiscation of goods, or otherwise, any and all persons detected within such limits in the violation of any of the rules or regulations which may be laid down by the British Government in regard to the manufacture, sale, or removal of salt, or the prevention of unlicensed manufacture or smuggling.

ARTICLE IV.

The strip of territory bordering on the shores of the lake, including the town of Sambhur and twelve other hamlets, and comprehending the whole of the territory now subject to the joint jurisdiction of the States of Jeypore and Jodhpore, shall be demarcated, and the whole space enclosed by such line of demarcation, as well as such portions of the lake itself, or of its dry bed, as are now under the said joint jurisdiction shall be held to constitute the limits within which the British Government and its Officers are authorized to exercise the jurisdiction referred to in Article III.

ARTICLE V.

Within the said limits, and so far as such measures may be necessary for the protection or furtherance of the manufacture, sale, or removal of salt, the prevention of smuggling, and the enforcement of the rules laid down in accordance with Article III of this Agreement, the British Government, or the Officers by it empowered, shall be authorized to occupy land for building or other purposes, to construct roads, erect barriers, hedges or buildings, and to remove buildings or

other property. If any land paying land revenue to the Government of Jeypore be occupied under the authority of the British Government for any of the purposes aforesaid, the British Government shall pay to the Government of Jeypore an annual rent equal to the amount of such revenue. In every case in which anything involving injury to private property shall be done by the British Government or its Officers under this Article, one month's previous notice shall be given to the Government of Jeypore, and in all such cases proper compensation shall be paid by the British Government on account of such injury. In case of difference between the British Government or its Officers and the owner of such property as to the amount of the compensation, such amount shall be determined by arbitration. The erection of any buildings within the said limits shall not confer on the British Government any proprietary right in the land, which, on the termination of the lease, shall revert to the Government of Jeypore, with all buildings or materials left thereon by the British Government. No temples or places of religious worship shall be interfered with.

ARTICLE VI.

Under the authority of the Jeypore Government, the British Government shall constitute a Court, presided over by a competent Officer, who shall usually hold his sittings within the above-mentioned limits, for the trial and punishment, on conviction, of all persons charged with violation of the rules and regulations referred to in Article III, or offences connected therewith; and the British Government is authorized to cause the confinement of any such offenders sentenced to imprisonment, either within the aforesaid limits or within its own territories as may seem to it most fitting.

ARTICLE VII.

From and after the date of the commencement of the lease, the British Government will from time to time fix the price at which salt manufactured within the said limits, other than the salt to be delivered under the second clause of this Article, shall be offered for sale. The Jeypore Government shall be entitled to receive annually at the place of manufacture from the British Government, for the consumption of the Jeypore State, any quantity of salt which the Jeypore Government may demand, not exceeding one hundred and seventy-two thousand (172,000) British Indian maunds, paying for the same at the rate of nine (9) annas (British Currency) per maund. The Jeypore Government will be at liberty to sell such salt at any price that it may fix.

ARTICLE VIII.

Of the stocks of salt owned jointly by the Governments of Jeypore and Jodhpore, and existing within the said limits at the commencement of the lease, the share belonging to the Jeypore Government, being the half of the stocks above-mentioned, shall be transferred by the said Government to the British Government on the following terms:—In accordance with custom, the Government of Jeypore will transfer its share in five hundred and ten thousand (510,000) British Indian maunds of salt to the British Government free of cost. The price to be paid for the share of the Jeypore Government in the remainder of the said stocks shall be reckoned at six and a half annas ($6\frac{1}{2}$) per British Indian maund, and payment shall be made at this rate by the British Government to the Government of Jeypore, provided that the said payment of six and a half annas per maund to the Government of Jeypore shall only commence when salt in excess of eight hundred and twenty-five thousand (825,000) British Indian maunds is sold or exported by the British Government in any year, and then only on the share of such excess which belongs to the Government of Jeypore; and until the aggregate of such yearly excesses amounts to the full quantity of the stocks of salt transferred over and above the said five hundred and ten thousand British Indian maunds, the British Government shall not pay the royalty of 20 per cent. on the sale price of such excess, as provided in Article XII. In reckoning the said eight hundred and twenty-five thousand maunds, the amount of salt reserved for the consumption of the Jeypore State under Clause 2 of Article VII shall be included.

ARTICLE IX.

No tax, toll, transit duty, or due of any kind whatsoever, shall be levied by the Jeypore Government, or shall by it be permitted to be levied by any other

person, on any salt manufactured or sold by the British Government within the said limits, or while in transit through the Jeypore territory and covered by a British Pass *en route* to any place outside the Jeypore territory, provided that on all salt delivered under Article VII, or sold for consumption within the territory of Jeypore, the Government of that State will be at liberty to levy whatever tax it may please.

ARTICLE X.

Nothing in this Agreement shall be held to bar the sovereign jurisdiction of the Jeypore Government, within the aforesaid limits, in all matters, civil and criminal, not connected with the manufacture, sale or removal of salt, or the prevention of unlicensed manufacture or smuggling.

ARTICLE XI.

The Government of Jeypore shall be relieved of all expenses whatsoever connected with the manufacture, sale, and removal of salt, and the prevention of unlicensed manufacture or smuggling within the limits aforesaid ; and in consideration of the lease granted to it, the British Government agrees to pay to the Jeypore Government, in two half-yearly instalments, an annual rent of one hundred and twenty-five thousand (1,25,000) Rupees, British Currency, on account of the share of the Jeypore Government in the salt sold within the said limits, and one hundred and fifty thousand (1,50,000) Rupees, British Currency, in compensation for duties on salt now levied by the Jeypore Government, and surrendered under the present Agreement ; and the total sum of such annual rent, amounting to two hundred and seventy-five thousand (2,75,000) Rupees, British Currency, shall be paid without reference to the quantity of salt actually sold in, or exported from, the said limits.

ARTICLE XII.

If the amount of salt sold in, or exported from, the said limits by the British Government in any year shall exceed eight hundred and twenty-five thousand (825,000) British Indian maunds, the British Government shall pay to the Government of Jeypore on all such excess (subsequent to the exhaustion of the stock referred to in Article VIII) a royalty at the rate of 20 per cent. on the price per maund which shall have been fixed as the selling price under the first clause of Article VII. In the event of any doubts arising as to the amount of salt on which royalty is claimable in any year, the accounts rendered by the principal British Officer in charge at Sambhur shall be deemed conclusive evidence of the amounts actually sold or exported by the British Government within the periods to which they refer, provided that the Jeypore Government shall not be debarred from deputing one of its own Officers to keep a record of sales for its own satisfaction.

ARTICLE XIII.

The British Government agrees to deliver annually (7,000) seven thousand British Indian maunds of good salt, free of all charges, for the use of the Jeypore Durbar; such salt to be delivered at the place of manufacture to any Officer empowered by the Jeypore Government to receive it.

ARTICLE XIV.

The British Government shall have no claim on the land or other revenue, unconnected with salt, payable from the town of Samhhur, or other villages or lands included within the limits aforesaid.

ARTICLE XV.

The British Government shall not sell any salt outside the limits aforesaid within the Jeypore territory.

ARTICLE XVI.

If any person employed by the British Government, within the said limits, shall have absconded after commiting an offence, or if any person shall have absconded after committing a breach of the rules laid down under Article III, the Jeypore Government shall, on sufficient evidence of his criminality, make every effort to cause his arrest and surrender to the British authorities within the said limits, in case of his passing through, or taking refuge in, any part of the Jeypore territories.

ARTICLE XVII.

None of the conditions of this Agreement shall have effect until the British Government shall actually assume charge of the manufacture of salt within the said limits. The British Government may determine the date of so assuming charge, provided that such date shall be one of the dates following, *viz.*, the 1st November 1869, the 1st May or the 1st November 1870, or the 1st May 1871. If such charge be not assumed on or before the 1st May 1871, the conditions of this Agreement shall be null and void.

ARTICLE XVIII.

None of the conditions contained in this Agreement shall be in any way set aside or modified without the previous consent of both Governments; and should either party fail or neglect to adhere to these conditions, the other party shall cease to be bound by this Agreement.

(Signed) W. H. BEYNON,
Political Agent.

(Signed) NAWAB MAHOMED FAIZ ALI KHAN BAHADOOR.

Signed, Sealed and Exchanged at Simla, on the seventh day of August, in the year of our Lord one thousand eight hundred and sixty-nine.

(Signed) S. RAM SING.
,, MAYO.

This Treaty was ratified by His Excellency the Viceroy and Governor General of India, at Simla, on the seventh of August 1869.

(Signed) W. S. SETON-KARR,
Secy. to the Govt. of India, Foreign Dept

TREATY BETWEEN THE BRITISH GOVERNMENT AND THE MAHARAJA OF JODHPOOR REGARDING THE LEASE OF THE JOINT PROPERTY IN SALT ON THE SAMBHUR LAKE.

II.

Treaty between the British Government and His Highness Maharaja TUKHT SINGH, G. C. S. I., *of Jodhpoor, his heirs and successors, executed on the one part by Colonel* JOHN C. BROOKE, *Officiating Political Agent at the Court of Jodhpoor, under authority from Lieutenant-Colonel* RICHARD HARTE KEATINGE, C. S. I. *and* V. C., *Agent to the Governor General for the States of Rajpootana, in virtue of the full powers vested in him by His Excellency the Right Hon'ble* RICHARD SOUTHWELL BOURKE, EARL OF MAYO, VISCOUNT MAYO OF MONYCROWER, BARON NAAS OF NASSA, K. P., G. M. S. I., P. C., *&c., &c., Viceroy and Governor General of India, and on the other part by* JOSHEE HUNSRAJ, *Moosahib of Marwar, in virtue of the full powers conferred on him by Maharaja* TUKHT SINGH *aforesaid.*

ARTICLE I.

Subject to the conditions contained in the following Agreement, the Government of Jodhpoor will lease to the British Government its right of manufacturing and of selling salt within the limits of the territory bordering on the Sambhur Lake, as hereinafter defined in Article IV, and of levying duties on salt produced within such limits.

ARTICLE II.

This lease shall continue in force until such time as the British Government desires to relinquish it, provided that the British Government shall give notice to the Government of Jodhpoor of its intention to terminate the arrangement two full years previous to the date on which it desires the lease to cease.

ARTICLE III.

To enable the British Government to carry on the manufacture and sale of salt at the Sambhur Lake, the Jodhpore Government shall empower the British Government, and all Officers appointed by the British Government for such purposes, to enter and search, in case of suspicion, houses and all other places, enclosed or otherwise, within the limits hereafter defined, and to arrest

and punish with fine, imprisonment, confiscation of goods or otherwise, any and all persons detected within such limits in the violation of any of the rules or regulations which may be laid down by the British Government in regard to the manufacture, sale, or removal of salt, or the prevention of unlicensed manufacture or smuggling.

ARTICLE IV.

The strip of territory bordering on the lake, including the town of Sambhur and twelve other hamlets, and comprehending the whole of the territory now subject to the joint jurisdiction of the States of Jodhpoor and Jeypoor, shall be demarcated, and the whole space inclosed by such line of demarcation, as well as such portions of the lake itself, or of its dry bed, as are now under the said joint jurisdiction shall be held to constitute the limits within which the British Government and its Officers are authorized to exercise the jurisdiction referred to in Article III.

ARTICLE V.

Within the said limits, and so far as such measures may be necessary for the protection or furtherance of the manufacture, sale, or removal of salt, the prevention of smuggling, and the enforcement of the rules laid down in accordance with Article III of this agreement, the British Government, or the Officers by it empowered, shall be authorized to occupy land for building or other purposes, to construct roads, erect barriers, hedges, or buildings, and to remove buildings or other property.

If any land paying land revenue to the Government of Jodhpoor be occupied under the authority of the British Government for any of the purposes aforesaid, the British Government shall pay to the Government of Jodhpoor an annual rent equal to the amount of such revenue.

In every case in which anything involving injury to private property shall be done by the British Government or its Officers under this Article, one month's previous notice shall be given to the Government of Jodhpoor, and in all such cases proper compensation shall be paid by the British Government on account of such injury. In case of difference between the British Government or its Officers and the owner of such property as to the amount of the compensation, such amount shall be determined by arbitration.

The erection of any buildings within the said limits shall not confer on the British Government any proprietary right in the land, which, on the termination of the lease, shall revert to the Government of Jodhpoor, with all buildings or materials left thereon by the British Government.

No temples or places of religious worship shall be interfered with.

ARTICLE VI.

Under the authority of the Jodhpoor Government, the British Government shall constitute a Court, presided over by a competent Officer, who shall usually hold his sittings within the above-mentioned limits, for the trial and punishment, on conviction, of all persons charged with violations of the rules and regulations referred to in Article III, or offences connected therewith ; and the British Government is authorized to cause the confinement of any such offenders sentenced to imprisonment, either within the aforesaid limits or within its own territories, as may seem to it most fitting.

ARTICLE VII.

From and after the date of the commencement of the lease, the British Government will, from time to time, fix the price at which salt manufactured within the said limits, and intended for exportation beyond the limits of the Jodhpoor and Jeypoor States, shall be offered for sale.

ARTICLE VIII.

Of the stocks of salt owned jointly by the Governments of Jodhpoor and Jeypoor, and existing within the said limits at the commencement of the lease, the share belonging to the Jodhpoor Government, being the half of the stocks

above-mentioned, shall be transferred by the said Government to the British Government on the following terms :—

The Jodhpoor Government will transfer its share in five hundred and ten thousand (510,000) British Indian maunds of salt to the British Government free of cost. The price to be paid for the share of the Jodhpoor Government in the remainder of the said stocks shall be reckoned at six and a half annas ($6\frac{1}{2}$) per British Indian maund, and payment shall be made at this rate by the British Government to the Government of Jodhpoor, provided that the said payment of six and a half annas per maund to the Government of Jodhpoor shall only commence when salt in excess of eight hundred and twenty-five thousand (825,000) British Indian maunds is sold or exported by the British Government in any year, and then only on the share of such excess which belongs to the Government of Jodhpoor ; and until the aggregate of such yearly excesses amounts to the full quantity of the stocks of salt transferred, over and above the said five hundred and ten thousand (510,000) British Indian maunds, the British Government shall not pay the royalty of 20 per cent. on the sale price of such excess, as provided in Article XII.

ARTICLE IX.

No tax, toll, transit duty, or due of any kind whatsoever shall be levied by the Jodhpoor Government, or shall by it be permitted to be levied by any other person, on any salt manufactured or sold by the British Government within the said limits, or while in transit through the Jodhpoor territory, and covered by a British pass, *en route* to any place outside the Jodhpoor territory.

ARTICLE X.

Nothing in this agreement shall be held to bar the sovereign jurisdiction of the Jodhpoor Government, within the aforesaid limits, in all matters, civil and criminal, not connected with the manufacture, sale, or removal of salt, or the prevention of unlicensed manufacture or smuggling.

ARTICLE XI.

The Government of Jodhpoor shall be relieved of all expenses whatsoever connected with the manufacture, sale, and removal of salt, and the prevention of unlicensed manufacture or smuggling within the limits aforesaid ; and, in consideration of the lease granted to it, the British Government agrees to pay to the Jodhpoor Government, in two half-yearly instalments, an annual rent of one hundred and twenty-five thousand (1,25,000) Rupees, British Currency, on account of the share of the Jodhpoor Government in the salt sold within the said limits, and the total sum of such annual rent, amounting to one hundred and twenty-five thousand (1,25,000) Rupees, British Currency, shall be paid without reference to the quantity of salt actually sold in, or exported from, the said limits.

ARTICLE XII.

If the amount of salt sold in, or exported from, the said limits by the British Government in any year shall exceed eight hundred and twenty-five thousand (825,000) British Indian maunds, the British Government shall pay to the Government of Jodhpoor on all such excess (subsequent to the exhaustion of the stock referred to in Article VIII) a royalty at the rate of 20 per cent. on the price per maund, which shall have been fixed as the selling price under the first clause of Article VII.

In the event of any doubts arising as to the amount of salt on which royalty is claimable in any year, the accounts rendered by the principal British Officer in charge at Sambhur shall be deemed conclusive evidence of the amounts actually sold or exported by the British Government within the periods to which they refer: Provided that the Jodhpoor Government shall not be debarred from deputing one of its own Officers to keep a record of sales for its own satisfaction.

ARTICLE XIII.

The British Government agrees to deliver annually seven thousand (7,000) British Indian maunds of good salt, free of all charges, for the use of the Jodhpoor Durbar; such salt to be delivered at the place of manufacture to any Officer empowered by the Jodhpoor Government to receive it.

ARTICLE XIV.

The British Government shall have no claim on the land or other revenue, unconnected with salt, payable from the town of Sambhur or other villages or lands included within the limits aforesaid.

ARTICLE XV.

The British Government shall not sell salt within the Jodhpoor territory outside the limits of such jurisdiction as may be assigned to it by this or any other agreement.

ARTICLE XVI.

If any person employed by the British Government within the said limits shall have absconded after committing an offence, or if any person shall have absconded after committing a breach of the rules laid down under Article III, the Jodhpoor Government shall, on sufficient evidence of his criminality, make every effort to cause his arrest and surrender to the British authorities within the said limits, in case of his passing through, or taking refuge in, any part of the Jodhpoor territories.

ARTICLE XVII.

None of the conditions of this agreement shall have effect until the British Government shall actually assume charge of the manufacture of salt within the said limits.

The British Government may determine the date of so assuming charge, provided that if such charge be not assumed on or before the 1st May 1871, the conditions of this agreement shall be null and void.

ARTICLE XVIII.

None of the conditions contained in this agreement shall be in any way set aside or modified without the previous consent of both Governments, and should either party fail or neglect to adhere to these conditions, the other party shall cease to be bound by this agreement.

Signed, sealed, and exchanged at Jodhpoor this twenty-seventh day of January A. D. eighteen hundred and seventy, corresponding to the eleventh day of Maha Bud Sumvut nineteen hundred and twenty-six.

J. C. BROOKE, *Colonel*,
Offg. Political Agent, Marwar.

(Signed) JOSHEE HUNSRAJ. (Signed) MAYO.

This Treaty was ratified by His Excelleney the Viceroy and Governor General of India, at Fort William, on the fifteenth of February 1870.

(Signed) C. U. AITCHISON,
Offg. Secy. to the Govt. of India.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

MEASURES TAKEN FOR CARRYING OUT THE PUNJAB NORTHERN (STATE) RAILWAY.

No. 54 S, dated 15th February 1869.

From—LIEUT.-COLONEL H. DRUMMOND, R. E., *Under Secy. to the Govt. of the Punjab, in the P. W. Dept., Railway Branch,*

To—*The Secretary to the Government of India,* PUBLIC WORKS DEPT.

I am directed to forward, for the information of the Government of India, copies of correspondence as marginally noted, on the question of locating the Railway line from the River Ravee to Goojranwalla on the Grand Trunk Road, or parallel to, but independent of, that road.

Letter No. 51, dated 14th January 1869, from Superintending Engineer, Lahore Division, Northern (State) Railway, to Consulting Engineer, Punjab Government, with two estimates and sections.
No. 638, dated 22nd January 1869, from Consulting Engineer, Punjab Government, in reply to above.
No. 99 of 27th January 1869, from Superintending Engineer, Lahore Division, Northern (State) Railway, to Consulting Engineer, Punjab Government.
No. 818 of 26th January 1869, from Consulting Engineer, Punjab Government, to Superintending Engineer, Lahore Division, Punjab Northern (State) Railway.
Note by Consulting Engineer, Punjab Government, on Superintending Engineer's No. 51, and accompaniments.
Remarks by Lieutenant Governor on above Note.
Memorandum by Colonel Taylor on above, No. 51.
No. 104 of 30th January 1869, from Superintending Engineer, Lahore Division, Northern (State) Railway, to Consulting Engineer, Punjab Government.
No. 1248 of 9th February 1869, from Consulting Engineer, to Chief Engineer, State Railway.
No. — of 13th February 1869, from Chief Engineer, in reply to No. 1248.

2. The Lieutenant Governor recommends that the line of Railway from the point where it will cross the Trunk Road on the right bank of the Ravee be located parallel to, and independent of, the road, and that early sanction of the Supreme Government may be accorded to Estimate No. 2, which accompanies the Superintending Engineer Mr. Grant's letter No. 51, in order that a commencement may be made of the work.

3. The above estimate will be considered merely temporary and provisional, pending the submission hereafter of complete estimates by the Chief Engineer, Mr. Lee Smith.

No. 51, dated 14th January 1869.

From—A. GRANT, ESQ., *Supdg. Engr., Lahore Division, Punjab Northern (State) Railway,*

To—*The Consulting Engineer to the Government of the Punjab, Railway Dept.*

In conformity with your instructions, a survey and examination of the Trunk Road has been made between Lahore and Goojranwalla with a view to ascertaining the advantage, or otherwise, of the occupation of a portion of its width in the construction of the Punjab Northern Railway.

This work has been done by Messrs. Glin and Kelsey, Executive Engineers, and commences from the point at which the centre line of the proposed Ravee bridge intersects the Trunk Road, terminating at Goojranwalla, a distance of 36 miles, 1,600 feet.

These Engineers have run a traverse, and taken levels, with cross-sections, throughout this length, picking up in their progress complete information as to water-ways, &c., &c. The results of their examination I now beg to submit in the accompanying comparative estimates,—one of the cost of the Railway earth-work on that distance, when availing itself of a maximum width of 12 feet from the Trunk Road; and the other of the same, when Railway is laid down independently of road, but parallel to it.

The expenditure on bridges would be the same in either case, and has not been therefore noticed in the estimates.

Along with these estimates I forward two tracings, showing, respectively, sections of the Railway embankment when connected with road, and when clear of it. The traverse plan of Trunk Road and its longitudinal section throughout, I have not thought it necessary to send in. They, however, exist in my office for reference when required.

In connection with Estimate No. 1 (Railway in conjunction with Trunk Road), it is necessary to observe—

1*st*. *Flood-level.*—That, inasmuch as it has been ascertained that the flood-level of 1866, on the distance surveyed, was throughout the same as that of surface of Trunk Road, the level of Railway embankment (or formation) has been assumed as 2 feet 3 inches higher than that of present road surface, in order to keep bottom of girders at water-way openings at least 2 feet above the highest known flood level. This elevation over floods is not more than is strictly necessary, because, although the height of ascertained flood level in 1866 may have been to some extent due to the insufficient provision of water-way on Trunk Road, there is no ground for supposing that the local rain-fall of that year was entirely exceptional, and that it may not be in future considerably exceeded.

2*nd*. *Earth-work.*—That the rate for earth-work here assumed is Re. 1 per 1,000 feet cube higher than that taken for No. 2 Estimate (independent line). This augmentation is due to the fact that the excavations for banks must be made throughout from one side of the line only, so that the work will be done either from existing cuttings, or from new surface beyond with double lead.

3*rd*. *Fencing.*—The *fence* dividing off road from Railway will be fixed at the inner edge of berm on that side, so that there will be thus rendered useless for cart traffic 4 feet or so of the metalling alongside of same. It has thus been necessary to provide in estimate for a corresponding increase of 4 feet of metalling on the other side of Trunk Road, with a widening of the right hand side berm to the same extent.

4*th*. *Removal of road metal.*—Owing to the stacking of kunkur for road metalling on side cess, it has been necessary to estimate for its removal from same on left side.

5*th*. *Serais, Police Stations, &c.*—As the Serais, Police Stations, Road Inspectors' Bungalows, and large village of Kamokee, are all on the left or west side of Trunk Road, and would be therefore cut off from it by Railway, there has been provision made for raising the road to rail level at these places with proper inclines either way.

It should, at the same time, be noted that the Railway station buildings themselves must be all either on this, the left side of the line, or if not so placed, separated from it by the entire width of Trunk Road, &c. At all such stations when not placed near one of the crossings above provided for, there would necessarily be therefore a similar expense in raising Trunk Road, so as to permit the traffic from same to reach the Railway stations. This outlay would, with the full width required, be equal in each case to at least Rs. 1,500. As the number and position of these stations have not yet been determined, this item has been omitted from the estimate. It is further to be considered as a matter not taken into account in the estimate, that wire or other fence of an ordinary description will not be in any way a sufficient protection to the Railway, as the bullock cart-traffic on the Trunk Road would very soon destroy the whole of it; a post and rail fence of unusual strength would be indispensable, and at a cost of something like Rs. 25,000 for the distance in question in excess over an ordinary wire fence.

Considerable injury during rainy season (or expense in preventing it) would be caused to road metalling by the wash of the soil from Railway slopes.

With due allowance for extra earth-work in independent line, as also for purchase of land class A, required for same (Estimate No. 2), you will observe that, without including items of road crossings to Railway stations, or extra cost of fencing which do not figure in estimate, there is nevertheless an actual balance in expenditure on construction against Trunk Road occupation line of Rs. 38,544.

In the comparison so made, all considerations of expediency and advantage, or the opposite, in so far as the Trunk Road itself is concerned, have been waived, and the attention limited exclusively to question of relative cost between the two lines.

While the decision of Government is expected as to the one line or the other, Messrs. Glinn, Kelsey, and Storey are, as you are already aware, now occupied in making out, with the necessary survey of stream crossings, &c., the independent line, at a distance of about 1,500 feet from the Trunk Road on lower side; so that, on the adoption of either alternative, no time need be lost in putting the work of throwing up the embankments immediately in hand.

It may be here as well to state that the calculations on which No. 2 Estimate has been prepared are based upon the ground levels taken in survey of Trunk Road. As the surface alongside Trunk Road is practically the same over the entire distance, it can make little difference either way so far where the site of embankment is taken.

No. 63 S, dated 22nd January 1869.

From—Lieut.-Colonel H. Drummond, R. E., *Consg. Engr. to the Govt. of the Punjab, Railway Dept.*,

To—*The Superintending Engineer, Lahore Division, Punjab Northern (State) Railway.*

With reference to your letter No. 51, dated 14th instant, I have the honor to enquire whether the flood level of 1866 remained the same as that of the surface of the Trunk Road after the latter was breached. Also whether, with the existing water-ways in the Trunk Road between the River Ravee and Goojranwalla, there is any probability that such an exceptional flood as that of 1866 would rise to the level of the surface of the road.

No. 99, dated 27th January 1869.

From—A. Grant, Esq., *Supdg. Engr., Lahore Division, Punjab Northern (State) Railway,*

To—*The Consulting Engineer to the Government of Punjab, Railway Dept.*

In reply to your No. 63 S of 1869, I have the honor to state that flood level of 1866 was considerably higher on the upper or east side of the Trunk Road than on the lower or west side, and that this level, due to the obstruction of raised causeway, was lowered, when the dammed up water found escape through the breaches it made. Further, that it is not at all probable that a flood equal in character to that of 1866 would now rise as then to road surface.

At the same time, having regard both to the proximity of the Trunk Road to the hills, and to the fact that the experience of its 20 years' existence does not afford exhaustive evidence as to all the possibilities of sudden rushes of water, I could beg to state that I do not consider as at all unlikely a repetition of the same, or similar facts as to flood height on the length in question.

In connection with the preceding, and my letter No. 51, I may here observe that my assumption of a formation level for Railway of 2 feet over highest ascertained flood is based on the adoption for Railway of the same extensive waterway as that now provided for on Trunk Road. This water-way between Ravee crossing and Goojranwalla now amounts to 22,322 feet. Should, however, a less amount of passage be given for the Railway, it will probably be then found advisable to still further raise formation level.

No. 81 S, dated 26th January 1869.

From—LIEUT.-COLONEL H. DRUMMOND, R. E., *Consg. Engr. to the Govt. of the Punjab, Railway Dept.,*

To—*The Superintending Engineer, Lahore Division, Punjab Northern (State) Railway.*

I have the honor to make the following remarks on the estimates which accompanied your letter No. 51, dated 14th instant.

2. Two heavy items in Estimate No. 1 are—Rs. 15,111 for earth-work in widening road 4 feet, and Rs. 75,555 for road metalling on extra 4 feet width. If the sum of these two items, amounting to Rs. 90,666, can be eliminated from Estimate No. I, its total will be reduced to Rs. 1,11,662, which is Rs. 52,122 less than the total of Estimate No. 2. And it seems to me that both the heavy items referred to may be saved by simply putting the fence at the toe of Railway embankment instead of at the edge of the metalled portion of the road.

3. If 3 feet is not considered to be a sufficient distance from the metalled road to Railway fence, it might be increased to 4 feet (proposed to be effected by you by the removal of 4 feet of road metalling, and adding it to the other side, so as not to reduce the original width of road), and there would still be a considerable saving in earth-work.

For instance, thus: assume that only 8 feet of the road bank is occupied by the Railway—assume 6 feet as the average height of the Railway embankment, that its width at formation level is 20 feet, and that its slopes are 3 to 1, the area of section is $38 \times 6 = 228$ square feet.

4. As the side slopes of road embankment are 5 to 1, and the average height 5 feet, supposing that the Railway were to occupy only 8 feet of the road embankment, the saving of earth-work in section would be—$(8 \times 4) + (\frac{20 \times 2}{2}) + (\frac{12 \times 4}{2}) = 96$ square feet. So that if the Railway were put partly on the road, the section of earth-work to be executed would be 228—96 = 132, instead of 228.

5. Agreeing with you that an ordinary wire fence will not be sufficient protection between the road and rail, and that probably an extra expense of Rs. 25,000 would have to be incurred to strengthen the fence, and probably to provide for drainage between the road and the rail, I still think there might be a saving effected of from Rs. 20,000 to Rs. 25,000 by locating the rail on the road instead of independent from it.

6. A printed copy of your letter and estimates, together with your two sections in original, are herewith put up, and an early reply is requested.

Note by LIEUT.-COLONEL H. DRUMMOND, R. E., *Consulting Engineer to the Government of the Punjab, Railway Department.*

Letter No. 51, with two estimates and sections, from Mr. Grant, Superintending Engineer, Lahore Division, Punjab Northern Railway, also two letters from Consulting Engineer to that Officer, are herewith put up for His Honor's perusal.

If the Lieutenant Governor approves, Colonel Taylor may be asked to read these papers and record remarks. It will be observed that the question is treated merely as one of cost.

It is certain that there will be serious inconvenience to the road traffic while the Railway is *being constructed* on the road, and, after construction, constant risk of accident both on the road and the rail.

There can, I think, be no doubt that the rail on the road cannot possibly be made so perfect a scheme as the rail independent of the road, and I do not think therefore that, for the sake of an utmost possible saving of Rs. 25,000, the completeness in themselves of both road and rail should be marred.

Remarks by the Hon'ble the Lieutenant Governor, Punjab.

I quite concur in the foregoing remarks, but return the papers for transmission to Colonel Taylor, lest Under Secretary should have any further remarks to make when sending them to him.

Memo. by COLONEL A. TAYLOR, C. B., R. E., *on Mr. Grant's No.* 51.

The width of the metal on the part of the Trunk Road in question is for 13 miles, 12 feet, and for 23 miles and 1,600 feet, 16 feet.

The 16 feet width is only used where the material of which the embankment is formed is so deliquescent that a less width cannot be prudently used.

If anything be taken from off the metal on one side, it must, therefore, be added on to the other side as proposed by Mr. Grant.

The width of the earthen berm on the side on which it is proposed to place the Railway is everywhere 12 feet.

The wash from the Railway embankment could not be allowed to pass over the metal. An earthen drain at the foot of the Railway embankment is absolutely necessary, with masonry cross-drains at intervals, similar to what have been found to be necessary in all long cuttings throughout the line of road.

Again, this drain could not be placed close to the metal. A berm of 4 feet seems quite essential, and the earthen drain could not be less than 3 feet wide at top. Out of the present 12 feet of berm, 7 feet would be thus occupied, leaving 5 feet for the Railway.

The extra earth-work required would thus be a little more than is provided for in Mr. Grant's Estimate No. 1.

The item of Rs. 75,556 in that estimate might be omitted, but 360 cross-drains of masonry would have to be provided to discharge the water from the central earthen drain, and each would cost about Rs. 330, giving a total for these drains of about Rs. 1,18,900. (This allows ten cross-drains per mile, which is what experience has shown to be required in long cuttings when all external drainage has been thoroughly excluded.)

When Mr. Grant's Estimate No. 1 is amended in respect to the points above referred to, and the saving on metalling is set off against the extra cost of the cross-drains, its total will rise from Rs. 2,20,028 to Rs. 2,45,673-1; and if more of the berm be taken up, and the metal be moved, the cost will be greater still.

The remaining items in that estimate do not seem to me to be over-stated.

I certainly did not anticipate that no saving in construction would result from occupying part of the Trunk Road, but it seems beyond question that such must be the result.

In the interest both of the road and of the Railway, it is clearly proper for the Railway to be entirely separate.

No. 104, dated 30th January 1869.

From—A. GRANT, ESQ., *Supdg. Engr., Lahore Division, Punjab Northern (State) Railway,*

To—*The Consulting Engineer to the Government of the Punjab, Railway Department.*

I beg to acknowledge receipt of your No. 81 S of 1869, and have the honor to observe that the insufficiency of the information given on section No. 2 (Railway bank in connection with Trunk Road) as submitted by me, appears to have caused some little misapprehension.

This section shows the *average* difference in height between respective surfaces of road and Railway embankments, so that the dimension of 3 feet figured thereon between toe of slope to Railway bank, and fence dividing road from rail is also an *average*, and will vary with the relative heights of these surfaces; the difference in height will be frequently greater, chiefly where road level is lower, but also in some cases where Railway formation is higher than the average here shown, and consequently by the spreading of the base of embankment, the 3 feet average space, indicated between fence and toe to slope, will often diminish or disappear altogether.

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It follows that, if no objection were made to giving this metalled width, and with it the dividing fence also, a wavy and irregular outline, due to both of them following closely the sinuosities of tail of slope, an important economy might be effected in the two items referred in para. 2 of yours under reply, and the two estimates be thus brought, after provision for extra expenditure on fence, to something like a parity in amount.

As it is, however, probable that this objection would be considered serious to the permanent efficiency of Trunk Road, I think that so long as the proposal stands to taking 12 *feet* from it for Railway, the estimated increase to its metalled width, and to east side berm, cannot be well dispensed with.

On the other hand, if, as you suggest in your para. 4, the maximum width to be thus appropriated for Railway were reduced to 8 *feet*, a very considerable alteration in Estimate No. 1 would easily result. Items Nos. 2 and 8 (*vide* estimate), amounting to Rs. 90,666, would be altogether eliminated, while the value of earth-work (No. 1 item) would be increased (cubic feet 2,694,000, at Rs. 5 per 1,000) by Rs. 13,470, giving a total advantage to this estimate of Rs. 77,196, and so, after deduction of Rs. 25,000 for extra fencing, &c., the relative amounts of two estimates would stand thus:—

	Rs.
Trunk Road, 8 feet occupation	1,50,132
Independent line	1,63,784

being Rs. 13,652 in favor of the former, or nearly, on the distance under question, Rs. 379 per mile.

P. S.—As you may again wish to refer to them, I beg to re-enclose tracings of sections Nos. 1 and 2.

No. 124 S, dated 9th February 1869.

From—LIEUT.-COLONEL H. DRUMMOND, R. E., *Consg. Engr. to the Govt. of Punjab, Railway Dept.*,

To—*The Chief Engineer, Punjab Northern (State) Railway.*

I have the honor to forward for your information printed copies of papers as marginally noted, and, with reference thereto, to request that you will be so good as to favor me, at the earliest possible date, with an expression of your opinion on the subject of locating the Punjab Northern (State) Railway on the Trunk Road from a point near the right bank of the River Ravee to Goojranwalla, or on a line parallel to, but independent of, the Trunk Road.

Letter No. 51, dated 14th January 1869, from Superintending Engineer, Lahore Division, Punjab Northern (State) Railway, to Consulting Engineer, Punjab Government, with two sections in original.
No. 63 S, dated 22nd January 1869, from Consulting Engineer, to Superintending Engineer, in reply to above.
No. 99, dated 27th January 1869, from Superintending Engineer, to Consulting Engineer, Punjab Government.
Note by Consulting Engineer on Superintending Engineer's No. 51.
Remarks by Lieutenant Governor on above Note.
Memorandum by Colonel Taylor on Superintending Engineer's letter No. 51.
No. 104, dated 30th January 1869, from Superintending Engineer, Lahore Division, Punjab Northern (State) Railway, to Consulting Engineer.

The return of the original sections accompanying Mr. Grant's No. 51 of 14th January 1869 is requested with reply.

Dated 13th February 1869.

From—H. LEE SMITH, ESQ., *Chief Engineer, Punjab Northern (State) Railway,*

To—*The Consulting Engineer to the Government of Punjab, Railway Dept.*

In reply to your No. 124 S of 1869, I have the honor to state that I no longer consider the question of locating the Punjab Northern Railway on the Trunk Road up to Goojranwalla as one which is worthy of serious consideration.

At the time when I called the attention of Government to the advisability of so utilizing a portion of the road, I was under the impression that its surface throughout, at least the greater part of its length, was so far above level of floods as to be at once fit for receiving the permanent way, but the sections recently taken have shown this to be an erroneous idea.

The formation would require to be raised in so many places that the slope would encroach more seriously upon the metalled surface than I could recommend, or Government be likely to allow, and as the comparative estimates prove that the saving in cost would be very trifling, whilst the efficiency of the road would be thus to a considerable extent marred, I think all idea of interference with it should be abandoned, and a separate embankment thrown up for the Railway.

P. S.—I beg to return tracings of sections as required.

No. 81 S, dated 2nd March 1869.

From—LIEUT.-COLONEL H. DRUMMOND, R. E., *Under Secy. to the Govt. of Punjab, in the P. W. Dept., Railway Branch,*

To—*The Secretary to the Government of India*, PUBLIC WORKS DEPT.

Copy of the following, and of Mr. Lee Smith's letter to which it is a reply, forwarded for the information of the Government of India, with the remark that as the matter is urgent, and there appears to be no room for doubt as to the course to be followed, the Lieutenant Governor trusts the action which has been taken will be approved of by the Government of India.

No. 199 S, dated 1st March 1869.

From—LIEUT.-COLONEL H. DRUMMOND, R. E., *Consg. Engr. to the Govt. of Punjab, Railway Dept.*,

To—*The Chief Engineer, Punjab Northern (State) Railway.*

I have the honor to acknowledge the receipt of your letter No. 23, dated 25th ultimo, on the subject of the flood levels between Lahore and Goojranwalla, and in reply to convey the approval of the Lieutenant Governor to your getting out as speedily as possible the sections, land-plans and earth-work quantities of the line as far as Goojranwalla in the manner proposed in your letter and for the reasons given therein.

No. 23, dated 25th February 1869.

From—H. LEE SMITH, ESQ., *Chief Engineer, Punjab Northern (State) Railway,*

To—*The Consulting Engineer to the Government of Punjab, Railway Dept.*

I have gone into the matter of flood levels all along the road thus far very carefully, and have come to the conclusion that we shall be perfectly safe if we keep our formation 6 inches above what we are told was flood level in 1866 before the present immense water-way was given. In all the smaller openings, we should thus have the bottom of girders one foot clear above these floods, and for the one or two more important, as the Bagh Butcha, I would give a rise of two feet. I am thoroughly satisfied that this is the right thing to do. I do not consider there is *any chance* in the next hundred years of the water again reaching the level, only due in 1866 to its being bunded up. And if it ever did, we should then still have six inches of earth-work and two feet of ballast, in all 2′ 6″ to be topped before it could breach the embankment. If you will agree to this view of matters, I will have the section, land-plans and earth-work quantities in before many days for Government sanction, and we can then look forward to getting the banks all thrown up as far as Goojranwalla before the rains commence. During the rains a careful observation of all the water-ways will be made by the staff on the ground, and if that anywhere, after all, shows the advisability of raising girders or banks higher, either locally or generally, there will then be plenty of time to do it before the bridge piles are in and iron-work is fixed. I am exceedingly anxious to have your earliest possible reply, as upon the settlement of these questions depends my being able to put the work immediately in hand in time to save this season.

No. 147 S, dated 10th April 1869.

From—LIEUT.-COLONEL H. DRUMMOND, R. E., *Joint-Secy. to the Govt. of Punjab, in the P. W. Dept., Railway Branch,*

To—*The Secretary to the Government of India,* PUBLIC WORKS DEPT.

I am directed to request the favor of an early reply to this Office No. 54 S, dated 15th February 1869. Sections, land-plans, and everything necessary for the immediate commencement of the work of the Railway from Lahore to Goojranwalla have been carefully prepared, so that there need be no unnecessary delay on the receipt of the orders of Government.

2. Independent of the reasons given in the papers forwarded with the letter above quoted, the Lieutenant Governor feels very strongly that the traffic on the road will be seriously affected by a Railway laid on the same bank, in this way that accidents on the road will be of frequent occurrence. A strong fence may protect the traffic on the rail, but the Lieutenant Governor thinks it cannot be expected that, under a combination of road and rail on the same embankment, the traffic on the road can be carried on in security.

No. 545 R, dated 12th May 1869.

From—COLONEL R. STRACHEY, R. E., *Offg. Secy. to the Govt. of India,* PUBLIC WORKS DEPT.,

To—*The Joint-Secy. to the Govt. of Punjab, in the P. W. Dept., Railway Branch.*

I am directed to acknowledge the letters noted in the margin, submitting certain questions relative to the mode of construction of the Punjab Northern (State) Railway, and in reply to refer you to my separate letter No. 544 R of this date, on the general principles to be adopted in the construction of the Railway, and further to convey to you the following observations on the points that have been specially brought forward in the letters referred to.

No. 54 S, dated 15th February 1869.
„ 81 S, „ 2nd March „
„ 147 S, „ 10th April „

2. His Excellency in Council, holding the general views as to the propriety of occupying the Trunk Road, if it be clearly shown to be likely to lead to important economy, which are stated in para. 12 of my separate letter already referred to, is not satisfied that the proposals that have now been submitted to the Government of India have been framed with that careful regard to the obligation to enforce economy which has been inculcated in that despatch, and thinks that they require re-consideration. With this object the following remarks are offered for the attention of the Engineers.

3. The earth-work estimates submitted purport to show that the utmost possible saving on the first 36 miles of the line by appropriating a portion of the surface of the road would be Rs. 25,000, a sum of small moment in view of the inconvenience likely to result to both road and rail traffic, but especially so to that of the road. In fact, the Chief Engineer, Mr. Lee Smith, no longer considers the question worthy of serious consideration, as the levels taken seem to him to have shown the necessity of making the Railway formation level 2′·3″ higher than the surface of the road. This height is proposed (according to the enclosures of the first letter under reply) so as to give 2 feet clear above flood level below the bottom of girders in water-way openings; but from the second letter it would seem that, in the interval that had elapsed, this clearance had been considered excessive and reduced to one foot, except in the case of the one or two more important openings. If this latter letter be rightly understood, the estimates should be modified, though the comparison would not be affected.

4. The estimate of the project for part occupation of the Trunk Road might, however, be reduced summarily by Rs. 75,555 (more than one-third its amount) by striking out the item "road metalling on extra 4 feet width." The manner of adding to the road embankment on *both* sides appears to be the sole reason for disturbing the metalling, but if the 4 feet in width proposed to be added on the east of the road embankment, together with the 4 feet on the east of the additional bank to carry the rails, were transposed to the west side, not a foot more of earth-work would be required, and 4 feet more of road surface would be left untouched, so that there would be no need to trench on the existing metalling. But even this reduction is not all that

appears fairly practicable. The existing breadth of metal being 16 feet, it would, if reduced by 4 feet, be still 12 feet wide, which is, in the opinion of the Government of India, more than would be essential after the fast traffic on the road had ceased. Therefore no such arrangement as is proposed for widening the road embankment on this account seems at all necessary.

5. In the next place, it is essential that the necessity for a 20-feet formation width for a single line of rail should be clearly established. With transverse sleepers, a width of 18 feet would apparently suffice, and with either longitudinal or pot sleepers a further reduction of 3 to 4 feet in the width, not only of the formation but of the ballasting, would be quite feasible. The effect of such charges on the estimates would have to be considered, but both estimates would be affected much the same.

6. But the question of appropriating a portion of the surface of the Trunk Road is not limited to the section south of Goojranwalla, and should not be disposed of without taking into consideration the probable saving which would result from occupying a part of the road to the north of Goojranwallah. The saving over the longer distance will obviously be more worthy of consideration.

7. Further, it is stated that no saving would be effected in bridging by adopting the Trunk Road surface. This can hardly be the case, unless the side slopes of the water-way openings are not to be rivetted, or protected in any way.

8. Also the reason for putting the embankment for the rails on the west or down-stream side of the present road, if to be attached to it, is not understood. The road, if too low, would be flooded in case of heavy inundation, whereas, if placed on the up-side, the higher embankment would protect the road.

9. If, as seems to happen, in some places the road embankment causes accumulation of flood water on its northern or upper side, then it would seem to be a question whether the Railway formation could not, in some parts at all events, be placed on the lower or west side, but at a lower level than the road surface, and still be free from risk of flood. Moreover, it seems impossible to ground any conclusions on a general average assumed surface level of the rail formation fixed in relation to the road surface. What is needed is the actual results derived from the adjustment of the levels of the rails (fixed with relation to the actual levels of floods and the road embankment) in such a way as to give a minimum of outlay. There is nothing to show that such a solution of the question has been obtained.

10. It might also usefully be suggested to the Engineers that consideration should be given to the practicability of passing some of the shallow drainage lines which occur between the Ravee and the Chenab by means of metalled gaps, such as are employed on the Trunk Road. Some additional precautions might be needed, but probably a large saving of expense might be secured. Such an arrangement would lead to modifications of the levels of the formation surface.

11. It is presumed that the plans and sections of the Grand Trunk Road, and the information already collected by the Railway staff, will at once give sufficient data for ascertaining what can be made of it. When a sketch project has thus been prepared, and an approximate estimate, it is suggested that the Chief Engineer, accompanied, if thought desirable, by the Consulting Engineer, and bringing with him any expression of the views of the Hon'ble the Lieutenant Governor which he wished to record on the subject, might be directed to proceed to Simla, when final orders could conveniently and expeditiously be issued.

12. An estimate should also be at once got out for the line from the Lahore station to the Ravee, and for the bridge over that river, so as to admit of work being begun as early as possible.

13. Proposals for the distribution of the Engineering Establishments can perhaps hardly be made in a complete form until some decision is come to as to the method of dealing with the formation of the Railway road. But whenever the Lieutenant Governor feels himself to be in a position to dispose of this subject, either as regards the general prosecution of the works, or in relation to any special work, such as the larger bridges, the Government of India will be prepared to take up the matter which is clearly of much importance for the early commencement of active operations.

No. 544 R, dated 12th May 1869.

From—COLONEL R. STRACHEY, R. E., *Offg. Secy. to the Govt. of India*, P. W. DEPT.,
To—*The Joint Secy. to the Govt. of Punjab, in the P. W. Dept., Railway Branch.*

In continuaton of former correspondence on the subject of the Punjab Northern (State) Railway, I am directed to inform you that His Excellency the Governor General in Council has recently again had under consideration the numerous important questions that have from time to time arisen in connexion with the measures to be taken for commencing active operations on this Railway, and I am to state, for the information of the Hon'ble the Lieutenant Governor of the Punjab, the conclusions that have been adopted on some of these points by His Excellency in Council.

2. A re-perusal of the papers that have already been before the Government of India shows that the outlay which has hitherto been spoken of as likely to be incurred on this Railway will not be less than £20,000, and may even amount to as much as £25,000 per mile, or even more. The Governor General in Council directs me to observe that, having regard to the general character of the projected line, and to the financial considerations which its construction involves, any such outlay must be regarded as quite out of the question, and that the works must be so designed as to reduce the expenditure to a sum very much below that above named. The whole amount available for the extension of Railways in India, whether viewed with reference to the capital that can be obtained, or to the sum that can be provided from the ordinary revenues to discharge the interest on such capital, is practically limited, while the demands for other lines of Railway in other parts of the country are most urgent. To permit any such outlay as has above been spoken of would virtually arrest the commencement of other lines but little, if at all, less important than that now under consideration. Further, having regard to the probable small traffic on this Railway, for many years to come at all events, the permanent burden on account of interest on a very costly line would be extremely onerous. Lastly, and this consideration has great weight with the Government of India, a high rate of outlay indicates extremely heavy works, and a corresponding long period occupied in construction.

3. On the whole, the Governor General in Council has no hesitation in adopting the conclusion that this Railway should be designed and carried out, so as to ensure the smallest expenditure that will provide a thoroughly permanent and useful iron road that can be traversed by the ordinary locomotive and wagon stock in use on the Punjab and East Indian Railways at a low speed.

4. The Government of India is satisfied that, by strictly limiting the works and outlay to what is absolutely necessary for a single line, by restricting the gradients to what may be regarded as the steepest that can be worked with ordinary locomotives and a small train, and arranging everything for low speeds, the cost of this Railway may be very much reduced below the sum beforenamed, and be brought to approximate to £10,000 per mile, anything in excess of which the Government of India regards as so objectionable as to be almost prohibitory.

5. The principle to be followed should be to commence the line on the most economical scale possible, and to look to improvements being carried out by degrees in the future, as the traffic is developed and an amelioration of gradients and addition to the conveniences first provided are justified by increased returns.

6. For short distances gradients even as steep as 1 in 30 might, it is believed, be accepted if indicated to be desirable in the cause of economy, though it is hoped that anything so bad as this will not be called for, or be quite exceptional. In like manner, accepting a limit of speed of 15 miles an hour, or for the difficult parts of the line even 10 miles an hour, curves which would be impossible on a high speed line may be permitted without objection. The keeping up of a few extra locomotives to meet emergencies would with such arrangements probably be expedient, but the cost of these

will not be worth considering by the side of the large reduction in the mileage cost over the whole length of the line that may be reckoned upon from the adoption of these principles.

7. The necessity for providing any station accommodation at all, excepting at the chief towns or cantonments, may be doubted. The buildings provided should at the outset be strictly limited to what is essential for the protection of the engines and vehicles, goods requiring cover, and the persons employed for the working of the line; and everything should be built in the most economical manner possible, and the accommodation allowed be on the most frugal scale. Raised platforms should be given up, and the system universally adopted on the Continent of Europe accepted. The traffic might be worked by the Station Masters at the chief stations, supplemented by the guards, so that all minor booking offices would be suppressed.

8. I have further been instructed to observe that the recent decision of the Government to maintain Jhelum as a Military station, removes all doubt as to the direction of the main line at that point, Jhelum will, therefore, be regarded as an obligatory point on the main line, and the mode of dealing with the salt traffic must be separately considered on its own merits.

9. Next, His Excellency in Council has no difficulty in determining that the line of the Grand Trunk Road shall be generally followed so far as may be necessary to admit of the great Railway bridges being made available for the ordinary traffic on that road. The Railway bridge road-ways should be so arranged as to be rendered suitable for the passage of carts, &c., separate roadways not being provided. This will lead to a very large economy, even if some slight diverson of the road be demanded in order to obtain suitable sites for the bridges, and, under the actual conditions of the traffic, will certainly be all that is essential. The bridge designs will be prepared accordingly.

10. It must be left to the Engineers to consider whether this plan can be satisfactorily applied to any of the minor streams or drainage lins if any such still remain unbridged on the Trunk Road.

11. Again, it is observed that the Government of the Punjab is opposed to the occupation of any part of the Grand Trunk Road by the Railway, and recommends that the line shall be carried alongside of, but quite separate from, the road for the first 36 miles from the Ravee, beyond which no conclusions as to the direction had been come to when the last reports were submitted.

12. The Governor General in Council, after carefully considering all that has been said on this subject, has no difficulty in arriving at the conclusion that every possible means of effecting any important reduction of the cost, and the necessary labour of construction, which might be shown to be made possible by occupying the Grand Trunk Road embankment and formation surface, should be accepted throughout the whole length of the line both to Jhelum and beyond it; and this general decision should not be again re-opened. The question whether or not any such saving can be effected by occupying the road, as will make it desirable to do so, is one of detail which can only be decided on a careful examination of the facts, and which the Government of India does not desire to prejudge.

13. The Governor General in Council directs me to add that these remarks will no doubt fully convey to the Hon'ble the Lieutenant Governor of the Punjab the general views of the Government of India relative to this Railway, and that both His Honour and the Engineers employed under his orders will have no difficulty in applying the spirit of these remarks to all matters of construction that may arise and call for determination. No further detailed observations, therefore, seem necessary on such subjects.

14. It will readily be understood by His Honour the Lieutenant Governor that, among the reasons which most imperatively call for the strictest economy in construction wherever it is possible, the chief is the very heavy obligatory expenditure which is rendered unavoidable by the physical difficulties of the country to be traversed. The bridges over the four great rivers—the Ravee

Chenab, Jhelum and Indus—which will be required to complete the communication to Peshawur in a solid manner, are, as the Government of India is informed, likely to cost something like one and a half million sterling. The difficulties of the country beyond the Jhelum are supposed to be such as have probably never been before encountered by Railway Engineers, or at least to be equal to anything of the kind that has had to be dealt with. The Governor General in Council is thus satisfied that whatever may be the careful economy displayed in the construction of the works, the outlay will still rise to so large a sum as to cause, for many years to come, an exceedingly heavy burden on the public revenues. Under these circumstances, it is that His Excellency in Council has felt it to be necessary thus strongly and repeatedly to urge the extreme importance of the considerations which I have had the honour to communicate to you for the information of the Government of the Punjab.

15. In conclusion, I am again directed by the Governor General in Council to lay great stress upon the necessity of enforcing perfect regularity in all the proceedings connected with this undertaking from the beginning. It should, therefore, be impressed upon the Chief Engineer that work can only be permitted to go on in accordance with sanctioned estimates. This may involve some little delay in the outset, but not in the end, and without strict attention to methodical procedure, the result can only be wasteful expenditure, disappointment, and discredit. Whatever establishments may be really required for the proper supervision of the work or the control of the accounts will be freely given, and it will be the constant aim of the Government of India to afford all such needful support to the Officers employed in carrying out this important State line, as will secure the earliest possible completion of the works in a thoroughly satisfactory manner, both as to constructive efficiency and economy of first cost.

No. 63 R, dated 23rd June 1869.

From—The Government of India,
To—The Secretary of State for India.

With reference to Sir Stafford Northcote's despatch No. 94, dated 24th November 1868, and previous correspondence regarding the Railway from Lahore to Rawul Pindee, we have the honour to forward, for your Grace's information, copy of correspondence with the Punjab Government on the subject.

No. 72, dated 20th October 1869.

From—The Secretary of State for India,
To—The Government of India.

I have had under consideration in Council your Excellency's despatch of the 23rd June last, No. 63, forwarding copies of further correspondence with the Punjab Government relative to the projected Railway from Lahore to Rawul Pindee.

2. The only remark I have to make at present on the correspondence is, that I agree in your Excellency's views as expressed in the 3rd and 5th paragraphs of the letter from your Officiating Secretary to the Punjab Government, No. 544, dated 12th May 1869, *viz.*, "that this Railway should be designed and carried out so as to ensure the smallest expenditure that will provide a thoroughly permanent and useful iron road that can be traversed by the ordinary locomotive and wagon stock in use on the Punjab and East Indian Railways, at a low speed," and that "the principle to be followed should be to commence the line on the most economical scale possible, and to look to improvements being carried out by degrees in the future, as the traffic is developed and an amelioration of gradients and addition to the conveniences first provided are justified by increased returns."

3. I desire that the works may, as far as possible, be so designed in the first instance as to admit readily of the future ameliorations and additions which may be found expedient.

Notes of a conversation between the Secretary in the Public Works Department, Government of India, and Mr. Lee Smith, *Chief Engineer, Punjab Northern (State) Railway, in which were discussed various matters connected therewith, held at Simla, on the 25th May* 1869.

Approach into Lahore Terminus of the Punjab Railway.—An estimate to be got out as soon as possible, for the distance between the Trunk Road Trans-Ravee and the Terminus for a single-track, 16 feet formation being regarded as the standard breadth, except for about a mile near the Terminus which may be for a double-track, for which 28 feet to be the standard formation. The bank can then be thrown up to limit the stream of the Ravee.

The line to avoid the Badamee Bagh and pucka road near the city walls, if possible, and the cost of the land required for the works to be as fully considered as the cost of the works themselves.

The old channel of the Ravee might be closed before the ensuing floods, if possible, and after the rains the necessity for acting on the cold-weather channels of the river by bandels and spurs, as their direction may show to be necessary, may be taken into consideration. But no actual works of this sort to be undertaken without further sanction, so as not to throw away money. The abutments of the bridge to be got in before the monsoon of 1870, and the banks on either side to be closed in above high flood-level, so that the river may have a fixed opening to go through in those floods.

The formation widths already mentioned to be adopted as standards. They will suit either longitudinal or cross-sleepers. The dimensions of sleepers may be—

Transverse, $9' \times 9'' \times 4\frac{1}{2}''$ longitudinal, $9'' \times 4\frac{1}{2}''$ with ties $4\frac{1}{2}'' \times 4\frac{1}{2}''$ at intervals of $4\frac{1}{2}$ feet.

The latter will require 20 per cent. less timber and ballast than the former, but this question to be re-considered on receipt of the report Mr. Lee Smith is understood to have under preparation.

One-half of the surface of the Trunk Road (whichever half Mr. Lee Smith prefers) to be made available for the Railway.

The existing timber-topped bridges to be used (if it be found on further calculation to be desirable), by substituting new superstructure as level-crossing bridges. This to be considered in connection with the position of stations and watering arrangements, as such level-crossing bridges will not be inconvenient at the stopping-places of the trains. Bungalows as residences to be erected only at places where likely to be required for large works, and at stopping-places.

The Road Department to abstain from further repairs to the portion of the road taken for the Railway. The width of metal on the other side may be increased at once in lieu of the repairs on the Railway half, if requisite.

Where the road passes through the middle of a town, *e. g.*, Goojranwalla, either road or Railway may be diverted, and suitable fencing given if the Railway goes through the town on the existing road.

Fencing, as a rule, need only be given near towns or crossings.

Facts as to floods in flood-openings to be collected this year; also the Chenab crossing to be specially considered without delay.

The maximum gradient over the Kharian Range may for the present be taken at $\frac{1}{100}$.

Proposals for the purchase of Mr. Coates' plant—(about 2 miles of rails) may be submitted, and on the estimate being sanctioned, the whole may be purchased, or such part as is deemed suitable.

Brassey and Company's Plant—difficulties with Irrigation Department concerning—to be settled personally by Mr. Lee Smith, with Captain Home and Brassey's Agent at Kussowlie.

Enquiries will be made regarding a store-yard site at Calcutta or Howrah, and something of the kind may be necessary at Kurrachee. Landing and transport arrangements to be considered as soon as the report called for as to the routes to be adopted may be submitted.

In the event of an arrangement being come to with the East Indian Railway, the best means of getting material across the Sutlej and Ravee should at once be taken into consideration, and it should be seen whether it will be possible to send the loaded wagons across boat-bridges at both or either of these rivers. At the Sutlej crossing a joint arrangement might perhaps be come to with the Railway Company.

Establishment matters.—Mr. Collett to be offered Rs. 1,200 per mensem on joining, in accordance with Secretary of State's permission to replace Mr. Stone.

A Deputy Controller and a Store-keeper to be appointed, and a Personal Assistant to the Chief Engineer for correspondence and general business. Temporary Office and other Establishments can be sanctioned by the Punjab Government, but with the proposals for the permanent distribution of the Engineers should be submitted proposals as to permanent Office, &c., Establishments.

As respects some expenditure incurred by Mr. Lee Smith, without proper authority, on tents and sawaree camels, the case should be sent up for orders. There is every desire on the part of the Government to condone breach of rules in the past, provided they be adhered to in the future.

Notes of a conversation between the Secretary in the Public Works Department, Government of India, and MR. LEE SMITH, *Chief Engineer, Punjab Northern (State) Railways, in which were discussed various matters connected therewith, held at Simla on the 22nd June* 1869.

Location of line from Terminus of Punjab Railway at Lahore towards the Ravee.—Approved as shown on plans with road diversion near the city wall, but this must necessarily be subject to the further approval of the local Government.

The Badamee Bagh, it is said, has ceased to be a place of public resort. There is, therefore, no apparent objection to the line intersecting it.

Formation width of this portion.—The width of the formation from the Terminus to the Ravee may be 20 feet, unless the cost of land in the immediate vicinity of the city should make it expedient to reduce the width to the 16 feet already decided on for a single track. The extra width is assented to on Mr. Lee Smith's representation of the double purpose of the embankment in the flooded ground, *viz.*, a bund as well as a Railway bank.

No part will be required to be made wide enough for a double track, as contemplated at the last meeting.

The gradient $\frac{1}{100}$ near the Terminus is not objected to, as it admits of a considerable reduction of the height of bank.

Ravee Bridge.—The bow-string wrought-iron girder design put in by Mr. Lee Smith is generally approved, subject to present expectations regarding quantity of metal in it being confirmed by the finished design, but to be modified as follows:—

The outside foot-ways to be suppressed, and single foot-ways to be given inside, the tracing being arranged out-side. The foot-passenger traffic will be shut off when trains are passing, so that the only load to be considered, besides the dead-weight of the structure itself, is the live-load of the Railway traffic. This may be taken as a live-load of $1\frac{1}{4}$ tons perfoot forward, or a dead-load of twice that amount.

The weight of the superstructure itself will be about 0·5 to 0·6 ton per foot forward. Thus, the total working dead-load to be provided for will be about 3 tons per foot run. The iron composing the girder is not to be strained more than 4 tons in compression, and 5 tons in tension.

The length of span (132′ 6″) is accepted as sufficiently manageable, and in the light of experience elsewhere, as likely to be fairly economical, though comparisons of cost of substructure with superstructure with varying spans would have afforded the means of a more correct judgment on this head, supposing that the depths of the wells could have been definitively fixed at this stage.

It is considered very desirable that the same description and size of girder should be adopted for the large bridges over the Chenab and Jhelum, and perhaps the Sohan, as over the Ravee. And for the piers brick-wells, two in number for each pier, and of $8\frac{1}{2}$ feet diameter, would seem preferable to a single well of larger diameter.

A complete design for one span of the bridge should be got out and submitted with an estimate at an early date to admit of final orders being passed, and of the needful Indents being sent Home.

Permanent-way.—The section of rail has been settled as far as the Jhelum, but Mr. Lee Smith will provide in his Indent for holes for spikes, or fang-bolts at the joints, and he will consider whether it is expedient to widen the foot of his rail to admit of fang-bolts being used throughout. For the present, however, except perhaps at joints, or on short curves, it will suffice if brob-spikes are used for securing the rails to the sleepers.

Transverse sleepers 9′ × 9″ × $4\frac{1}{2}$″ are approved as the rule, nine being used to each rail of 24 feet. This gives 1,980 sleepers, or 5,009 cubic feet of timber per mile; say for 200 miles of line 1,00,000 cubic feet of timber in sleepers. Dr. Brandis will be asked to state what prospect there is of this supply being forthcoming within (say) three years from local sources. Mr. Lee Smith will report as to protecting the sleepers, the means being available in Brassey's plant. It is doubtful whether Deodar timber needs such protection, however, and Cheer has not yet been tried.

Longitudinal sleepers may, however, be used in places if thought expedient, or as an experiment.

An Indent for rails, fish-plates, bolts and nuts, brob-spikes, some fang-bolts (for $4\frac{1}{2}$″ sleepers), and a few steel fish-clips (as an experiment) for 100 miles of line, should be sent in at once for transmission to England.

Transport of Stores. Route to be adopted.—**The East Indian Railway Company is prepared to transport the whole of the material of this Railway at a uniform rate of ¼ pie per maund per mile, with a certain amount of latitude as to time and quantity. Presuming that the same rate will be conceded on the Delhi and Punjab Railways, it is calculated that the cost from the ship in Calcutta to Lahore would be about Rs. 52 per ton, inclusive of an allowance of Rs. 2 to meet the extra cost caused by the Sutlej break. This route would be free from all risk, whether of loss of material, or of time.**

The most favorable of the estimates submitted by Mr. Lee Smith is that for the Indus route by boat and rail up to Lahore, by boat to Wuzeerabad and Jhelum. Omitting insurance, the rate per ton distributed over the line is about Rs. 40.

The next most favorable estimate, *i. e.*, for the same route by boat and rail to Lahore, thence by cart over the line. The rates arrived at, omitting insurance, are Rs. 37 to Lahore and Rs. 46 over the line. These are for permanent-

way. For bridge-work, which will be about one-fourth of the whole tonnage to be moved, the rates are, omitting insurance again,—

	Rs.	A.	
To Lahore	40	8	Supposing a uniform rate on the Railways for ¼ pie per maund per mile.
„ Chenab—			
By boat	43	12	
Viâ Lahore	52	0	
To Jhelum—			
By boat	43	12	
Viâ Lahore	59	8	

The adoption of the Indus route would involve the establishing of a transport service, and would be attended with great risks both of loss of material and of time. Mr. Coates' tender is for Rs. 60 per ton for permanent-way material, and Rs. 65 for bridge material distributed over the line, and bearing all risks. These rates to Lahore may be taken at Rs. 50 and Rs. 55 per ton respectively.

It appears probable that the total weight to be moved will be about 27,000 tons, of which 20,000 tons will consist of permanent-way, 1,000 tons miscellaneous, which may be classed with bridge material, and 6,000 tons of bridge material.

With a special transport service, this material might be placed at the following total outlay :—

	Rupees.	
A.—*Viâ* Indus to Lahore	10,23,500	With great risks of loss and of delay.
and distributed over line	250,000	
TOTAL ...	12,73,500	
B.—*Viâ* Indus by boats to Lahore, Chenab and Jhelum, and distributed	12,21,000	
C.—*Viâ* Indus, Mr. Coates' tender covering all risks, and distributed	16,65,000	
D.—*Viâ* Calcutta by rail to Lahore	14,04,000	No risks.
Distribution	2,50,000	
TOTAL ...	16,54,000	

Supposing, then, the rate of ¼ pie is conceded on the Punjab Railways, the Calcutta route is preferable, on the score of total outlay, to Mr. Coates' tender, apart from the greater facilities of obtaining freight to Calcutta, and the probable lower freights ruling to that port, than to Kurrachee; and looking on the cost of a special transport service on the Indus as likely to entail an outlay of 12⅓ lakhs, supposing the whole of the material were brought by that route, which is not probable under any circumstances, the cost *viâ* Calcutta would apparently be in excess by 4 lakhs. But on the East Indian Railway it may be reckoned that 50 per cent. of the amount paid as freight will be returned in profits, and on the undertakings of the Sindh Company 30 per cent. Thus, by the Calcutta route, the net outlay would in reality be reduced to Rs. 10,70,000 with no risks, and on the Indus route to Rs. 11,60,000 with all its risks. The latter route, moreover, is an estimate with, as respects the boat freight, an element of considerable uncertainty.

It seems, therefore, that the Calcutta route should be definitively adopted for the whole of the material. The difference, it may be noted, between the ⅓ pie and ¼ pie rates by the Calcutta route is Rs. 16 per ton, and one-fourth of the whole distance is on the Punjab Lines.

With reference to the break at the Sutlej, it is desirable that it should be ascertained what arrangements are possible for reducing this inconvenience to a minimum, and the Punjab Government will be addressed on the subject, in connexion with the experimental bit of line with a gradient of $\frac{1}{40}$, regarding

which a communication was recently made to the Punjab Government, and it should be moved to ascertain the rate the Punjab Railway Agent will concede for the transport of material.

Mr. Lee Smith will make his recommendations as to the latitude as to time and quantity in delivering material to be given to the East Indian Railway Company, and the Agency will then be addressed on the subject.

Mr. Lee Smith will also estimate what storage space would be required in Calcutta for his material, *i. e.*, the maximum at any one time.

Line from Jhelum to Pindee.—From an inspection of the section of the Grand Trunk Road, it appears that there are $6\frac{3}{4}$ miles of gradients worse than $\frac{1}{40}$, and $8\frac{1}{4}$ miles (in addition) worse than $\frac{1}{50}$, total worse than $\frac{1}{50}$, 15 miles.

The road surface is to be appropriated for the rails, as below Jhelum, subject to its being improved to a maximum grade of $\frac{1}{40}$, with tolerable curves for a slow traffic. If in places it should be expedient to divert the ordinary traffic, the formation of the diversion may be 20 feet in cutting, or 24 feet in bank, and gradients of $\frac{1}{20}$ may be adopted.

While a maximum grade for the Railway of $\frac{1}{40}$ is prescribed, it is left to Mr. Lee Smith to bring forward proposals for improving these severe grades; but the extra cost must be distinctly exhibited, and if the extra outlay be comparatively small, they will be considered. If, on the other hand, a very large expenditure is required to obtain even $\frac{1}{40}$, something worse must be adopted, and the question of adopting an incline with a stationary, or a bank, engine considered, if necessary.

Notes of a conversation between the Under Secretary in the Public Works Department and MR. LEE SMITH, *on the 6th July* 1869.

Kharian Range. Cuttings and Curves.—A maximum width of 20 feet at formation level may be given in cuttings, and a minimum curve of ¼ mile radius adopted, but the latter may be reduced to 1,000 feet, if it should appear that any material advantage would result.

Ballast.—With transverse sleepers, width of ballast at sleeper level to be 10 feet. Depth below sleeper to be 8 inches on the Trunk Road; 12 inches elsewhere.

Standard dimensions.—Plans showing standard dimensions on the guaranteed lines were made over for Mr. Lee Smith to propose any modifications that may be called for on them, with reference to the general style of line contemplated between Lahore and Pindee.

Brick-making and Fuel.—Papers relating to Hoffman's kilns were made over to Mr. Lee Smith, who stated his probable requirements in the way of wood-fuel to be—

At the Ravee	2	lakhs maunds.
„ the Chenab	6	„ „
„ the Jhelum	3	„ „
Total	11	

Timber.—Mr. Lee Smith mentioned that he would require 100,000 cubic feet of timber for staging. These wants and his sleeper requirements will be brought to Dr. Brandis' notice, in order that he may communicate with the Punjab Forest Department, and ascertain what quantities can be supplied by that Department, of what descriptions of timber, at what places, and in what times.

Mr. Lee Smith will be ready for sawing logs in three months, and the delivery of fuel cannot commence too soon.

Section of Sleeper.—Consideration of a form of sleeper adopted on the Brenner Railway was suggested to Mr. Lee Smith as affording a greater bearing surface with a given section than of rectangular, provided it can be cut economically.

General specification.—Mr. Lee Smith will draw up for approval a general specification for guidance in preparing the designs and estimates and carrying out the works throughout the line, to be submitted through the Punjab Government.

Indent for Permanent-way.—Mr. Lee Smith's Indent for 100 miles of permanent-way was approved, and will be sent Home by the Mail of the 8th instant.

Workshops.—With the large workshops of the Punjab and Delhi Railways at Lahore, the expediency of the Government establishing permanent shops on a large scale for the Northern Line cannot be admitted, but small shops of a temporary character will be required in connection with each bridge during construction, and it will be for further consideration whether any, and what, shops may be necessary, either at Pindee or elsewhere, for carrying out small repairs to locomotives, &c., when the line is opened.

Dated 6th July, 1869.

From—H. LEE SMITH, Esq., *Chief Engr., Punjab Northern (State) Railway,*
To—The Secretary to the Government of India, P. W. DEPT.

In the Notes of our last Meeting of 22nd June, I observe it is ruled that, in calculating the weights of the girders for the large bridges, the maximum moving load is to be doubled and added to the fixed load, and that the sum is not to strain any part to more than 4 tons in compression, or 5 tons in tension, per square inch. This is greatly in excess of the Regulations of the Board of Trade, and I think also in excess of our requirements. Its effect would be to increase the weight of iron in the Ravee Bridge by about 10 tons per span more than in the drawing with outside foot-paths which was discussed at the Meeting above referred to, and this notwithstanding the suppression of the outside foot-paths and the consequent diminution of the moving load.

The rule of the Board of Trade for wrought-iron bridges is that no part is to be strained to more that 5 tons per square inch when loaded with the heaviest engines. In other words, the fixed load plus the maximum moving load (*not double*) is not to strain to more than 5 tons in any part. This rule is a crude and unscientific one; it takes no note of the increased stress of a rapidly moving load, and allows the iron to be strained as much in compression as in tension. It is a relaxation of the older Board of Trade Rule still in force for cast-iron girders, and which is equally applicable to wrought-iron, and is the only accurate one, namely, let the *breaking weight* equal six times the maximum moving load plus three times the fixed load.

A mean between these two factors of safety (6 and 3) should be taken for the "mixed load." In our case this would be—maximum moving load 25 cwt. per lineal foot. Fixed load say $11\frac{1}{3}$ cwt. per lineal foot—then $\frac{(25 \times 6) + (11\frac{1}{3} \times 3)}{25 + 11\frac{1}{3}} = 5$ nearly. I take the breaking weight of rivetted work at 38,000 lbs. per square inch in compression, and 50,000 lbs. per square inch in tension.

These are the figures already adopted in designing these girders, and I would propose to adhere to them in getting out of the modified design, but any further progress in this must await the orders of Government on the rule to be adopted.

If these figures be followed, the saving effected by suppressing the outside foot-paths will be about 7 tons per span, amounting, in the 18 spans of the Ravee at the rate already taken of Rs. 410 per ton, to Rs. 51,660—say half a lakh.

At the last Meeting the saving was guessed at double this.

No. 956 R, dated 20th July, 1869.

From—The Secretary to the Government of India, P. W. DEPT.,
To—The Joint Secretary. to the Govt. of the Punjab, P. W. Dept., Railway Branch.

I am directed to inform you that the conditions on which the girders of the large bridges on the Punjab Northern Railway are to be calculated (*vide* Notes of Conversation of 22nd June 1869), should be amended as follows:—Mr. Lee Smith having brought to notice that, under the Board of Trade Regulations, the test load of engines is taken as a *dead*, and not as a *rolling*, load. Further consideration has also led to the conclusion that 1 ton per lineal foot is more likely to be the weight of the girders and their superstructure, including rails, foot-ways, cross-girders and platform for cart-way.

The *proof load* is to consist of a train of engines to be brought over the span at speed. This load, it is estimated, will be $1\frac{1}{4}$ tons per lineal foot, and taking the weight of the girders, &c., at 1 ton (which, however, may be corrected to the actual weight when more exact calculations are made), the total proof load will be $2\frac{1}{4}$ tons per lineal foot. Under this load, regarded as *dead*, no part of the girders should be strained more than 4 tons in compression and 5 tons in tension per square inch.

The ordinary *working load* may be taken to consist of a heavy goods train, 14 axles of which may be on one span at a time, each axle, with the improved vehicles which may be eventually looked for, carrying 9 tons. This would give a load of 1 ton per foot forward, and adding this to the weight of the superstructure, the total working load would be 2 tons per foot forward, or one-ninth less than the proof or test load. Under this load, then, considered entirely as a dead load, no part of the girders is to be strained more than $3\frac{5}{9}$ (say $3\frac{1}{2}$) tons in compression and $4\frac{4}{9}$ (say $4\frac{1}{2}$) tons in tension.

2. Adopting Mr. Lee Smith's* figures for the ultimate strength of wrought-iron rivetted work, the amended conditions will provide a safety co-efficient of five, estimated in Fairbairn's method for wrought-iron girders. Under the circumstances of the exceptionally small and slow traffic expected on this line, this may be considered sufficient, though Fairbairn advocates a co-efficient of six. The Board of Trade rule for cast-iron girders, if applied, as proposed by Mr. Lee Smith, would give a co-efficient of only $4\frac{1}{2}$, with the proportion between the fixed and rolling load as now amended.

If Mr. Lee Smith desires any further consideration of the above remarks, it will be well that his representation should be made as early as possible.

* Compression 38,000 lbs. per square inch.
Tension 50,000 lbs. ditto.

No. 287 S, dated 1st July, 1869.

From—LIEUT. L. CONWAY-GORDON, R. E., *for Joint Secy. to the Govt. of the Punjab, in the P. W. Dept., Railway Branch,*

To—The Secretary to the Government of India, P. W. DEPT.

I am directed to forward, for the information of the Government of India, the following remarks by this Government on the most advantageous system to

be adopted for the transport, from seaboard to site, of the permanent-way, bridge iron-work, and other materials required for the Punjab Northern (State) Railway.

2. It is observed that, in the Chief Engineer's letter of the 10th June 1869, to your address, on this subject, no less than four systems of transport are compared :—

1*st.*—*Viâ* Kurrachee to Kotree by rail; thence by river to the site of the Jhelum, Chenab or Ravee Bridges, thence by road to site.

By direct Government Agency.

Estimated cost of carriage.

Bridge-work	Rs.	55 per ton.
Permanent-way, &c.	„	44 „

2*nd.*—*Viâ* Kurrachee and Kotree as before, by River to Mooltan, by rail to Lahore, thence by road to site.

By Government Agency.

Bridge-work	Rs.	63 per ton.
Permanent-way	„	50 „

3*rd.*—*Viâ* Kurrachee to site.

By contract; the contractor taking all risk.

Bridge-work	Rs.	65 per ton.
Permanent-way, &c.	„	60 „

4*th.*—*Viâ* Calcutta, by rail and road to site.

By Government Agency.

Bridge-work	Rs.	80 per ton.
Permanent-way, &c.	„	62 „

3. With regard to these four alternative proposals, I am to observe that, in the opinion of His Honor the Lieutenant Governor, the first two may be put at once out of consideration, the difficulty, danger and delay attending the navigation of the upper parts of the Chenab and Jhelum entirely prohibiting the former; and with regard to the latter, as compared with the third alternative, not only is a large scattered establishment far removed from Head-quarters difficult to effectually supervise, but the action taken by the large Contractors, Messrs. Brassey, Wythes and Henfrey in similar circumstances, and with regard to similar material, appears also to demonstrate that, on the whole, the carriage of permanent-way, &c., cannot be effected more advantageously by direct agency than by contract. His Honor, too, is induced to believe that the cost by the first two routes has been slightly under-estimated.

4. Contrasting the two last systems proposed, I am to remark that the Calcutta route apparently possesses an advantage in time, but in no other respect. Till the Sutlej Bridge be completed (and the iron-work of this has only lately been ordered), the number of times the materials will have to break bulk will be equal.

On the one hand, a Contractor, Mr. Coates, has already offered to undertake the carriage at from Rs. 60 to Rs. 65, all loss remaining his, and it is possible that by inviting tenders even lower rates might be obtained on the same conditions. On the other, the estimated rates are from Rs. 62 to Rs. 80, and this without including the cost of the necessary Agencies at Calcutta, Loodianah and elsewhere, and the risk of loss or damage in passing the materials over the Sutlej. It is observable, too, that in estimate No. 4, no extra allowance has been made for handling the bridge iron-work, or for the difference of freight from England between Kurrachee and Calcutta.

The total difference in the cost of the two routes of the carriage of 29,000 tons cannot be less, it is believed, than 3½ lakhs of rupees, which appears to His Honor a sufficient ground for recommending to the Supreme Government

the adoption of the Calcutta route for such material only as may be urgently required either for commencing operations or otherwise, and that tenders for the transport of the remainder *viâ* Kurrachee be publicly invited.

5. In conclusion, I am to observe that though it is probable that Mr. Coates would have no competitor as a contractor, he has abundantly shown himself to be such an efficient and reliable one, that the fact of there being a man of his stamp on the spot greatly enhances the preference to be given to method No. 3.

It should not be forgotten, too, that by either route the permanent-way and girder iron-work would arrive before being required, nor that more delay has been experienced in the carriage of the permanent-way for the Loodianah Section of the Delhi Railway *viâ* Calcutta than of that of the Beas Section *viâ* Kurrachee.

No. 876R, dated 7th July, 1869.

From—*The Government of India*, P. W. Dept.,

To—*The Joint Secy. to the Govt. of the Punjab, in the P. W. Dept., Railway Branch.*

In acknowledging receipt of your No. 2878, dated 1st instant, recommending the route of the Indus Valley, and the agency of a Contractor for the transport of materials for the Punjab Northern (State) Railway from the seaboard to Lahore, I am directed to invite attention to the Notes of conversation between the Secretary in this Department and Mr. Lee Smith on the 22nd June 1869, and to enquire, with reference to the comparative advantages of the different routes as therein reviewed, whether the Lieutenant Governor is disposed to modify the above recommendation, or has any further observations to offer on the subject.

No. 396 S, dated 12th August, 1869.

From—Lieut.-Col. H. Drummond, R. E., *Joint Secy. to the Govt. of the Punjab, in the P. W. Dept., Railway Branch,*

To—*The Secretary to the Government of India*, P. W. Dept.

I am directed to acknowledge the receipt of your letter No. 876 R, dated 7th July 1869, on the subject of the inland transport of material for the Punjab Northern (State) Railway from Lahore to Jhelum, and in reply to forward, for the information and orders of the Government of India, copies of papers as marginally noted on the subject.

No. 11, dated 10th August 1869, from Chief Engineer, Punjab Northern (State) Railway.
No. 15 S, dated 12th August 1869, from Chief Engineer, Punjab Northern (State) Railway, in reply to above.

2. The Hon'ble the Lieutenant Governor agrees with the Chief Engineer Mr. Lee Smith in thinking that the cartage of the quantity of permanent-way material within the period (from 1st January to the middle or end of May 1870) will be a very serious difficulty, and would recommend that Mr. Coates be given the contract for the transport of a portion of the above material to Jhelum and the Chenab, as suggested by Mr. Lee Smith, provided that it is certain that freight to Kurrachee at the rate of 1,540 tons per month is likely to be obtained, but on this point His Honor is rather sceptical, for the reason that vessels will not ordinarily take more than 300 tons of such dead-weight as iron.

It would be necessary to obtain five vessels bound to Kurrachee every month for five months to accomplish the above, and this, the Lieutenant Governor thinks, is hardly likely to be secured from England to Kurrachee.

If, however, freight for even 1,000 tons per mensem can be secured, it would, in His Honor's opinion, be advisable to secure that quantity by Kurrachee, rather than not obtain any of the material by that route.

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3. If, therefore, the required freight to Kurrachee can be obtained, and Mr. Lee Smith's proposals are approved by the Supreme Government, I am to request that the orders of the Government of India on the subject may be communicated by telegraph.

4. With reference to the Chief Engineer's remarks about cartage from Loodiana to the Beeas, I am to observe that it is probable that the Delhi Railway will be opened for traffic as far as Jullundur from the Beeas some months previous to its being opened down to Phillour; but with regard to this, more precise information will be obtained from the Agent.

5. In conclusion, I am to suggest that, in Telegram No. 1 proposed by Mr. Lee Smith to be sent to the Secretary of State, the words, "if possible," be added after "Kurrachee," and the word "first" omitted before "preference."

No. 118, dated 10th August, 1869.

From—H. LEE SMITH, ESQ., *Chief Engineer, Punjab Northern (State) Railway,*

To—*The Joint Secy. to the Govt. of the Punjab, in the P. W. Dept., Railway Branch.*

I have the honor to acknowledge receipt of your docket No. 3778 of yesterday's date, and in reply to state that I am very glad this opportunity is offered me for re-opening the question of inland transport of permanent-way material. It is, moreover, no slight relief to me to find the Punjab Government in favor of the measure which I am about to urge for adoption as strongly as I can, though principally on the score of an element which appears hitherto to have been hardly sufficiently considered.

2. In one of the conversations, records of which reached me under cover of yours under reply, it was arranged that the whole of the permanent-way material be shipped to the port of Calcutta, and thence brought up to Lahore by the East Indian Railway Company and the Punjab and Delhi Railway Company; the former having agreed, and the latter being expected to agree to the rate of quarter pie per maund per mile, and that from Lahore upward we should cart the material depositing it alongside the line.

3 I now wish to draw attention to the fact that this mode of conveyance above Lahore will be fraught with much difficulty, and even very considerable risk of failure so far as expedition of work is concerned, because the demand for carts for this purpose will bring our requirements in this line too far above the local resources.

4. The first consignment of permanent-way material is not expected to arrive in port till latter end of December next, the carting of it therefore above Lahore may be considered to commence with the beginning of January 1870, at the very earliest; and if, as the Government of India was allowed to expect, the line to Jhelum (with exception of the three large bridges) is to be opened for traffic before the end of 1870, it becomes almost an absolute necessity that the whole of the 11,000 tons of material be carted before the rivers rise and bridges are removed, which cannot be counted on being later than May, if an average season be assumed. We should, therefore, have to cart 11,000 tons of material in the first five months of 1870, taking it along the line with an average lead of 50 miles.

5. Assuming a two bullock-cart to lead 20 maunds 15 miles a day, and to make 25 miles a day on the empty-return journey, it would take 2,052 carts daily employed to do this work. Besides this, we shall require daily 866 carts to lead merely the first lift of ballast, assuming that work to be spread over eight months. Thus our requirements for these two items alone amount to 2,918 carts a day for a period of five months, besides whatever we may need to re-place break-downs and irregularities, carts at platelaying head to lead out sleepers, to do general work, especially at the bridges, and bullocks for mortar-mills, soorkee and brick machines, &c., so that, including all these, cattle for

3,500 carts may well be put down as an under rather than over statement of our daily requirements.

6. To calculate on finding this available is altogether out of the question, and would still be so even if we had not so formidable a competitor as the firm of Brassey, Wythes and Henfrey, who are our close neighbours, and, indeed, even now in matter of cartage draw on the local resources to exhaustion on three-fifths of our length.

7. Under these circumstances, I would strongly urge that we be relieved of the greater part of this cartage by giving Mr. Coates the conveyance of permanent-way material for the whole distance mid-way between Lahore and Chenab, say 30th mile-post up to Jhelum to be carried by river thus,—2,200 tons at Jhelum to be worked out telescopically, from thence to mid-way between the Jhelum and the Chenab, and 5,500 at the Chenab, 2,200 of which would be led out similarly towards the Jhelum, and the remaining 3,300 to the point mid-way between the Chenab and Lahore.

8. This would not only relieve us of a very serious difficulty, but would effect a very considerable saving. Assume the distance from Lahore to Jhelum to consist of what is very near the truth, namely, from Lahore to the Chenab, 60 miles, and from the Chenab to Jhelum, 40, then in having material delivered at the three stations of Lahore, the Chenab, and Jhelum in such quantities as above proposed, the lead from having been an average of 50 miles, will be reduced to the following, *viz.*:—

	Rs.
First 30 miles to be led out by us, average lead 15 miles, which (take 50 miles lead at 10 for basis) would make a rate of 3 per ton on 3,300 tons	9,900
Latter 70 miles to be led out by Mr. Coates, average lead 12 miles, computed on the same basis, at the rate of Rs. 2-6-5 per ton on 7,700 tons ...	18,488

This second item we would abate from Mr. Coates' tender on the ground that we would prefer his giving up the leading out rather than becoming a competitor in local cartage, and we would do it ourselves by working telescopically with trollies at a rate at least as low as carts if not lower.

	Rs.
9. Seeing, then, that the distribution on 100 miles would cost us	28,388
instead of 10 per ton on 11,000 tons led 50 miles	1,10,000
a saving on cartage would be effected, amounting to	81,618

besides which, the difference has to be considered between Mr. Coates' tender rate and that which the Calcutta rate was computed to amount to, *viz.*, Rs. 2 in favor of Mr. Coates' tender. This, on 7,700 tons, will be Rs. 15,400, so that with the saving of expense in lead and this, a diminution of expenditure of nearly a lakh of rupees would result.

10. Against this are to be considered the two elements recorded in the above-quoted conversation, namely, *first*, return profits from guaranteed Railways; and *second*, difference in probable ocean freight.

11. As regards the first item—return profits. Those on the East Indian Railway are taken at 50 per cent., and those on the Punjab and Delhi, at 30 per cent.; but would it not be well to consider that these profits are on all traffic throughout the year, and not the profits on first class (lowest rate) goods, still less on a rate that is abated even below that. I have not just now data at hand, but I have an extremely strong impression that it is the higher rates of goods from which the bulk of the profits arise.

12. Relative to the second item, ocean freights.—The Government of India do not say that the rates ruling to the port of Calcutta are lower than those to the port of Kurrachee, but only that they expect them "probably" to be so. With very extensive consignment to a new and only partially developed port, the doubt about obtaining return freights might likely enough have that effect, but in the absence of a glut in the market, and 7,700 tons could hardly be supposed to produce that, the shorter voyage to Kurrachee would seem, in the

absence of knowledge to the contrary, to be accessible at a lower rate of freight than Calcutta, if any difference does exist.

13. So for the question of mere outlay in inland transport. Even though the rate of $\frac{3}{4}$ pie per maund per mile be not the most profitable to the guaranteed Railways, yet it might suffice to turn the scales considerably in favor of the Calcutta route, so far as concerns mere outlay on that item; still even then the cartage difficulty, which really is a very serious one indeed, is not met, and remains as likely as ever to be the impediment that would stand in the way of our opening for traffic by the intended date.

14. I would, therefore, urge very strongly that the question be re-considered, and Mr. Coates' tender to deliver at Chenab and Jhelum, and distribute along the line for Rs. 60 per ton, be accepted, barring the distribution item; or if Mr. Coates be now no longer desirous to do the work, that tenders for the delivery of the material at the above-named places be invited by advertisement.

No. 15 S, dated 12th August, 1869.

From—H. LEE SMITH, ESQ., *Chief Engineer, Punjab Northern (State) Railway,*
To—*The Joint Secy. to the Govt. of the Punjab, in the P. W. Dept., Railway Branch.*

I have the honor to acknowledge receipt of your No. 395S of this day, that being a docket of No. $\frac{1}{1}\frac{7}{9}\frac{8}{0}\frac{9}{7}\frac{P}{D}$, from the Agent of the Punjab and Delhi Railways to you.

2. In reply, I beg to say that from it I learned for the first time that the East Indian Railway Company had made their rate of quarter pie per maund per mile for carrying our bridge and permanent-way material, contingent on the latter being not less 75 per cent. of the whole, so I could hardly be said to have overlooked the point, though it appears a very natural one for them to have pointed out and stipulated.

3. I was pretty well prepared for the news conveyed in yours under reply, that the gap of the Sutlej would be from the intersection of the Grand Trunk Road to Phillour for the whole time during which we should be having permanent-way material brought up, but it is to me fresh and unwelcome news that the line between Phillour and the Beeas River is sure to be unopened during an important part, and possibly during the whole of the time when our permanent-way material ought to be coming up.

4. Though it may be reasonably expected that the Punjab Railway Company having their bridge across the Beeas completed and rails laid would permit the material to be loaded on to the line on the left bank, instead of subjecting us to crossing it in boats over the river too, yet a cartage over the whole distance between the Sutlej and the Beeas above 40 miles, besides the gap on the left bank of the Sutlej, appears inevitable.

5. This, considered in connexion with what I pointed out in my letter No. 11 about our already existing cartage difficulty, appears to point even still more strongly to the port of Kurrachee being used largely for permanent-way material.

6. It appears more than possible that when the carriage of permanent-way material is to a great extent withdrawn from the East Indian and Punjab Railway Companies, they may quote a higher rate for the conveyance of bridge and miscellaneous material, but that after all is only on a smaller amount of tonnage compared to the great bulk of permanent-way, and is an unavoidable contingency. Better to be charged a trifle more for the conveyance of bridge work than risk having the whole work delayed, perhaps stopped for want of permanent-way material.

7. The letter from the Agent for the Punjab Railway is herewith returned.

No. 454 S, dated 31st August, 1869.

From—LIEUT.-COL. H. DRUMMOND, R. E., *Joint Secy. to the Govt. of the Punjab, in the P. W. Dept., Railway Branch,*
To—*The Secretary to the Government of India,* P. W. DEPT.

I am directed to forward you, in continuation of this Office letter No. 369S, dated 12th August 1869, a copy of a letter No. 33S, dated 28th instant, from the Chief Engineer, Punjab Northern (State) Railway, informing this Government that Mr. Coates is now unable to undertake the transport of permanent-way material from Kurrachee; and, with reference thereto, to state that under the circumstances, it now appears to this Government advisable to use the Calcutta route alone for the transport of all the permanent-way material, bridge iron-work, &c., required for the Punjab Northern (State) Railway.

I am to state that the proposal of the Chief Engineer to undertake the carriage of this material by direct agency under himself is, in the opinion of His Honor the Lieutenant Governor, wholly unadvisable.

No. 33 S, dated 28th August, 1869.

From—H. LEE SMITH, ESQ., *Chief Engineer Punjab Northern (State) Railway,*
To—*The Joint Secy. to the Govt. of the Punjab, in the P. W. Dept., Railway Branch.*

I beg to state that I am informed of a communication from Mr. Coates of Ferozepoor, in which he informs me that, owing to the dispersion of his establishment, he is now unable to undertake the transport of permanent-way material from Kurrachee.

It is thus rendered necessary that we should, without delay, take steps to ascertain if there are not other contractors willing and able to convey the material for us, in the manner required, and at suitable rates. I have accordingly prepared, and have the honor to submit herewith for your approval, an advertisement for insertion in the *Gazette*, and principal public prints of the West and North-West.

In the event of our, after all, failing to be able to make satisfactory arrangements for this transport by contract, I would here at the same time beg to state that there will be no difficulty in specially organizing for its execution in connection with my own staff. In order, however, to take the early measures which this would imply, it is of great importance that such an alternative should be now considered and provided for by Government.

No. 1398 R, dated 15th September, 1869.

From—*The Government of India,* P. W. DEPT.,
To—*The Chairman, Board of Agency, E. I. Railway Company.*

I am directed to acknowledge the receipt of your No. 479G, dated 28th ultimo, stating that the Board of Agency are prepared to carry a minimum of 20,000 tons of Railway materials for the Punjab Northern (State) Railway at the rate of $\frac{1}{4}$ pie per maund per mile, provided that not less than 15,000 tons, or three-fourths of the whole be permanent-way proper, and that if the proportion of higher classed goods be in excess of one-fourth of the whole, the Board are prepared to carry such excess at 1st class rates, or $\frac{1}{3}$ pie per maund per mile, if that excess be not more than 20 per cent. of the whole quantity of material.

2. You further state that the Board of Agency are prepared to carry Railway materials in the same proportion for the Jeypoor Lines to Delhi at a uniform rate of Rs. 1-10-8 a maund, which is equivalent to carrying 75 per cent. at $\frac{1}{4}$ pie, and 25 per cent. at $\frac{1}{2}$ pie. It is presumed that this average rate

of $\frac{5}{16}$ pie all round would apply equally to materials delivered for the same line at Agra, but it would be satisfactory to receive an assurance on this point.

3. I am directed to accept these proposed rates of freight, and, with reference to your No. 6493, dated 20th August 1869, to agree to the adoption of the Credit Note system of payment.

4. I am to suggest that it seems likely to be the most convenient plan if the first payments are made at the rates of $\frac{1}{4}$ pie and $\frac{5}{16}$ pie, respectively, on the whole quantity of each despatch, without reference to the proportion of differently classed material that may be invoiced, and that the account should be adjusted half-yearly, and the balance, if any, then due to the Railway Company, paid up. Any excess or defect in the proportion of higher-classed materials paid for in preceding half-years, could be allowed for in like manner in settling the accounts of the subsequent half-years. This will enable the actual earnings of the Railway Company in each half-year to be realized and embodied in the Revenue Account for that period.

No. 1399 R, dated 15th September, 1869.

From—The Government of India, P. W. DEPT.,

To—The Joint Secy. to the Govt. of the Punjab, in the P. W. Dept., Railway Branch.

I am directed to acknowledge the receipt of your No. 396 S, dated 12th August 1869, recommending that a tender for the transport of some of the permanent-way material for the Punjab Northern (State) Railway *vid* the Punjab rivers should be given to Mr. Coates, and also of your No. 454 S, dated 31st of the same month, intimating that Mr. Coates was not able to undertake this contract, and recommending that the original order of the Government of India that all material should be sent *vid* Calcutta should now be upheld.

2. I am directed to point out that even had Mr. Coates been able to accept this tender, no circumstances have been adduced that would make such a proceeding more advisable than when it was considered by the Secretary in this Department, in communication with the Chief Engineer, Punjab Northern Railway in June last, and deliberately rejected. At the rates and figures given in the Chief Engineer's memorandum, it would require not more than 315 carts to put the given quantity of materials in the given time on the western side of the Rivers Ravee and Chenab whence, it is stated, it could be distributed by trollies, whereas the Chief Engineer argues that no less than 2,052 carts will be required for the conveyance of permanent-way materials.

3. Enclosed are copies of letters which have passed between this Department and the Board of Agency, East Indian Railway, showing the terms that have been agreed to for the transport of materials for the Punjab Northern Railway. It is requested that when the material begins to arrive, the greatest attention may be given to the exact compliance with the terms thus arranged.

No. 501 S, dated 13th September, 1869.

Memo. from—LIEUT.-COL. H. DRUMMOND, R. E., *Joint Secy. to the Govt. of the Punjab, in the P. W. Dept., Railway Branch,*

To—The Secretary to the Government of India, P. W. DEPT.

Copy of the following proceedings of an official meeting held between the Government and Railway Officers on the 3rd September 1869, in respect to the carriage over the Punjab and Delhi Railways of permanent-way and other materials for the Punjab Northern (State) Railway, forwarded for the information of the Government of India, with reference to Public Works Department's letter No. 887R, dated 8th July 1869.

Resolution No. $\frac{261}{278}$ of Minutes of Official Meeting held on September 3rd, in respect of carriage of Permanent-way and other materials for the Punjab Northern (State) Railway.

Read correspondence ending with Officiating Traffic Manager's No. $\frac{151}{100}$, dated 30th August, submitting copy of No. 587 F—R of 24th idem, from the Traffic Manager, East Indian Railway, and copy of a Resolution passed by the Board of Agency of that Company, agreeing—

1*st.*—To convey not less than 20,000 tons of materials for the Punjab Northern (State) Railway at a uniform rate of $\frac{1}{4}$ pie per maund per mile, exclusive of loading and unloading charges, on the understanding that the proportion of permanent-way materials forms not less than 75 per cent. of the whole.

2*nd.*—That as Government will not bind itself to send a minimum quantity, the Railway Company will not bind themselves to carry a specific maximum each month, but that practically there is no doubt they will be able to carry any quantity that may be offered; and

3*rd.*—That if the Delhi Railway will consent to the arrangement, the East Indian Railway will not object to their wagons being run through to Lahore on the terms of the existing working agreement.

No. $\frac{261}{278}$.—Resolved,—that the Consulting Engineer be informed that the Punjab and Delhi Railway Companies agree to the carriage of materials for the Punjab Northern (State) Railway on the same terms as agreed to by the East Indian Railway.

No. 279 F, dated 25th June, 1869.

From—The Govt. of India, P. W. DEPT.,

To—The Secretary to the Government of the Punjab, in the P. W. Dept.

The Proceedings of the Punjab Government for April 1869, entry No. 13, of which contains correspondence relating to the fuel-supply for the Northern State Railway, have been laid before His Excellency the Governor General in Council. The papers on this subject have not been separately submitted to the Government of India, but the subject is one of the utmost importance, and I am directed to communicate for His Honor's consideration the following remarks and suggestions.

2. In the letters of the Financial Commissioner and Conservator of Forests, two sources of fuel-supply for the Railway are discussed, the existing rukhs and new plantations. The quantity of fuel now standing on the rukhs within 20 miles of the line is estimated at 1,480,225 maunds. But it is clear that these wood-lands are but poorly stocked, the estimated rate per acre varying from 8 maunds to 23·4 maunds.

The existing stock on these rukhs, it is calculated, will last seven years, assuming the line to be 120 miles in length, and run over by three trains each way daily. If the estimate is correct, His Excellency in Council observes that the supply may be expected to last even longer, as the traffic on the line is not likely for some time to require more than one train daily each way.

The existing rukh supply therefore if carefully husbanded, will give a good starting ground for the Railway, though it is clear that it cannot be relied on by itself. This is the more apparent from the consideration that, where the natural stock is so very scanty, reproduction will necessarily be both slow and uncertain.

3. Whatever may be the value of the estimate, His Excellency in Council trusts that the needful orders have been issued to secure the demarca-

tion and preservation of the more promising of these wood-lands. If these rukhs are to yield a permanent and increasing supply of fuel, they must be worked on a systematic plan by officers of the Forest Department, and it may become necessary to consider what will have to be done in this direction in connection with the recent proposals for the establishments of the Fuel Reserve Division. When selecting the lands to be made over to the Forest Department, adequate provision should be made for the people in the vicinity who have hitherto been in the habit of grazing their cattle in these rukhs, and of cutting fuel and wood for building and agricultural purposes.

The Government of India should be kept duly informed of the progress made in the demarcation and transfer to the Forest Department of these wood-lands.

4. In Public Works Department Resolution No. 308 F, dated 14th September 1868, attention was directed to the possible utilization of the wood of the inferior pines for fuel. It is believed that considerable tracts of the inferior pines exist in the outer hills, which at present are utilized to a small extent only. The principal question appears to be whether such wood can be cut and floated down at a sufficiently low price. I am to suggest that experiments might, on a moderate scale, be made, with a view to test the cost of landing such wood at depôts convenient for the Railway. The results of such experiments should be reported in due time.

5. At the same time it is clear that planting operations should be set on foot to supplement the existing fuel resources for the Northern State Railway. I am therefore to suggest, for His Honor's consideration, that steps may at once be taken to obtain suitable land for this purpose. His Excellency in Council is inclined to think that 4,000 acres may at present be considered as the limit of these operations. On previous occasions it has been explained that operations should not be commenced in a large number of small and scattered plots, but that large tracts should be selected within a suitable distance from the line. From the data given by Dr. Stewart, it would appear that the cost of taking up private lands for such purposes in the districts along the line would be very considerable. His Excellency in Council therefore considers that if Government land is available at a greater distance, it should not be rejected without first comparing the cost of carriage of the produce with the interest on the purchase money. Thus assuming the cost of carriage to be about 8 annas per mile for 100 maunds, a distance of 10 miles adds Rs. 5 to the cost of 100 maunds, which, under favorable circumstances, may perhaps be estimated as the annual produce of 4 acres. Assuming also Rs. 50 per acre as the cost of taking up private land, the interest at 5 per cent. would amount to Rs. 10 for 4 acres. In some cases it may therefore be desirable to go a distance of more than 10 miles from the line to get Government land, and where water-carriage is available the distance may be greater.

It appears to His Excellency in Council that an experienced officer of the Forest Department should be specially deputed to select and to take up in communication with the Deputy Commissioners of Districts the needful plots of land for these plantations.

6. As far as practicable, all spare land along the line of Railway should be planted. But the planting and management of such narrow belts and lines of trees must be left to the officers of the Railway Department, whose duties constantly take them to every part of the line. When the fuel-plantations are further advanced, the Forest Department may perhaps assist in giving the services of trained subordinates.

7. In conclusion, I am to observe that the present remarks have been made on the assumption of the line ending at Jhelum, but it is desirable to know, in the event of the line being continued to Attock, what are the sources of fuel-supply beyond Jhelum, and what lands will be available for plantations in the Jhelum and Rawul Pindee Districts. A report on this subject is requested.

Dated 22nd July, 1869.

Memorandum by DR. D. BRANDIS, *Inspector General of Forests, on the requirements of the Northern (State) Railway in regard to fuel for brick-burning and sleepers.*

I beg to submit copies of two letters which I have addressed on the subject of the supply of fuel and sleepers for the construction of the line. For all details I beg to refer to these letters, of which I have submitted copies to the Punjab Government.

2. The results are as follows:—

It appears probable that the arrangements which Mr. Powell made some-time ago in accordance with my suggestions to him in this matter will, if all goes well, and there are fair average floods in the rivers, enable him to place at the disposal of the Railway Department in 1869, 1870, and 1871, material for about 2,16,000 Deodar sleepers.

3. The quantities expected to come down the different rivers are estimated as follows:—

	1869. Logs.	1870. Logs.	1871. Logs.
1. Beeas (Nowshera Depôt) ...	5,000*	4,000	4,000
2. Ravee (Madhopoor) ...	3,000	3,000	3,000
3. Chenab (Wuzeerabad) ...	10,000*	15,000	20,000
4. Jhelum (Jhelum)	1,000	4,000	4,000

4. The Jhelum timber is generally from 10 to 20 feet long, and the logs measure from 20 to 30 cubic feet. The timber from the other rivers is smaller; it has lately averaged from 14 to 16 cubic feet per log, and from 10 to 15 feet in length. These logs may be expected to yield three, and the others five, sleepers on an average. In other words, half the wood of a log will be wasted in cutting sleepers. This is allowing a wide margin for splits, sapwood, cracks, and unsoundness. If due thrift is used in cutting up the timber, and rectangular sleepers are not always insisted upon, the out-turn will be much larger. Therefore, if all goes well, it is not impossible that the wood brought down by the Forest Department may after all furnish material for nearly all the sleepers required on the line. Nevertheless, arrangements should be made to supply the deficiency from other sources, and I have requested the Officiating Conservator to place himself in communication with the Chief Engineer of the line, in the event of his being able to make arrangements for the supply of Deodar timber from other sources.

5. In the event of arrangements for floating down timber of Cheer (*Pinus longifolia*) being successful, I would suggest, for the consideration of the Government of India, that, as an experiment, a moderate quantity of this wood be used for sleepers on the line. They should not be laid promiscuously, but say one mile near some of the principal stations. Precise date as to the duarbility of Cheer in the North-West Punjab are wanting; but I am inclined to believe that this wood will be found to last much longer than is generally supposed.

6. All sleepers, when laid down on this line, should be branded with the year when they were laid down. As there will only be two descriptions of wood, it will suffice to brand Cheer sleepers in addition with the letter C. Whenever any sleepers are taken up, the age of each sleeper should be recorded in a register, and the original registers should, at the end of the year, be sent to the Conservator of Forests.

7. I proposed this plan early in 1863 for all railways in India. Had it been carried out at that time, we should now have much more reliable information regarding the durability of different descriptions of wood. It should at once be adopted on all State Railways, and after the practical working of plan has been tested, it may be adopted on the other railways also.

* Of this quantity 10,000 logs will be required to meet previous Indents.

8. Regarding the report that a proportion of Deodar sleepers had been found rotten before being laid down on the Punjab-Delhi Line, I have set enquiries on foot, but I do not think this report need influence the decision as to the use of Deodar for the Northern Line. The results of my enquiries will be submitted in due time.

9. Regarding the supply of fuel for brick-burning, I would beg to draw attention to my letter No. 148, dated 21st instant, which shows that the probable sources are—

1*st*.—The rukhs in some of the districts through which the line passes.

2*nd*.—Private wood-lands and some of the outer hills in Cashmere.

3*rd*.—Wood floated down the Jhelum and Ravee Rivers.

Arrangements to secure a supply from the third source are about to be made, but I do not expect much wood from that source during 1869.

10. To guard against wasteful cutting in the rukhs, it is necessary that the Forest Department should take charge of them as soon as possible. This and the proper management of the Jhelum Depôt will require the sanction of two additional officers for the Punjab Forest Department. Application for these will probably be made by the Punjab Government as a necessary consequence of my proposals, and I trust that this application, when received, will be favorably considered by the Government of India.

No. 148, dated 21st July, 1869.

From—Dr. D. Brandis, *Inspector General of Forests,*
To—The Officiating Conservator of Forests, Punjab.

I have the honor to inform you that the following will, as at present known, be the requirements for the construction of the Northern Punjab State Railway in the matter of fuel for brick-burning to be delivered at the points where the line will cross the rivers.

2. I will assume the average weight of 1 cubic foot at 40 lbs.—

Ravee	2	lakhs of maunds, or	4	lakhs of cubic feet.
Chenab	6	„ „	12	„ „
Jhelum	3	„ „	6	„ „
Total	11	„ „	22	„ „

This quantity of fuel cannot be delivered too soon, and immediate arrangements must, therefore, be made to organize the needful establishments.

3. In his letter of 13th March to the Financial Commissioner, Dr. Stewart estimated the quantity available in the rukhs within 20 miles of the line as follows:—

Sharukpoor	21,230 acres, with 252,000 maunds.*		
Goojranwalla	None available nearer than 40 miles from Line.†		
Sealkote	None.		
Goojerat	35,000	822,000‡	
Jhelum	35,000	822,000	
Rawul Pindee...	53,000	7,500,000	
	144,230	9,396,000	

or 225 square miles.

It should, however, be borne in mind that the estimates of the fuel available from the Goojerat and Rawul Pindee rukhs was considered much too high by

* Cutting and carriage estimated at Rs. 6-5 per 100 maunds.

† Carriage alone 22—25 per 100 maunds.

‡ Carriage at Rs. 13 per 100 maunds.

‡ Note.—These are the figures printed in the Proceedings, but there is apparently an error.

Dr. Stewart, and that the District Officers state that a considerable portion of this fuel must be reserved for the use of the inhabitants.

4. Under these circumstances, it appears to me that it will be preferable to reserve as much as possible of the fuel standing on these rukhs for locomotive purposes after the line has been opened. By that time I hope the Forest Department will have taken charge of these rukhs and a proper system of cutting will have been arranged. If cutting were now commenced in order to meet the urgent requirements of the railway at all points, the result would, I fear, be the exhaustion beyond hope of re-production of a large portion of these rukhs.

5. For the Chenab crossing no other fuel can, I believe, be made available by the Forest Department, as all the outer ranges are in Cashmere, and it will, therefore, here be necessary to make arrangements as soon as possible to organize the northern division of the rukh establishment, and to commence by taking charge of those lands which are nearest to the Chenab crossing of the line. You should, I think, at once place yourself in communication on this subject with the Financial Commissioner and the District Officers, and arrange for taking charge of these rukhs at once, so as to guard against indiscriminate cuttings. Certain limited blocks might then be assigned to contractors to cut. At the same time everything should be done to encourage the importation of fuel from private lands and from the outer hills in Cashmere, so as to save the Government rukhs for the present as much as possible.

6. A small quantity of fuel may be furnished by broken logs and inferior pines that are collected at the depôt, and the whole of this quantity should be stored, offered to the railway, and not sold to other parties until refused in writing by a responsible officer of the railway. This source of supply might be increased for next year, and to small extent for the current year, if a quantity of the inferior pines were felled and launched in Pangi, and the needful orders should be issued at once for launching, say 5,000 logs, if labour can be got. At the rate of 15 cubic feet per log, this would yield about 38,000 maunds. A separate account should be kept of the expenses on account of this wood, so as to determine whether it will pay to send railway fuel down in this manner. I do not feel confident that it will be possible to land this wood at sufficiently low rates, say at Rs. 30 per 100 maunds, which would correspond to 2·4 annas per cubic foot.

7. At first, while the rukhs are untouched, and supplies from private lands will be available, the railway may be able to get fuel at the Chenab crossing for considerably less than the figure mentioned above, and you must therefore be prepared to have the attempt to send down pine-wood from the hills cried down as utopical. Nevertheless, the experiment must be made, and must be made on a scale sufficient to give liable results. The wood of pines has not the same heating powers as harder woods, but mixed with them it will do very well for brick-burning. In Canada and some parts of Europe it is used largely as locomotive fuel.

8. On the Ravee and Jhelum Rivers you have, besides the inferior pines in the inner, a supply of *longifolia* in the outer hills, and I would suggest your organizing the needful establishments at once for cutting and launching, say, 10,000 logs of *Pinus longifolia* on each river, which would yield upwards of 150,000 cubic feet of wood, and probably more. I hope that Government will see fit to give Cheer wood a trial for sleepers on that line. In that case, the best logs would be sold for timber, and the inferior pieces for firewood, and the experiment might prove remunerative, and might be continued next year. The success in this matter will depend on whether you have any tracts of Cheer sufficiently close to the river to keep down the expense of land-carriage.

9. Should these Cheer operations succeed, you might eventually send down oak and other heavy woods on rafts of Cheer to be sold as fuel. The felling operations of Cheer should be conducted with care in defined localities, to secure as far as possible the re-production of the forest, and as soon as local-

ities for felling have been selected, and operations commenced, I beg that you will furnish me with a special report on the subject. If labor can be had, I would also suggest your arranging to launch about 5,000 logs of the inferior pines, both on the Jhelum and Ravee. Separate accounts should be kept of the operations with Cheer as well as with inferior pines on these two rivers. It will probably be necessary to deliver the fuel to be floated down the Ravee at Lahore; this will create some inconvenience, as your timber depôt is at Madhopoor. I would suggest, after you have secured a supply of firewood on the Ravee, that you should place yourself in communication with the Chief Engineer of the Northern Line, on the subject of the locality where it should be delivered.

10. I would beg strongly to impress upon you the necessity of securing efficient superintendence of these operations. It is the only safeguard against waste, and, owing to the extent of country over which the operations of the Forest Department necessarily are spread, efficient and honest superintendence is doubly necessary, and any attempt to save and pare in this respect inevitably ends in increasing expenditure. It is beyond my province to offer specific suggestions on this subject, but I trust that the success of these operations will not be risked by any hesitation to take the needful steps in this respect.

11. After you have issued the needful orders, and after making all arrangements for carrying out the above suggestions, I beg that you will favor me with a detailed report of what you have done in this matter.

No. 151, dated 22nd July, 1869.

From—Dr. D. Brandis, *Inspector General of Forests,*
To—The Officiating Conservator of Forests, Punjab.

It is of the utmost importance that as large a portion of the sleepers required for the Northern State Railway as possible be furnished by the Punjab Forest Department.

2. The sleepers will be $9' \times 9'' \times 4\frac{1}{2}''$, and about 1,980 will be required per mile. Longer pieces may be required in places for longitudinal sleepers, and for other purposes. At present it is intended to use Deodar only, but I hope the Government will also consent to the use on this line, as an experiment, of a moderate quantity of *Pinus longifolia* sleepers. I understand from you that Mr. Harrison, the Chief Engineer of the Punjab Line, estimates the life of a Cheer sleeper at four years, and my opinion is that, if cut of heart-wood only, and well seasoned, and not employed in cuttings or damp places, Cheer sleepers will be found to last from five to ten years in the dry climate of the North-Western Punjab. But specific data on this subject are wanting; and as the extent of the Deodar forests under the control of the Forest Department is extremely limited, you will do an important service by collecting reliable information concerning the durability of Cheer timber in the plains of the Punjab, and by encouraging a more general use of this wood.

3. The quantity required will be for 200 miles, 3,96,000 sleepers, aggregating about 1,000,000 cubic feet, and distributed as follows:—

	Miles.	Cubic Feet.
Lahore to Chenab	65	370,000
Chenab to Jhelum	40	230,000
Jhelum to Pindee	70	400,000
Total ...	175	1,000,000

In addition to this, 100,000 cubic feet will be required for staging.

The timber will be sawn up by the Railway Department, and I understand that the Chief Engineer will be prepared to commence sawing operations on any of the three rivers, Ravee, Chenab, and Jhelum, early in October next, and that all timber must be delivered before the end of 1871. I also underst and that the Railway Department will be ready to take delivery of the timber at your depôts at Jhelum, Wuzeerabad, Madhopoor, and on the Beeas. Regarding the point where delivery should be taken on the Beeas, you should place yourself in communication with Mr. Lee Smith.

4. To increase the supply of Deodar for next year, you have already, at my suggestion, issued instructions for extraordinary fellings in addition to the usual quantity, which will bring up the total fellings of this season to the following amount:—

	Usual. Trees.	Additional. Trees.	Total. Trees.
Beeas Forests	400	500	900
Chenab and Ravee	1,000	1,500	2,500
Jhelum	400	1,000	1,100
Total ...	1,800	3,000	4,800

As the Railway will be a certain customer for sleepers during these three years, you should instruct Divisional Officers, wherever practicable, during the current and next year, to cut logs in two lengths only, 10 feet and 19 feet, those cases excepted where long logs can be sent down. These classes would yield one and two sleeper lengths respectively. This is important.

Considering that the estimate made by Dr. Stewart in 1865 and 1866 of the aggregate growing stock on these rivers was only 17,500 mature trees, and that about 10,000 trees have been felled since these estimates were made, it would not be right to increase felling operations further during the current year.

In 1870, a larger additional quantity may be felled on the Jhelum, as the number of dead trees is still very large. On this subject I beg that you will favor me with definite proposals by the end of this season.

Regarding the felling operations on the Chenab, Ravee, and Beeas, I have addressed you in a separate communication.

5. It will now be useful to review the probable quantity that may be expected to be available on these three rivers during the three years in question, after making allowance for previous engagements for the delivery of timber to other parties.

I understand from you that the average size of the logs on the Beeas, Ravee, and Chenab has been between 14 and 16 cubic feet, the lengths averaging from 10 feet to 15 feet on these rivers. I do not think that it would be safe to estimate a larger out-turn than three sleepers per log on the average.

The Jhelum timber is generally larger, from 10 to 20 feet in length, and measuring from 20 to 30 cubic feet. These logs may be expected to yield five sleepers on an average.

6. After discussing with you the various chances of the timber yield, we have come to the conclusion that the following quantities may fairly be expected during the three years in question:—

	1869. Logs.	1870. Logs.	1870. Logs.			
Beeas (Nowshera Depôt)	5,000	4,000	4,000	average	3	sleepers.
Ravee (Madhopoor „)	3,000	3,000	3,000	„	3	„
Chenab (Wuzeerabad „)	10,000	15,000	20,000	„	3	„
Jhelum (Jhelum „)	1,000	4,000	4,000	„	5	„
Total ...	19,000	26,000	31,000			

If, as noticed above, additional fellings are ordered for 1870 on the Jhelum and other rivers, the yield of 1871 might be considerably increased.

7. The previous Indents by which the Forest Department is bound are, I understand, as follows :—

1.—Beeas, Executive Engineer, 480 logs.

2.—Ravee, Baloon Barracks, any quantity that can be supplied.

3.—Chenab, Messrs. Brassey and Co., balance of an Indent of 1868 106,000 cubic feet. Other parties, about 2,000 cubic feet.

4.—Jhelum, Executive Engineer, 200 long logs.

I also understand that the stock on hand at the different depôts will not cover these Indents, and that the balance must be met from the timber expected this year. Perhaps you may be able to make arrangements for a part of Messrs. Brassey and Co.'s Indent being supplied from the Beeas Depôt, and to induce the Engineers at Baloon to use *Pinus Excelsa* in the place of Deodar for all in-door work.

8. Allowing, then, 10,000 logs, measuring 150,000 cubic feet, of the expected yield of 1869 on the Beeas, Ravee, and Chenab for these Indents, the following timber would remain available for the Northern Railway :—

1869.	Other rivers ...	8,000	logs, estimated to yield	24,000	sleepers.
„	Jhelum ...	1,000	„ „ „ ...	5,000	„
1870.	Other rivers ...	22,000	„ „ „ ...	66,000	„
„	Jhelum ...	4,000	„ „ „ ...	20,000	„
1871.	Other rivers ...	27,000	„ „ „ ...	81,000	„
„	Jhelum ...	4,000	„ „ „ ...	20,000	„
			Total material for ...	2,16,000	sleepers.

This is on the assumption that all logs will be fit to be converted into sleepers, and that all will be taken by the Railway.

9. These estimates are necessarily vague, and are based on the supposition that there will be fair average floods. It is clear that steps should be taken to supplement the deficiency from other sources. On this subject you should, I think, place yourself in communication with the Chief Engineer of the line, for you may perhaps be able to obtain the needful timber for him at lower rates from traders who have timber on the Chenab and some of the other rivers. If all these transactions were in the hands of your Depôt Officers, there would be less competition for labor, and less chance of other complications.

10. I now proceed to offer a few remarks regarding the mode in which the timber is to be offered and delivered to the Railway Officers. You have already, in accordance with my suggestions, instructed the Divisional Officers not to accept any fresh Indents for timber without your sanction, and for all Indents that are accepted hereafter, the condition should be distinctly made, that they will only be complied with from the balance of timber that may not be taken by the Railway and the holders of previous Indents.

11. On the first of each month all Government Deodar logs at each depôt should be marked with the initial letter of the month, and a statement should be sent by the Depôt Officer to the Chief Engineer of the Northern Line, or to such officer as Mr. Lee Smith may specially appoint for the purpose of selecting and taking charge of the timber. The Statement should show the number of logs on hand, and I would suggest that they be divided into three classes :—

Note.—Oil paint has been found useful in Burmah for such temporary marks in depôt.

I Class 8½ feet to 10 feet in length.
II „ 10 „ to 17 „ in „
III „ 17 „ to 20 „ in „
IV „ above 20 feet in length.

The first and third class logs, would give one and two sleeper lengths respectively. This classification, however, might be modified hereafter in case the first delivery should show a different classification to be desirable.

For these notices and statements, printed forms should be provided. The notice should be despatched punctually on the 1st of the month; it should state that the timber thus marked will remain at the disposal of the Railway Officers to the 1st proximo, and that, if not selected and bought before that date, it will be offered to other purchasers; and an acknowledgment of the notice by return of post should be requested.

12. I would suggest that all arrangements be so made as to commence this system on the 1st October next. Copies of the monthly notices and statements should, on the same date, be sent to you from the depôts on all rivers.

On the 1st November all logs marked O, that had not been bought by the Railway, would then be available for other purchasers, and all fresh timber would be marked with the letter N, and notices and statements would be sent as before indicated. It will be necessary to mark the fresh timber a few days before the close of the month.

Should the Railway Officers in any month not avail themselves of the opportunity offered them, they would, as regards the timber bearing the mark of that month, be in the same position as other purchasers.

13. When any timber is selected by the Railway Officers, each log should at once be marked by a current number, and two cross-lines drawn across the mark of the month, and its number, class, and cubic contents should be entered on a statement of measurements which should be signed by the Depôt Officer, and on the back of which the Railway Officer should enter his receipt. There should be no appeal against the measurement of the Depôt Officer, but he would, as a matter of course, before making his entries, consider any objections which the Railway Officer might raise on the spot. The entries once made, there should be no further question on the matter.

14. A similar practice should be introduced for the Indents of all other purchasers. The present system of accepting an Indent, and then leaving it to the choice of the purchaser when he will come to select his timber, must, in my opinion, be made to cease at once; and I would, with regard to the heaviest Indent, that of Messrs. Brassey and Co., suggest your causing similar notices and statements of all timber on hand at the different depôts to be prepared on an early date and sent to them with the intimation that the timber will remain at their disposal for a reasonable time, say one month, and that, if not taken and paid for within that time, the cubic contents of the timber thus offered to them will be struck off their Indent.

15. Should it not be found practicable to comply with all previous Indents before the 1st October next, these Indents would, after that date, be on the same footing as those of the Northern Railway; the monthly notices would be sent to all parties concerned, whom you may consider entitled to precedence, and the first comers during the month would then have the first refusal of the timber. It would, however, as suggested above, be very convenient if Messrs. Brassey and Co. would consent, after the 1st October next, to take their timber at the Beeas and not at the Chenab Depôt.

The system here sketched may require to be modified in details according to the peculiar circumstances of each river, it should be embodied in a set of rules for each depôt, and these should be observed with strict precision.

16. It is evident that the system cannot be worked unless you have a responsible officer at each depôt. I understand that trustworthy Assistants are now at the Nowshera, Madhopoor, and Wuzeerabad Depôts. I would suggest that you should lose no time in making suitable provision for the Jhelum Depôt. The officer in charge of that division will have more work in the forests than he can do, and he cannot possibly look after the depôt at the same time. It is also apparent that, if the present proposals of extending

operations on the Chenab and Ravee are to be carried out properly, none of the officers on these rivers can, for the next few years to come, be spared for the Jhelum Division.

17. In conclusion, I would offer the following suggestions regarding the price to be paid by the Railway for the timber which they may take from your depôts. For Cheer and other Pines, two rates might be fixed:—4 annas per cubic foot for short logs 9 feet and 10 feet in length, and 8 annas for all the rest. This would refer to good pieces only that may be used as timber; fire-wood would be sold at 2½ annas per cubic foot.

For Deodar, I understand that the following are the selling rates at present per cubic foot:—

	10′ to 16′	16′ to 20′	Above 20′	For picked logs.
Beeas	14 to 16 annas	Rs. 1-1 to 1-4	Rs. 1-8 to 3	50 per cent. in addition to these rates.
Ravee	10 to 14 „	„ 1-0 to 1-4 „	Do.	
Chenab	10 to 1-2 „	„ 1-2 to 1-10 „	2 to 3 Rs.	

These rates are subject to alteration from time to time, and they are sure to rise within the three years in question.

18. Considering this, and that the logs will be picked by the Railway, and that for three years their requirements are to take precedence of those of other purchasers, the following rates appear to me fair and equitable, and they should in this case be the same on all rivers:—

		Rs.	As.
I Class	... 8½′ to 10′ ...	0	12
II „	... 10′ „ 17′ ...	1	4
III „	... 17′ „ 20′ ...	1	12
IV „	... above 20′ ...	3	0

These rates as well as the classification proposed, I beg you will regard as suggestions only, regarding which you should solicit the specific instructions of the Punjab Government; also regarding the mode of payment or adjustment of the amount by the Railway. Arrangements should, I think, be made so as to secure the adjustment being effected at once after the receipts are granted by the Railway Officer as suggested above.

19. I have submitted a copy of this letter to the Punjab Government, and would beg that you will, with the permission of that Government, furnish me with regular monthly reports on the progress of the operations and measures proposed in this letter.

These reports should give an account of the timber received during the month on the different rivers, that offered to purchasers at the commencement, and taken by them during the month, and I should specially desire to be informed of the arrangements that you may make with Messrs. Brassey and Co. for the completion of their Indent, and the date by which you expect to complete the same.

No. 1123 R, dated 12th August, 1869.

From—The Government of India, P. W. DEPT.,
To—The Joint Secy. to the Govt. of the Punjab, in the P. W. Dept. (Railway).

Referring to the Notes of conversation between the Secretary in this Department and Mr. Lee Smith, dated 22nd June and 6th July 1869, I am directed to forward, for information and early report on points calling for further

consideration, and orders, after communication with Mr. Lee Smith and the Forest Department, copy of a Note dated 22nd July, by Mr. Brandis, Inspector General of Forests, and of two letters* addressed by him to the Officiating Conservator of Forests, Punjab, relating to the supply of timber, for sleepers, &c., for the Punjab Northern Railway.

* No. 148, dated 21st July 1869.
„ 151, „ 22nd „ „

2. From the Note it appears that the probable supply of Deodar sleepers from the State Forests will be—

	Sleepers.
In 1869	29,000
„ 1870	86,000
„ 1871	1,01,000

or rather more than one-half the total number required up to Pindee, including a liberal margin for sidings. This supply will be sufficient for the following lengths of line:—

	Miles.
1869	15
1870	43
1871	51
TOTAL ...	109

or including sidings, for about 96 miles. This will scarcely carry the line to Jhelum, and the sleepers for that section should be forthcoming in all 1870.

3. It will be observed, however, that Mr. Brandis considers that a much larger out-turn than the above may very possibly be obtained from the logs expected to be got down, and there would seem to be no doubt that by adopting, to some extent, a larger number of sleepers of smaller scantling than has been fixed as the standard rather than cutting the wood wastefully, and by using blocks or timber pressure plates, tied together by iron or wood, also by using longitudinal sleepers to a partial extent, the quantity of timber available may be made to go much further.

4. Some assistance may also be obtained by the experimental use on 10 or even 20 miles of line of "Cheer" sleepers, but it will be necessary to saturate them with chloride of zinc or sulphate of copper. Creosote is out of the question from its great cost and inconvenient form. The Government of India has desired for many years past that experiments should be made with *Cheer* saturated with preservative solution, and attach much importance to their being now made without loss of time.

5. But with all these supplementary means, it is evident that other sources must be resorted to for the full amount of timber required, and it is very desirable that the results of intercommunication on this subject between the Conservator and Chief Engineer, as to the probability of Deodar being procurable from other sources than the Forest Department, should be placed before the Government as soon as possible. It is also for consideration and enquiry what additional supply can be obtained from Cashmere.

6. The supply of timber being very limited, it must be carefully economized, and this should be strongly impressed on the Chief Engineer. If a narrow gauge line to the Salt-works at Pindadun Khan be carried out, the lighter sleepers and scantlings of timber which may be left over in converting the logs may be brought into use on it with advantage and economy.

No. 1124 R, dated 12th August, 1869.

From—The Government of India, P. W. DEPT.,
To—The Secy. to the Govt. of the Punjab, in the P. W. Dept. (Forest).

Referring to the letters marginally noted, addressed by the Inspector General of Forests to the Officiating Conservator of Forests, Punjab, copies of which have been submitted direct to the Lieutenant Governor, I am desired to attach copy of a

No. 148, dated 21st July 1869.
„ 151, „ 22nd „ „

communication this day addressed to the Joint Secretary in the Railway Branch, and of the Note by Mr Brandis referred to in it and to state that the supply of sleepers for the Northern Railway must be regarded as the first duty of the Punjab Forest Department for the next few years so far as is consistent with existing engagements With the extension of the Punjab Railway southwards to Sukkur, there need be no apprehension of the supply of timber from the Punjab forests being in excess of the demand Immediate and most careful attention should, therefore, be given to this matter by the local authorities, and the Government of India will be prepared to give all needful help on receipt of the proposals of the Forest Department approved by the Lieutenant Governor

2 It will be seen from the letter addressed to the Joint Secretary, in the Railway Branch, that the urgent need of exercising the greatest economy in the application of timber on the Northern Railway has been strongly dwelt upon but with every economy that it may be possible to practice, it will probably be necessary to cut more freely than otherwise would be desirable

3 Economy may also be practised in other directions, and in view of this, the use of Deodar for internal work should be limited in every possible way by Public Works Officers Copy of this letter should accordingly be communicated to the Public Works Department for information and guidance

4 The question of price to be charged to the *Railway* Department by the Forest Department, is not of serious importance as the money will go into the Government Forest receipts All that is necessary is, that a fair price should be settled upon, all things considered

5 Particular attention is requested to para 5 of my letter to the Railway Department, and to the importance of the Forest Department and its officers promptly and vigorously co operating with the Railway Officers in procuring wood from private dealers

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No 524S, dated 21st September 1869

From—Lieut Col H Drummond, R E, *Joint Secy to the Govt of Punjab in the P W Dept Railway Branch*

To—The Secretary to the Government of India Public Works Department

I am directed to forward, for the information of the Government of India, copy of a letter No 512 S, dated the 19th September 1869, to the address of the Chief Engineer, Punjab Northern (State) Railway, with copy of its accompanying Note, dated 18th idem, by the Consulting Engineer to this Government on Mr Lee Smith's estimate for the line from Lahore to Jhelum, with the exception of the bridges over the Rivers Ravee, Chenab, and Jhelum, with the remark that the revision ordered by this Government will delay the departure of the Chief Engineer for two or three days and that he will arrive at Simla on the 27th, instead of the 25th September, as previously reported

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No 512 S dated 19th September 1869

From—The Joint Secy to the Government of Punjab P W Dept Railway Branch

To—The Chief Engineer, Punjab Northern (State) Railway

I am directed by the Lieutenant Governor to request that you will revise the estimate of the line from Lahore to Jhelum, forwarded with your letter No 54 S, dated 16th instant, after perusing the accompanying remarks by the Consulting Engineer to this Government

2 The Lieutenant Governor considers it essential that the cost of the line on the length from Lahore to Jhelum should not be allowed to exceed £5,000 per mile, exclusive of the cost of the three large bridges and approaches over the Rivers Ravee, Chenab, and Jhelum He is of opinion that it will not do to trust that the limit of £10,000 per mile for the line complete which has been fixed by the Supreme Government will not be overstepped, when the cost of

the large bridges just mentioned has been distributed over the length of line from Lahore to Rawul Pindee, for it is not safe to anticipate that the cost per mile of the line from Jhelum to Rawul Pindee will not be considerably greater than that of the line up to Jhelum

3 The estimate for rolling stock and stations, included in the revised estimate received with your No 55S of the 18th instant, is approved, and should be entered in the Estimate now called for

4 With reference to para 6 of your letter No 54S, I am directed to suggest that a section intermediate between the two proposed would probably be the most suitable and the most economical The removal of the road metal from the one side to the other is not absolutely necessary, and the rate assumed for its removal and re laying is excessive I am to add if by the adoption of the modified section suggested in this para, you can avoid interfering with the road metal at all it will be desirable to do so

5 The plans and papers received with your No 54S are returned

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Copy of a Note by Consulting Engineer to Government Punjab on letter No 54S dated 16th September 1869 from the Chief Engineer Punjab Northern (State) Railway, forwarding Estimate of the line from Lahore to Jhelum, with the exception of the bridges over the Rivers Ravee Chenab and Jhelum

The following is an abstract of the Estimate for 98½ miles —*(See Column 1 of Table at page 45)*

2 It will be seen at once that the heaviest items of expenditure are, earth work, ballast, timber, permanent way, laying road, and lead of materials

3 It will be observed that in this estimate, no provision is made for quarters either permanent or temporary, for subordinate staff or for buildings of any kind whatever for passengers goods, rolling stock and stores at any of the stations The purchase of land is not included This may be expected to be a small item, yet it should not be left out of the calculation In fact it has been noted that the cost of land is invariably to be entered in the estimate Telegraph and rolling stock have not been estimated for and fencing for only 9½ miles

It may be noted also that the cost of engineering supervision, past and future, and of previous surveys by Mr Lee Smith and Mr LeMesurier, are not included in the estimate And that the bridges and culverts and generally the metalled gaps of the Grand Trunk Road are to be adopted for the Railway instead of constructing new bridges and culverts And yet with all these omissions and deductions, and leaving out of the calculations the probable expenditure on the three large bridges and approaches to them, in all 3½ miles in length, the estimated cost of the line is nearly £7,000 per mile

4 The above are facts, and as the cost of the big bridges and approaches will probably not be less than £500,000, the conclusion appear inevitable that the estimate submitted by the Chief Engineer must be considerably reduced

5 I examined the estimate and plans yesterday with Mr Lee Smith, and I probably cannot do better than remark upon each item of the former, in order to aid Government to the issue of such orders as may be thought necessary

6 "*Earth-work.*"—The first and second rates may be reduced to 4 and 5 per hundred cubic feet, the other four rates may stand

"*Ballast*'—The rates for sand, kunkur, and broken stone are high, and as the item of ballast is a very heavy one in this estimate, it is of consequence to reduce it as much as possible I think this may be done in two ways—

1*st*, by limiting the depth of the ballast to 18 inches, instead of 21 inches, as proposed by the Chief Engineer taking the 3 inches from the bottom of the section, and

2*ndly*, by using for ballast ¾th sand and ¼th kunkur stone or burnt clay. The whole country to an unknown depth under the surface consists of layers of clay and sand with an occasional pan here and there of

kunkur. I have not the least doubt, therefore, but that sand suitable for ballast will be found everywhere along the line at an inconsiderable depth under ground, whence it may be excavated and laid on the line at a cost not exceeding Rs. 2 per hundred cubic feet. The average rate for the other kinds of ballast may be assumed at Rs. 6 per hundred cubic feet.

Taking the quantities entered in the estimate, and calculating as above for sand, &c., the total cost of ballast will be under Rs. 3,50,000, and the saving effected will be Rs. 6,50,000. The saving will, of course, be still greater if the quantity of ballast is reduced as proposed.

"*Road Metalling*" includes metalled platforms at stations. The first two rates may be reduced to 8 each, and the three last may stand.

"*Brick-work.*"—The rates, though high, may stand. The "ornamental" which is intended to be chiefly boundary walls at junction with Punjab Railway at Lahore may be admitted, or something less expensive in the way of a fence be substituted.

"*Concrete.*"—The rate may be reduced at 15 per hundred cubic feet, and the quantity I think by one-half. There seems to be a clerical error in this item for Rs. 6,441, should be 64,414.

"*Masonry.*"—The rates for rubble coursed and ashlar may be admitted.

"*Timber.*"—An average rate of Rs. 3 per cubic foot ought, I think, to be amply sufficient, and doors, hinges and locks included ought not to exceed Re. 1-8 per superficial foot.

"*Wrought Iron.*"—The rates are admissible.

"*Fencing.*"—The rate for wire fencing may be admitted, and as the post and rail fencing is estimated to cost five times as much as the former, I would recommend either the adoption of wire fencing or a mud wall near villages.

"*Flood gap openings.*"—The first rate may be reduced by decreasing the width of concrete under rails, the second and third rates may be accepted. I beg particularly to invite the attention of the Government to the plan proposed by Mr. Lee Smith of carrying the rail on cast-iron standards at Rs. 16 per lineal foot. It promises to be successful and at a moderate cost.

"*Level Crossings.*"—As the whole line with the exception of 9½ miles is proposed to be unfenced, I do not see the use of giving gate posts, booms, &c., and think they may be struck out altogether. "Signals" and "Points and Crossings" may be commented on together; the following table shows how they are to be disposed:—

Stations.	Miles.	Main.	Distant.	Bridge.	Points and Crossings.	
Lahore	...	2	1	...	3	
Shahdera ...	3½	1	1			
Moreedhee ...	17	1	...	...	3	
Kamokee ...	29	1	...	...	3	
Goojranwalla ...	41	1	2	...	6	
Wuzeerabad ..	61	1	2	...	6	
Chenab (Khotata) ...	66	...	1	...	2	
Goojrat	71	1	2	...	6	
Kharai	92	1	...	...	2	
Jhelum (left bank) ...	101	1	1	...	12	Jhelum Terminus.
5 L. C. Bridges ...	...	5				
Bhunber (Mudder) ...	...	...	...	2		
Cramways ...	...	...	...	...	6	
Total ...	...	15	10	2		

"*Water Tanks.*"—A cheaper description might be used, but I would recommend the sanction of those estimated and of the wells to fill them. The quality of the water at each place should be ascertained before the Chief Engineer commits himself to the construction of wells and tanks.

"*Ash-pits*" may be admitted.

"*Turntables.*"—Two of them may be admitted.

"*Permanent Way*".—The first seven rates may be admitted. Unless the English and freight prices rise, some saving, I think, may be expected. The rate for sleepers appear to me to be preposterously high. Deodar sleepers 10′×10″×5 are now being bought by the contractor of the Delhi Railway at Rs. 4 each. It seems altogether out of the question therefore that the sleepers for the State Railway which are to be 9′×9″×4½ should cost Rs. 9-4 each. Both that rate and the rate for longitudinal sleepers should, I think, be reduced to one-half at least. The saving would be the not inconsiderable sum of Rs. 9,60,000, or nearly £ 1,000 per mile in the whole distance from Lahore to Jhelum.

"*Iron Road, Mr. Coates'*."—This has formed the subject of a separate communication to the Government of India, and orders, no doubt, will be issued thereon.

"*Points and Crossings.*"—See Ante.

"*Laying Road*" includes also maintenance. I think the rate may be reduced to Re. 1 per yard.

"*Laying Points and Crossings.*"—An addition of 5 per cent. for sidings may be admitted.

"*Lead of Materials.*"—The rate appears to me to be high. It should not, I think, be more than 2 annas per ton per mile.

7. There is not time to work out here, the result of the above proposed reduction, and the omission is of less consequence, as the Supreme Government may not approve of all the foregoing criticisms. But if the suggestions made on this note are entirely approved and adopted, the effect would be to reduce the estimate, I think, to about £ 5,000 per mile, which should be the maximum admissible, *minus* the three large bridges and approaches, and if the cost of the line complete is not to exceed £ 10,000 per mile.

8. I beg particularly to draw the attention of Government to the proposed manner of dealing with the Ravee crossing as shown in Drawing No. 3. I am inclined to recommend it for sanction. The length of the protection bund appears at first sight to be excessive, but it will be observed that it sets off at a good point and passes over very favourable ground, and its total estimated cost, *viz.*, Rs. 70,317, is not great.

9. The drainage of the country is passed across the Grand Trunk Road, thus, first, under timber viaducts; secondly, under brick-work and masonry bridges and culverts; and, thirdly, over metalled gaps left in the road. The Chief Engineer proposes to adopt the first for the railway by adding additional timber to strengthen them both as piers and in the superstructure.

At the Bagh Bucha Nullah I should prefer to build up the piers and put on them wrought-iron girders to carry the rails.

In the second he proposes to lengthen and build up the abutments and piers, and place iron girders on them, reducing the width of the road bridge from 24 to 18 feet. The third he proposes to cross in three ways—first, by merely laying the rail on longitudinal sleepers, bedded on a block of concrete; second, by carrying the rail on cast-iron piers about 2 feet high; and, thirdly, by wrought-iron girders on screw piles; the last only where the depth of water passing through the gap is too great to admit of the adoption of either of the two previous methods.

No. 527 S, dated 23rd September 1869.

From—LIEUT.-COLONEL H. DRUMMOND, R. E., *Joint Secy. to Govt. of Punjab, in the P. W. Dept., Railway Branch,*

To—*The Secretary to the Government of India*, P. W. DEPT.

In transmitting papers in original as per margin, I am directed to enclose herewith copy of a note by the Consulting Engineer to this Government on the designs submitted by Mr. Lee Smith for the bridges over the Rivers Ravee, Chenab, and Jhelum.

Docket No. 57 S, dated 21st September 1869, from Chief Engineer, Punjab, Northern (State) Railway.
1 Abstract of Estimates.
5 Estimates.
1 Detail reference sheets.

2. I am to state that the Lieutenant Governor concurs in preferring Design No. 2, as No. 1 appears to be too narrow to admit of carts passing through the girder, and as No. 5 contains but a single roadway which in a bridge as that over the Chenab 1½ miles long would, His Honor thinks, not be unattended with danger.

3. The drawings, eight in number, and one tracing, have been returned to the Chief Engineer who proceeded this morning to Simla.

Dated Murree, the 22nd September 1869.

Note by the Consulting Engineer to Government of Punjab on Docket No. 57 S, dated 21st September 1869, from Chief Engineer, Punjab, Northern State Railway, forwarding estimates and plans of proposed bridges over the Rivers Ravee, Chenab, and Jhelum.

The Chief Engineer has not submitted plans and sections of the rivers to be bridged, showing highest and lowest water-lines, and without these plans and sections it is impossible to judge whether the waterways proposed to be given are suitable or not. The Chief Engineer has informed me that he thinks the waterway required for the Ravee may be considered as settled, but that the estimates for the Chenab and Jhelum do not profess to be more than approximations, that a great mass of facts regarding velocity, sections, and boring have been carefully noted this season at both the rivers, that he expects to gather up these facts at Jhelum and Goojrat on his way to Simla, and from them he hopes to be able to make some reduction in the amount of waterway which he has provided in the estimate now submitted. The drawings received being the originals, and no copies having been as yet taken of them, they must be returned to Mr. Lee Smith to-day in order that he may take them with him to Simla, for which place he is to start to-morrow morning.

2. Approximately the waterways allowed in these estimates are—for the Ravee 2,950, Chenab, including Pulkoo, 8,000, Jhelum 3,800, or a total for the three rivers of 14,750 feet. The length of the bridges is of course in excess of the waterway, and for the three rivers amounts to 15,840 feet. Taking the rough and ready way of estimating the cost of these bridges, *viz.*, at £40 per lineal foot, we obtain from the above data that the aggregate cost of the three bridges will be about £633,600, which it will be seen is not a bad approximation to the estimated cost (after working out details) of systems Nos. 1, 2, and 5 proposed by Mr. Lee Smith. On the subject of the waterways required for the Chenab and Jhelum, I beg to refer Government to Appendix No. I of Mr. LeMesurier's Report at page 635 of Proceedings for 1868. I would strongly deprecate any attempt to reduce the cost of these bridges by diminishing the waterway below that which may be deliberately recommended by Mr. Lee Smith after further consideration of the facts which have been collected this season.

3. The Chief Engineer has proposed five different plans of bridges, varying as to cost from £595,823 to £889,695, which he calls "system" Nos. 1 to 5, and it will be convenient to adopt the same word. Mr. Lee Smith does not say which system he recommends, but apparently prefers to allow the decision to depend on the result of discussion with Government and its officers. There is not time for me to go into close criticism of the plans and estimates,

but when Government has selected one of the designs, I will examine the calculations for weight and strength of the ironwork with the Chief Engineer. Judging from the weights, &c., shown in these estimates, I should say that it is not likely that any serious error has been made in the calculations of strains, &c.

4. Of the five designs submitted, the mere cost alone of Nos. 3 and 4, as they are, preclude them from consideration. It may, however, be worth while to calculate, if it has not already been done, whether a level crossing girder of span from 80 to 100 feet road and rail carried on the lower boom, or a girder like that of No. 2M, might not with economy and safety be carried on piers consisting of three screw piles. Of the remaining three designs, No. 2 although the most expensive will be the most generally useful, and I think that Government cannot do better than decide upon adopting system No. 2. It is in fact reverting to the choice of that form of girder which was recommended both by the Local and Supreme Governments last year. In my opinion it is the simplest, safest, and most useful system of all. A roadway 10×10 through the girder will be serviceable for almost every kind of goods traffic except a laden elephant. And although the cost of system No. 2 is estimated to be about £50,000 more than that of No. 5, *i. e.*, over the three bridges, yet it should not be overlooked that piers of precisely the same dimensions have been provided for both girders, although the width from centre to centre of No. 2 is only 11½ feet, while that of No. 5 is 17 feet 2 inches. Therefore it would seem either that both in the piers and abutments of the former some saving can be effected, or that the piers and abutments of the latter have been underestimated.

A pair of Warren girders for a single line with the road carried on top span 100 feet, weighs 32 tons.
Ditto, road on bottom, weighs 41 tons.

5. I think great credit is due to Mr. Lee Smith for the careful and complete manner in which these estimates and plans have been prepared by him in little more than two months, and as he has calculated out the size and section of every piece of ironwork, I am of opinion that the duty of getting out the working drawings may, if the Government deem fit, be safely entrusted to him, and should be entrusted to him if he can show that there will be saving of time and expense thereby.

No. 537S, dated 25th September 1869.

From—LIEUT.-COLONEL H. DRUMMOND, R. E., *Joint Secy. to the Govt. of Punjab, in the P. W. D., Railway Branch,*

To—*The Secretary to the Government of India*, P. W. DEPT.

I am directed to forward herewith copies of letters Nos. 54 S and 55 S, dated 16th and 18th instant, and of docket No. 61 S, dated 23rd idem, from the Chief Engineer, Punjab Northern (State) Railway, and the estimates in original received with the two last communications, *viz.*, those dated 18th and 23rd, and to remark as follows.

2. The revised estimates last submitted amounts, it will be seen, to Rs. 5,007,158 for 98½ miles of single line laid on the Grand Trunk road from Lahore to Jhelum with the exception of the portion passing across the valley of the Ravee at Lahore, and of the portion passing through the low range of hills on the left bank of the Jhelum.

At these places the line of railway is obliged to leave the Grand Trunk Road. The estimate also provides for 3½ miles of permanent-way required for the bridges and approaches over the Rivers Ravee, Chenab, and Jhelum.

Deducting therefore Rs. 1,07,614 per 3½ miles of permanent-way, the estimated cost per mile is Rs. 49,741 per 98½ miles of unquestionably the easiest section, after excluding the three large bridges between Lahore and Peshawur.

Adding Rs. 7,974 per mile for "rolling-stock" and "stations," this section is estimated to cost Rs. 57,715 or say £5,771 per mile.

3. I am desired by the Lieutenant Governor to state that, in the opinion of this Government, the estimate ought to be still further reduced; so that including stations and rolling-stock, the cost shall not exceed £5,000 per mile, and I am to add that it is hoped that letter to the address of the Chief Engi-

neer, No. 512 S, dated 19th instant, and its annexure note by the Consulting Engineer to this Government, forwarded to the Supreme Government with letter No. 524 S, dated 21st instant, will indicate the items of the estimate which are still capable of being further reduced.

I am also to suggest that "Turntables" may be omitted altogether, if no objection is made to the locomotives running one way tender first. His Honor thinks there is objection owing to the line being unfenced and on the Grand Trunk Road.

4. The Chief Engineer has not shown the saving effected by adopting for the rail the embankment of the road, and by making the bridges of the latter available for the former. And a comparative estimate seems hardly necessary, for, once admitted that a strong and efficient fence between the road and railway is not necessary, it is certain that there must be some saving of first expenditure by using the road as a substratum for the railway. I am to observe, however, that the Hon'ble the Lieutenant Governor of these Provinces, and the Consulting Engineer to this Government, are not reconciled to the project of an unfenced railway on the high road, and even now at the last hour His Honor would urge that an experiment, which seems to him to be so fraught with danger to life on both the road and the rail, be limited to a section, say from Lahore to Goojranwalla, until actual experience has shown that both descriptions of traffic may proceed side by side on the same embankment without any serious risk.

Comparative Abstract of Estimates of the cost of a single line from Lahore to Jhelum on the Grand Trunk Road, exclusive of the bridges over the Rivers Ravee, Chenab, and Jhelum.

	Estimate submitted with Chief Engineer's No. 54 S of 16th Sept. 1869.	Estimate submitted with Chief Engineer's No. 55 S of 18th Sept. 1869.	Estimate submitted with Chief Engineer's No. 61 S of 23rd Sept. 1869.
	Rs.	Rs.	Rs.
Earthwork...	2,61,185	2,61,185	2,28,558
Ballast	10,43,309	10,43,309	4,10,737
Road Metalling	84,346	84,346	61,560
Brickwork...	59,841	59,814	59,814
Concrete	6,441	64,414	37,142
Masonry	67,062	67,062	67,062
Timber	1,01,509	1,01,509	72,891
Wrought-iron	46,805	46,805	46,805
Fencing	53,502	53,502	16,667
Flood openings	84,507	84,506	80,854
Level crossings	36,000	36,000	28,500
Signals	13,550	15,870	15,870
Water Tanks	46,070	41,463	41,463
Ash-pits	12,330	11,097	11,097
Turntables...	35,660	35,660	17,830
Permanent-way	39,10,957	39,10,957	31,36,266
Ditto Mr. Crates	58,406	58,406	58,406
Points and Crossings	12,250	12,250	12,250
Laying Road	3,88,960	3,88,960	1,94,480
Laying Points and Crossings	1,225	1,225	1,225
Sidings	98,779	98,779	98,779
Lead of Materials	2,00,575	2,00,575	2,00,575
	66,23,243	66,77,697	48,98,835
LESS ...	1,41,409	1,41,409	1,30,113
	64,81,834	65,36,288	47,68,722
ADD 5 PER CENT. ...	3,24,091	3,26,814	2,38,436
TOTAL ...	68,05,926	68,63,102	50,07,158

No. 55S, dated 18th September, 1869.

From—The Chief Engineer, Punjab Northern (State) Railway,
To—The Joint Secy. to Govt., Punjab, in the P. W. Dept., Railway Branch.

In continuation of my No. 54 S of 16th instant, I have the honor to enclose revised estimate of the line from Lahore to Jhelum, with exception of the Ravee, Chenab, and Jhelum bridges. The total distance is 102 miles, from which $3\frac{1}{2}$ have been deducted for these three bridges, making the length estimated for $98\frac{1}{2}$ miles.

2. The permanent-way has been estimated for the whole length, *viz.*, 102 miles.

3. I have endeavoured to render this estimate more complete than the one submitted on 16th instant, in that I have included the items of stations and rolling-stock.

4. As regards the first, I have no definite orders from Government on the subject, further than that the most rigid economy was to be studied. I have, therefore, endeavoured so to frame this estimate that the better class of dwelling houses required for the engineering staff shall be so designed and arranged as to answer pretty fairly for stations on completion of the works.

5. I have attached a detailed statement of the rolling-stock which I think would suffice for working a moderate traffic.

No. 54 S, dated 16th September, 1869.

From—The Chief Engineer, Punjab Northern (State) Railway,
To—The Joint Secy. to Govt., Punjab, in the P. W. Dept., Railway Branch.

I have the honor to enclose estimate of cost of the line from the Punjab Railway Terminus to the station of Jhelum, with exception of the Ravee, Chenab, and Jhelum Bridges which will follow in a few days.

2. This estimate is accompanied by the drawings and detail quantities from which it has been compiled, whereof a list is attached.

3. The drawings and detail quantities are the original documents with exception of those belonging to the Ravee Division; I regret that it has not been in my power to make copies of the others, but beg they may be returned to me for the purpose.

4. The Grand Trunk Road Bridges, which are suitable to such a purpose, have been estimated for as "Level Crossing Bridges" at the cost of additional timbers required for strength.

5. This season's observations of the floods in the metalled gaps have proved that in five of them the water has exceeded 12 inches in depth, and at these places I have estimated for raising the rails beyond the reach of danger. In one of these gaps, a branch of the Bhimbur, the water ran 2 feet 9 inches deep, and for this reason I have estimated for a light screw pile viaduct, as per tracing sent in original over a length of 600 lineal feet at a cost of Rs. 72 per lineal foot. In the other four, of the respective lengths of 600, 190, 170 and 120 feet, the water did not exceed 1 foot 6 inches in depth, and for them I have estimated at Rs. 16 per lineal foot, for raising the rails on cast iron standards fixed to longitudinal timbers, as per tracing submitted.

6. I also beg to attach a drawing numbered 50 showing two cross sections of bank, lettered respectively A and B, with an alternative estimate. The first A shows cross section of trunk road with the railway ballast laid upon the surface in accordance with the orders of Government. The second B is the same cross section of road, with the railway ballast sunk from 9 inches to 1 foot below surface of road. By this means a greater width of base is gained. The trunk road is less encroached upon, the rails are still well above the surface

of road, and therefore to judge from this season's floods, perfectly safe and a saving may be looked for of nearly two lakhs of Rupees.

P. S.—The price of timber sleepers is so enormous as to make the cost of permanent-way nearly £ 4,000 per mile.

No. 1659R, dated 22nd October, 1869.

From—The Government of India, P. W. DEPT.,

To—The Joint Secy. to the Govt. of Punjab, in the P. W. Dept., Railway Branch.

I am directed to acknowledge the receipt of your letters noted in the margin, forwarding estimates and other documents connected with the construction of the Punjab Northern (State) Railway between Lahore and Jhelum.

No. 524S, dated 21st September 1869.
„ 527S, „ 23rd „ „
„ 537S, „ 25th „ „

2. In reply I am desired to forward to you the minutes of two meetings held by direction of the Government of India to consider the designs and estimates for this line. These minutes have received the approval of the Governor General in Council, who is pleased to accord sanction to the abstract estimate forwarded herewith, amounting to Rs. 24,70,766, which is arrived at after making the modifications detailed in the minutes and fully explained by the notes attached to it. A further sanction is granted to the extent of Rs. 3,00,000 to provide for the preparation of materials for the piers and abutments of the bridges over the Ravee, Chenab, and Jhelum.

3. No time should be lost in taking all needful action to give effect to the conclusions recorded in the minutes of meeting, and in the preparation of detailed estimates in accordance with the principles of design which have now received the approval of the Government of India. If the amount of any head of these estimates is not more than 10 per cent. in excess of the approximate estimate now sanctioned, it may be finally passed by the Local Government, an abstract of such local sanctions being submitted for the information of the Governor General in Council; but any such items as show a greater estimated excess than 10 per cent. should be referred to the Government of India for sanction.

4. The estimates, drawings, and other connected papers have been returned in original to Mr. Lee Smith.

5. The Governor General in Council trusts that the works will now be promptly commenced along the whole line to Jhelum, and that all possible progress will be made, consistently with the requirements of thoroughly good workmanship and of careful economy. It is not the desire of the Government of India to force on the operations so as to lead to any extraordinary raising of prices; but so long as this point receives attention, the most active exertions may be made to secure the early completion of the line within the limits now dealt with.

6. This sanction has been entered as No. 3 P. N. R. of 1869-70 in the register of this Office.

Minutes of Meetings held on 13th and 14th October 1869 to consider documents forwarded under cover of—

Government of the Punjab, No. 524 S, dated 21st September 1869.
„ „ „ „ 527 S, „ 23rd „ „
„ „ „ „ 537 S, „ 25th „ „

PRESENT:

THE HON'BLE COLONEL R. STRACHEY, C. S. I., R. E., *Offg. Secy. to the Govt. of India.*
MAJOR WILLIAMS, R. E., *Deputy Secretary to the Government of India.*
MR. LEE SMITH, *Chief Engineer, Punjab Northern (State) Railway.*
MAJOR POLLARD, R. E.
LIEUTENANT PYE, R. E.

DESIGNS AND ESTIMATES FOR PUNJAB NORTHERN (STATE) RAILWAY.

Ravee Embankment.—This should be at least three feet above the level of the highest flood, and further enquiry should be made with reference to the height of the flood of 1856. For the present, no protective works need be made, and in view of this, the bank from Lahore to the Ravee Bridge should have a formation width of 30 feet with slopes of 3 to 1. An additional strip of land may be taken up on the up-stream side for planting at the foot of the slope. The back channel of the Ravee should be stopped, and no time should be lost in getting in the Lahore abutment of the bridge to preserve the end of the embankment from the effects of flood.

2. *Minor Arrangements.*—Enquiry should be made as to the necessity for maintaining any irrigation channels which may at present cross the site of the railway bank.

3. The expensive arrangements for a transit instrument at the sites of the bridges should be modified.

4. Gate-keepers' huts at other places than the three large bridges should be of the most inexpensive description.

5. Ordinary brickworks should be substituted for the ornamental work in the walls of the Lahore Station.

6. *Ballast.*—The original instructions as to laying ballast on the surface of the road should be adhered to. The adjoining four feet of metalling may be taken up and used as ballast, so that the width of metal to be maintained for the road will be only 12 feet.

7. Sand should be used for ballast wherever it is economically possible. About seven-tenths of the section of ballast may be of sand, where it is available, if topped with kunkur or brick.

8. *Fencing.*—Such fencing as is at present required may be of stone walling or of wire with wooden standards. For the present, fencing will only be put up near villages or frequented localities, and it must be left to time to prove the necessity of fencing of the rail from the road throughout, as recommended by the Punjab Government.

9. *Stations and Buildings.*—The intervals between the proposed stations at Goojranwalla and Wuzeerabad and those at Goojerat and Kharian seem excessive, and should be reconsidered.

10. More detailed proposals for station buildings and bungalows should be at once sent up. The general style of such buildings should be a range of quarters conveniently divided into units of accommodation, which would be available as dwellings while construction is going on, and afterwards as rooms of the station. Temporary buildings which will not be utilised when the line is open should be constructed with the greatest economy, and so as only to serve their present purpose. Other buildings to be used as dwellings or for station purposes only may have their foundations laid in lime mortar, the walls being of burnt brick, or stone when suitable, laid in mud. All buildings which will be in positions where they will be subject to the vibration of passing trains should be built with lime mortar, such as engine stables, goods sheds, &c.

11. *Khurian Range Diversion.*—The width of formation should be 16 feet in bank and 20 feet in cutting, as previously ordered. It is believed that the slopes in cutting may be reduced.

12. The proposed location of the line is accepted as satisfactory, it being left open to Major Pollard, in communication with Mr. Lee Smith, to point out any advantages that may be gained by adhering more closely to the existing road.

13. The designs of the culverts are generally approved; but the question of replacing them in heavy bank by open girders may be considered by Major Pollard in communication with Mr. Lee Smith.

BRIDGES.

14. *Alterations of timber bridges.*—The design for the Bhimber Bridge is approved, but if a permanent iron girder bridge for the railway can be made for, say, Rs. 80,000, it may be substituted for the proposed timber design estimated to cost Rs. 42,000. This will make the whole of the bridges permanent, and obviate the necessity for guarding the bridge with gates and signals, as must be done if it be used as a level crossing.

15. At the Bagh Bucha Bridge, and at Nos. 6, 7, 7A and 7B, at miles 7, 19, 20, 22, iron girders will be used, and the piers may be built up in masonry on one side to carry the girders, the remainder of the road being left for the cartway.

16. *Bridges with* 26 *feet roadway.*—No addition need be made to the width of these bridges, the least possible portion being taken for the rails and the rest left for the roadway.

17. *Bridges with* 18 *feet roadway.*—The centre line of railway should be carried straight over bridges of this class (and, if possible, this should be done in all cases), any necessary additions being made to the abutments and piers to carry the girders. If it should be found objectionable to place one rail on old and one on new work, the old may be pulled down, and re-built with the new. The width of road that is left will probably suffice for the traffic, but, if not, a suitable alteration may be made in the parapet on the off-side of the bridge.

18. *Arched culverts of* 10 *feet roadway.*—The least possible width of this road should be taken for the rails.

19. No planking save a single plank for a platelayer should be laid on the girders, which may be left open.

20. Any minor details of the bridges should be settled by the Local Government.

GAPS.

21. *Metalled Flush Gaps.*—The general design for these is approved. The amount of concrete under the rails may be reduced to an average of 10 cubic feet per foot forward, and the longitudinal sleepers need not be of larger section than 9″ × 4½″. The width of road metalling in the approaches should be taken at 12′ instead of 16′.

22. *Metalled Gaps with Iron Standards.*—The design for cast iron saddles to carry the rails over gaps, where the depth of water is, though small, too great for flush gaps, is generally approved. Screw bolts passing through the sleepers should be used instead of screws into the wood. For the present, however, only 500 feet of this kind of way should be sanctioned, which may be laid as an experiment on the three smaller of the four gaps proposed to be treated in this way. Ten feet of concrete per running foot of line may be allowed as an average quantity.

23. *Metalled Gaps with screw pile viaduct.*—The proposal to utilise the screw piles and girders already under supply from England for one gap of 600 feet is approved.

PERMANENT-WAY.

The whole length of line from Lahore to Jhelum is 102 miles. With an additional length of 5 per cent. for sidings, a little more than 107 miles of single line will be required. An indent has already been submitted to the Secretary of State for the supply of 100 miles of line and 7 miles of tramway and crane roads, so that no further indent appears to be required for this section of the railway. It will be for the Chief Engineer to submit further proposals, if necessary.

Carriage of Permanent-way Material.—As sleepers are delivered on the line at the three great rivers, they may be carted out, on the understanding that the minimum lead from each point is adhered to as closely as possible, as the expected supply at each river will admit. The distribution of the iron portion of the way should be considered by Major Pollard in communication with Mr. Lee Smith, and the system approved by the Local Government detailing the extent to which carting, and distribution telescopically, is proposed, should be reported to the Government of India. Until the rails, &c., for the whole line from the Ravee to the Chenab have reached the right bank of the Ravee, none of this material is to be carted forward to the banks of the Chenab.

The Ravee, Chenab, and Jhelum Bridges.—The modified rough designs of girders for these large bridges handed in by Mr. Lee Smith at Simla, which have parallel girders carrying a combined road and railway on the top and an inner footway below for use when trains are not passing, are generally accepted in substitution for the design before approved, but an addition may be made to the proposed width between the hand-rails and the rails to give room for a platelayer to stand, or bays may be made at intervals for that purpose, and the lower footway should be made strong enough for loaded horses, ponies, and horned cattle. Mr. Lee Smith's ultimate proposals for the span and design of girder should be submitted without delay. As soon as they are finally approved by the Local Government, working drawings should be made for transmission to the Secretary of State. It would appear so far as a judgment can yet be formed, that these three bridges will cost not less than £600,000.

Iron Cylinders.—Proposals for the utilization of the iron cylinders, which were ordered from England for the Ravee Bridge, should be brought forward at an early date.

Small Girders.—Indents for small girders should be sent in at once.

Sanction will be recommended to the estimates to the extent of Rs. 24,77,766, in addition to Rs. 3,00,000 for the preparation of materials for the bridges over the Ravee, Chenab, and Jhelum. An abstract of the different items, accompanied by a detailed explanatory note, is attached to these Minutes—

Abstract of recommendations for sanction.

			Rupees.
1.	Earthwork		1,58,000
2.	Ballast		4,10,737
3.	Road-metalling		26,780
4.	Fencing		16,667
5.	Bridges and culverts (exclusive of Ravee, Chenab, and Jhelum Bridges)		2,60,700
6.	Gaps, flush		1,13,550
7.	,, cast-iron standard		8,070
8.	,, screw pile		43,067
9.	Level crossings		28,500
10.	Signals		15,870
11.	Stations, buildings, and bungalows		50,000
12.	Watering arrangements		41,463
13.	Ashpits		11,097
		No.	
14.	Turntables	2	
		Tons. Cwts. Qrs. lbs.	
15.	Permanent-way—		
	Rails 1⅞ miles, and fish plates ...	187 4 1 7	23,121

		Tons. Cwts. Qrs. lbs.	Rupees.
16.	Pot sleepers, tie rod, gibs, and cotters	297 8 2 8	31,082
17.	Additional fish plates ...	7 17 3 24	1,461
18.	„ gibs and cotters ...	7 12 1 26	1,906
		Mds.	
19.	„ tie rods	... 102	837
		No.	
20.	Transverse wooden sleepers ...	1,98,000	10,64,250
		Cubic Feet.	
21.	Longitudinal sleepers and struts...	... 17,650	39,675
22.	Iron cross-ties for sleepers ...	... ...	718
		Tons.	
23.	Carting sleepers an average lead of 12 miles...	11,000	24,750
		Yards.	
24.	Laying road	... 194,480	97,240
		No.	
25.	Laying points and crossings ...	... 49	1,225
		TOTAL ...	24,70,776
A.	Piers and abutments of Ravee Bridge	... ...	1,00,000
B.	„ „ Chenab „	... ...	1,00,000
C.	„ „ Jhelum „	... ...	1,00,000
		TOTAL ...	3,00,000

The rates which have been assumed in considering these estimates, in accordance with revisions made by Mr. Lee Smith in conjunction with Major Pollard, are as follows :—

	Rs. A.	Cubic Feet.
Earthwork, for temporary purposes ...	... 4-8	per 1,000
„ in cutting, banks, &c. ...	... 5	„ 1,000
Cutting through old brickwork ...	... 2	„ 100
Ballast, sand or gravel	... 4	„ 100
„ kunkur	... 6-4	„ 100
„ broken stone	... 6	„ 100
„ burnt clay and old brick ...	... 6-8	„ 100
Road-metalling, kunkur	... 8-4	„ 100
„ broken stone	... 8	„ 100
„ brick	... 7-12	„ 100
„ breaking up and re-laying ...	... 2	„ Lineal Foot.
		Cubic Feet.
Brickwork	... 28	„ 100
Concrete	... 14-8	„ 100
Rubble masonry	... 24	„ 100
Timber under 17 feet	... 2-4	„ Cubic Foot.
„ over	... 3-9	„ „
Carriage per ton mile	... 0-3	
Laying permanent-way per yard of line ...	... 0-8	

The character of the estimates prevents sanction from being given under the headings shown in it, and the different charges are accordingly grouped under 25 heads. These items can, when sanctioned, be distributed by the Local Government under any other convenient heads in the final estimate, the correlation between the two beings clearly shown in the latter.

Sanction is also recommended to three sums for the preparation of materials for the piers and abutments of the bridges over the Ravee, Chenab, and Jhelum.

The sums recommended for sanction are only approximate estimates of probable cost, and are liable to revision upon due cause being shown.

Item 1.—*Earthwork.* The amount is reduced by the non-construction of protective works at the Ravee, and increased by the greater height and width of the bank at that river.

Item 2.—*Ballast.* The charge for ballast is recommended for sanction, but it will probably have to be modified according to the remarks in paragraphs 6 and 7 of the Minutes of Meetings of 13th and 14th October 1869.

Item 3.—*Road Metal.* This item, as now revised, excludes the cost of metalling in flush gaps and bridges.

Item 4.—*Fencing.* This is recommended for sanction, but the charge may probably be reduced.

Item 5.—*Bridges and Culverts.* This item is made up of Rs. 1,06,500 for the bridges of the Goojerat Division, Rs. 92,200 for the Goojranwalla Division, and Rs. 62,000 for the Kharián Pass diversion, and has been taken from the detailed estimates as modified by the rates, the omission of sleepers and planking, and the remarks in paragraphs 14 to 20 of the Minutes of the Meetings before mentioned. It includes Rs. 80,000 for the Bhimber Bridge (*vide* paragraph 14 of Minutes).

Item 6.—*Flush Gaps.* In this item and in Nos. 7 and 8, longitudinal sleepers of the dimensions laid down (9″ × 4½″), and cross struts, have been deducted, and charged to "permanent-way." Any further timber than this that the design may require, seems to be properly chargeable to the works, and is therefore included in these items. Item 6 is made up of Rs. 1,32,000 for the Goojranwalla Division and Rs. 19,740 for the Goojerat Division, less Rs. 38,190 for longitudinal sleepers and struts over the 27,160 lineal feet of flush gaps in the whole line. The estimate for the Goojerat Division is lumped together in a way that entirely precludes separation, and therefore the rate granted for the Goojranwalla Division is applied to its length to obtain the above-mentioned sum of Rs. 19,740. The gaps not allowed under Item 7 have been included in this item.

Item 7.—*Gaps with Cast-iron Standards.* This allows standards sufficient for 500 feet to bridge the 480 feet aggregate length of gap spanned in this way.

Item 8.—*Gaps with Screw-piles and Girders.* Provides 600 feet of screw-piling complete.

Item 9.—*Level-crossings.* Is passed provisionally, as it stands, as the Government of India is manifestly unable to judge of the precise necessity of the proposed gates. The Local Government will, however, have to take care that level-crossings are not needlessly constructed, or, on the other hand, omitted where safety requires that they should be placed. As it is not intended, at first at all events, to fence the line generally, the necessity for gates on crossings will probably only arise on the more important roads, or near villages or towns.

Item 10.—*Signals.* Passed, but is considered to be capable of reduction, in view of the rates adopted for timber which head these remarks.

Item 11.—*Stations and Bungalows.* Rs. 50,000 is here recommended for sanction that no time may be lost in the preparation of materials; but it is impossible to state from the estimates what the charge under this head will be, and no further amount can at present be passed. No time should be lost in the preparation of proper estimates.

Items 12 *and* 13.—*Watering and Ash-pits.* Passed, but the reduction in the rate for brickwork will also affect these works.

Item 14.—*Turntables.* An indent on the Secretary of State for these should be submitted.

Items 15 and 16.—*Permanent-way.* These cover the cost of 1⅞ miles of iron way belonging to Mr. Coates.

Items 17, 18, *and* 19.—*Fish-plates, Gibs and Tie-rods.* These provide for portions of the above length of way not included in Nos. 15 and 16, and that

can be procured in this country. Sanction to the purchase of the plant, if still required, has already been given.

Item 20.—*Sleepers, Transverse.* Provides for transverse timber sleepers, 1,980 to the mile, for 100 miles of way at Rs. 5-6 each. It is by no means certain that the rate will be so high as this, but the amount may be taken as an outside estimate.

Item 21.—*Sleepers, longitudinal.* Provides longitudinal sleepers and struts for 28,240 lineal feet of line in gaps, or $5\frac{3}{8}$ miles. Added to the foregoing items, this provides a total subway of $107\frac{1}{4}$ miles.

Item 22.—*Iron Cross-ties.* These are required in connection with the foregoing.

Item 23.—*Carting Sleepers.* The lead shown in the estimate appears to be correct. The weight is modified to suit the proposed kind of sleeper.

Item 24.—*Laying Road.* The length is that shown in the estimate, $110\frac{1}{2}$ miles. It is presumed that this allows for both temporary and permanent laying, as it is in excess of the whole length of way. The rate is eight annas a yard, which is considered to be sufficient.

Item 25.—*Laying Points and Crossings.* The number of points and crossings appears to be large, and the possibility of a reduction in the number should engage attention. An indent on England for 20 sets has already been submitted, and a further indent should be forwarded for more.

Items A, B and C.—These sums are to provide for the preparation of material for the piers and abutments of the three large bridges. When estimates are submitted for the design now approved, these items will be included under the proper heads.

No. 24 E—R, dated 25th October, 1869.

From—The Government of India, P. W. Dept.,

To—The Joint Secy. to the Govt. of the Punjab, in the P. W. Dept., Railway Branch.

In acknowledging the receipt of your letters marginally noted, I am directed to enclose a letter dated the 21st instant, received from Mr. Lee Smith, together with a proposed distribution of his Engineering staff, and to communicate the following provisional conclusions, which have been come to at an interview with that gentleman, for the information and approval of the Lieutenant Governor, and such further action to give practical effect to them as is called for, and notably for the submission of tabular statements for formal sanction in the Financial Department.

No. 471 S, dated 6th September 1869.
„ 474 S, „ 7th „ „
„ 506 S, „ 14th „ „
„ 560 S, „ 7th October „

2. At the meeting held at Simla on the 25th May 1869, it was settled that a Personal Assistant for correspondence and general business should be given to Mr. Lee Smith. The Government of India considers that such assistance is required, and it is left to the Punjab Government to make a recommendation for the immediate creation of the appointment if equally satisfied of its necessity. Mr. Lee Smith desires to nominate for the post a Mr. Robinson, whose services he has informed me may probably be obtained on a salary of Rs. 500 per mensem. The Punjab Government should enquire into Mr. Robinson's antecedents and qualifications, and make a definite recommendation as to salary.

3. Mr. Lee Smith has also asked for a professional Assistant, and has suggested the transfer from Bombay of Mr. Whiting, an Executive Engineer of the 3rd Grade, to fill the post. The Government of India acknowledge the necessity for such assistance, and the Bombay Government has been asked by telegraph whether Mr. Whiting's services can be spared, and if so, to order him to Lahore to report himself to Mr. Lee Smith.

4. These arrangements dispose of the subject-matter of your No. 471 S of the 6th September; but as the Chief Engineer should have a thoroughly efficient Chief Draughtsman, I am directed to add that the Government of India will be prepared to accept a recommendation from the Local Government to allow Mr. Lee Smith a Head Draughtsman on a salary of Rs. 300 per mensem.

5. The Distribution List of the Engineering Staff herewith forwarded is approved by the Government of India, so far as the proposed divisions and circles are concerned. There will be eight of the former, and three of the latter. It will be for the Chief Engineer to concert with the Local Government to detail the staff as may be most suitable. There need be no objection to the proposal to delegate to any one of the Superintending Engineers such special powers as Mr. Lee Smith may desire, provided the chain of responsibility be unbroken, and Mr. Lee Smith's proposal to keep a division immediately under his own orders may be agreed to. This disposes of your Nos. 505 S and 560 S.

6. The number of Assistant Engineers will be 17 in all, the number of Executive Engineers 12, including the professional Personal Assistant. One tabular statement should be submitted for the Chief Engineer, his Personal Assistant for general business, the Executives and Assistants. Of the last, the Secretary of State will be requested to appoint four, who may be employed for some time at Home in attending the shops where the iron-work for the large bridges is prepared, so as to make themselves acquainted with the details of the girders and of their erection. The remainder may be appointed, as their services are required, under the orders of the Lieutenant Governor, by transfers from the other branches of the Department in the Punjab, or from other Provinces, if they can be spared. The Government of India will be prepared to facilitate such transfers as may be proposed, so far as the interests of the public service generally will allow.

7. The strength of the Subordinate Staff to be allowed for construction on the 100 miles between Lahore and Jhelum, referred for orders in your No. 474 S, remains to be settled. The Governor General in Council has given this part of the subject careful consideration, and has come to the conclusion that the Chief Engineer's requirements have been under-estimated. Of the 55 men asked for by Mr. Lee Smith, 31 are required for special purposes. The remainder, 24 in number, may be considered as required for ordinary work, and of these there should be at least six experienced men for the large bridges, one for each bridge being a Sub-Engineer, 1st Grade. This reduces the number for distribution in the three bridges and two road divisions to only 18, which number, in the opinion of the Government of India, would be inadequate for efficient supervision and good progress, considering the magnitude of the works at the bridges, and the length of the road divisions. For the latter there should be 15 men as proposed by the Punjab Government; for the bridge divisions, the aggregate number proposed by Mr. Lee Smith may be accepted. This modification will involve the addition of 6 men, and make up the total number of subordinates for ordinary duties to 30. These should be distributed for sanction over the different ranks according to the rules in force in the Public Works Department, *i. e.*, there should be 12 Sub-Engineers and Supervisors and 18 Overseers.

8. It will not be possible to grade the men required for special purposes in strict accordance with the departmental system, but the scale of pay which it will be necessary to offer to secure the requisite qualifications, suggests that the scale may be partly worked to by including all of these appointments in the two higher classes of Upper Subordinates.

9. There will thus be 43 Sub-Engineers and Supervisors, of whom one-third should be Sub-Engineers; and the general distribution in classes and grades of the entire Upper Subordinate Establishment will be as follows:—

14 Sub-Engineers	...	4 1st Grade. 3 2nd „ 7 3rd „	
29 Supervisors	...	11 1st Grade. 18 2nd „	
18 Overseers	...	12 1st Grade. 3 2nd „ 3 3rd „	These proportions are not fixed, but are in general accordance with the present state of the Department.

61 Total, costing Rs. 10,570 per mensem.

10. The 31 special men proposed by Mr. Lee Smith made up as follows:—

6 Foremen for girders and machinery.
3 „ for brick-fields at the large bridges.
3 „ for brick-work for the well-sinking at ditto.
2 „ for carpenters.
3 „ for saw-mills.
1 Quaryman at the Jhelum.
4 Platelayers.
6 Enginemen at Steam-hoists.
3 „ at Saw-mills.

Subject to the scale above laid down, these men should be appointed on the salaries at which they may be obtainable, and as their services are found to be required. It may be necessary to send to England for some of them, in which case, the needful requisitions on the Secretary of State should be sent up.

11. The subordinates for ordinary work should be obtained, so far as is possible, from the other branches of the Department.

12. The tabular statements to be submitted for sanction in furtherance of these arrangements should be complete, so as to supersede all previous authorizations of Engineer or Subordinate Establishments, and to serve as a point of departure.

13. In submitting the indents for the girders, &c., of the large bridges, the appointment of the four Assistant Engineers from England should be referred to, in order that the needful communication may be made to the Secretary of State on the subject.

No. 856R, dated 3rd July, 1869.

From—*The Government of India*, P. W. Dept.,
To—*The Joint Secy. to the Govt. of the Punjab, P. W. Dept., Railway Branch.*

The adoption of the route of the Grand Trunk Road having been decided on for the Punjab Northern (State) Railway, it remains to consider what arrangements should be made for connecting the salt mines with the railway.

2. As at present informed, the Government of India are disposed to think that this would be best effected by carrying a light narrow gauge branch from some point south of the Kharian Range and of the Jhelum to a point on the left bank of that river opposite to Pind Dadun Khan, or thereabouts. It is believed that little drainage would have to be crossed, and that rails might be laid almost on the ground surface. With a bridge-of-boats over the river (it is not known whether there is one there at present), the trucks might be run from the mines right of the junction with the Main Line. There the salt would have to be shifted, but with sidings arranged on different levels, or other appliances, this may be done at a trifling expense. Trucks of special design may be essential, not only to allow of the easy transfer of their loads, but of their passing over the bridge-of-boats, and by a tramway up to, and even into the interior of, the mines to the actual workings. The gauge which may be 3 feet 6 inches, or less, down to 2 feet as on the Welsh Festiniog Line, if necessary, would probably be determined by the conditions prescribed by the boats available for the bridge, the tramway to the mines, and the method in which they are worked. The line would be worked by engine-power only so far as the Jhelum, unless it should appear expedient to follow the same plan trans-Jhelum.

3. I am to request that the subject may be taken into consideration by the Lieutenant Governor, and that, with His Honor's approval, Mr. Lee Smith (to whom a copy of this letter has been given) may be instructed to arrange that the drainage of the country through which the branch would pass may be watched during the approaching monsoon and the facts noted, and that a survey for such a line as is above indicated may be made. The results, with Mr. Lee Smith's recommendation as to gauge, rails, trucks, &c., should be submitted in the rough through the Lieutenant Governor, and accompanied by such observations as His Honor may desire to offer, at an early date for the consideration and orders of the Government of India.

No. 28R, dated 15th January, 1870.

From—Lieut.-Colonel E. N. Sandilands, *Executive Engineer, Jullundur Division, Punjab,*
To—*The Secretary to the Government of India*, P. W. Dept.

I have the honor to state that while down on a visit to the Salt Range the other day, where I once was Executive Engineer for three years, I heard that there is some intention of constructing a narrow gauge railway from left bank of the Jhelum to join the Northern State Railway. As I know the place and its resources pretty well, I take the liberty of pointing out a few things:—

1*stly*.—That it is doubtful whether for a long time at least the rock salt will be much more used, for the people outside the Punjab have a prejudice against it and consider it unwholesome. In the time of the Emperors, the mines were shut and only re-opened by the Seikhs. In old days I recollect the Hindostani sepoys used to eat it on ordinary occasions for economy, but on great days they ate the low country salt.

2*ndly*.—With river carriage only 51 miles below the new Northern State Railway, and if there be no great increase over present demand, the necessity of land carriage is not apparent, and, as I shall presently show, salt can be tracked up to Jhelum for less than it could be taken by railway.

It is to be recollected that to get to the rail, the salt must be ferried across the river and then loaded, and perhaps carried some distance to the station; while the salt, once in the boat, the native merchant, unless I greatly mistake, would sooner at once have it sent by river to Jhelum.

3*rdly*.—The railway is simply of use as a means of conveyance. In a country so destitute of fuel, it is injurious; if, therefore, the river be deemed not enough for the conveyance of the salt, a canal between the Jhelum and the Chenab joining the Northern State Railway about Wuzeerabad would carry salt, &c., save fuel, and fertilize the present desert which lies between these rivers. The salt could then be taken in canal boats at once from the right bank of the Jhelum at Chuck Nizam (eight miles from Pind Dadun Khan); the river runs through permanent banks, and is about 1,400 feet wide in flood, so without breaking bulk, it could be tracked on by the canal to Wuzeerabad for transport by rail.

It is only during the dead winter months that boats are towed with trouble up the River Jhelum from scarcity of water. During the hot weather, the wind almost always blows up-stream, and with sails the boats go up quickly and return in one night.

The mines are only worked for ten months in the year; the heat of the gorge and danger from slips in the mines combine in preventing the miners working during the rains, and they move in a body to a village provided for the purpose on the top of the highest hill in the neighbourhood. They stay there till time to recommence operations. The quantity of salt turned out in these ten months averages about 3,000 maunds per diem, and to remove the quantity to meet the train daily at Jhelum, only ten boats, holding 300 maunds each, would be required, and giving the absurdly long time for going and coming of 15 days, we have one boat carrying two freights per month of 300 maunds each, or 600 per mensem—

	Rs.	A.	P.
Allowing a crew of 6 men, @ Rs. 5 each per mensem ...	30	0	0
One tindal, @ Rs. 7	7	0	0

37 ÷ 6, or little over Rs. 6 per 100 maunds, but three trips in the month will be often practicable, which would be little over Rs. 4 per 100. The carriage to the river side is, of course, common to both water and rail carriage—

	Rs.	A.	P.	
The present ferry tolls levied for salt is 6 pies per maund, or	3	2	0	per 100 maunds.
And the carriage of salt by railway, @ ⅛ pie per mile, for 51 miles is anna 1-5 per maund, or per 100 maunds Rs. 8-13-8	8	13	8	
TOTAL ...	11	15	8	

Thus the Jhelum boatmen could underbid the railway offer.

Already the people are combining river with railway traffic for about one-third of the whole output of the mines, which is now conveyed by boats to Mooltan and thence by rail to Lahore.

No. 169 R, dated 25th January 1870.

Endorsed by the Government of India, P. W. Dept.

Copy forwarded to the Government of the Punjab, in the Public Works Department (State Railway), for consideration, with reference to Public Works Department No. 856 R, dated 3rd July 1869.

No. 272R, dated 11th February 1870.

From—MAJOR E. C. S. WILLIAMS, R. E., *Depy. Secy. to Govt. of India*, W. P. DEPT.,

To—The Joint Secy. to Govt. of Punjab, in the P. W. Dept., Railway Branch.

In continuation of my No. 169R of the 25th January 1870, I am directed by the Governor General in Council to request that the necessary measures may be taken by the Lieutenant Governor for ascertaining the probable cost of taking salt from Pind Dadun Khan up the River Jhelum by boat to the railway crossing, including loading and unloading, and to compare this with probable railway results in sending up the report on the salt mine branch, promised in Punjab Government No. 530 S, dated 23rd September 1869.

2. I am to state that, if thought desirable, an actual trial might be made on a sufficient scale to give real results, the salt being sent down the road afterwards by camel or cart.

No. 20, dated 15th February 1870.

From—The Government of India,

To—The Secretary of State for India.

In continuation of our Despatch No. 63 of 1869, we have now the honour to report the further steps that have been taken for carrying out the Punjab Northern (State) Railway.

2. In Despatch No. 72 of 1869, replying to the Despatch just quoted, your Grace has communicated approval of the conditions which we had prescribed for adoption in the construction of this Railway, and desired that the works might, as far as possible, be so designed as to admit readily of amelioration or addition as found expedient hereafter, the main essential being that the line should be commenced on the most economical scale consistent with the provision of a thoroughly permanent and useful iron road.

3. The staff of Engineers authorized to be engaged by your Grace's predecessor in office, began to arrive in India in November 1868, and Mr. Lee Smith returned to Lahore in February 1869. The necessity for an early settlement of the line to be followed was apparent, and at the end of March after personal communication between the Viceroy and the Lieutenant Governor of the Punjab, it was determined by us that Jhelum, which it had been recently determined to maintain as a Military Station, should be regarded as an obligatory point on the line, and that the formation of the Trunk Road should be occupied by the Railway, if, by so doing, any important reduction of the cost, and the necessary labour of construction, could be shown to be possible. By this decision the probable cost of the undertaking appeared likely to be brought within legitimate limits, and the way was cleared for active progress on the section, 100 miles in length, between Lahore and Jhelum, as soon as estimates had been approved.

4. In order that the many matters of detail involved in the preparation of the projects should not present any obstacles to progress, the Chief Engineer, Mr. Lee Smith, was instructed to place himself in personal communication with our Secretary in this Department, and such points as demanded early consideration were discussed, and with our approval settled, either finally or provisionally. The Minutes of these conferences accompany this Despatch (Enclosures Nos. 1 to 5).

5. It was thus decided that one-half of the Trunk Road should be taken for the Railway embankment (except in the Kharian Hills, a low range immediately south of the Jhelum, where a diversion seemed likely to be necessary), the existing bridges being utilised when possible. The description of permanent-way for adoption as far as Jhelum was settled and an Indent for 100 miles of material sent to England. It was decided that this material should be landed at Calcutta, and brought to Lahore by the East Indian and Delhi Railways. This involved a longer lead than by the Indus Valley route, but the advantages in point of economy and freedom from risk of loss and delay, appeared conclusive. Arrangements have since been made with these Railway Companies for the carriage of the material at a reduced rate (Enclosures Nos. 6 to 16), and there is no room for doubting the superiority of the plan adopted over all others that presented themselves. The question of the supply of fuel, both for work-

ing the line when opened, as well as for construction purposes, and of timber for sleepers and staging, has also been dealt with (see Nos. 17 to 20 of the Enclosures), and recent advices of the quantity of timber available are very promising.

6. Mr. Lee Smith's staff were busily employed throughout the summer and rains in the preparation of designs and estimates, in taking observations of the great rivers in flood, and in searching for ballast, and suitable positions for brick-fields, &c., &c. At the end of September the estimates for the section between Lahore and Jhelum were submitted (Enclosures Nos. 21 to 23), and Mr. Lee Smith was summoned to Simla in order that no time might be lost in paper discussions.

7. On the 13th and 14th of October, Meetings were held to consider the designs and estimates, and after full discussion between our Secretary and Mr. Lee Smith, the conclusions were arrived at which are recorded in the further Minutes which accompany (Enclosure No. 24). These have met with our entire approval, and we have sanctioned estimates for the section between Lahore and Jhelum to the extent of Rs. 24,70,766, as also a sum of upwards of Rs. 1,50,000 for the purchase of plant no longer required by the Contractors for the Delhi Railway, and the expenditure of a further sum of Rs. 4,00,000 for the preparation of materials for the piers and abutments of the bridges over the Ravee, Chenab, and Jhelum, and for protective works in the valleys of those rivers.

8. We have also expressed our general approval of the adoption of a design for these bridges, which comprises a pair of parallel girders, carrying a combined road and railway above, and a footway between them below for loaded cattle to be used when trains are not passing, and Mr. Lee Smith is now elaborating the designs. With the very small train service to be expected on the Railway, and the reduction that it will effect in the limited ordinary traffic of the road, we are of opinion, having regard to the extreme importance of keeping down the cost of this line in every possible way, that the accommodation which these bridges will afford, as long level-crossings, will be sufficient for the ordinary traffic for many years to come. We are advised that, so far as a judgment can at present be formed, these three bridges will cost not less than £600,000. It is incumbent on us, therefore, to see that the conveniences provided for the ordinary traffic in combination with these Railway bridges are limited most strictly.

9. The Superintending and Executive Engineers originally sent out for this Railway have been posted in three Circles, and eight Divisions. Five of the latter are for construction purposes between Lahore and Jhelum, the remaining three being for the surveys of the Salt Branch and the country beyond Jhelum as far as Rawul Pindee. For the instructions issued regarding the Salt Branch, we beg to refer to our Secretary's letter No. 856 R of the 3rd July 1869 (Enclosure No. 26). As at present advised, we are disposed to think that the salt trade would be sufficiently and efficiently served by a narrow-gauge branch taking off from the Main Line at some point south of the Kharian Range, and making for the left bank of the Jhelum opposite to Pind Dadun Khan, or thereabouts. The question however remains to be considered whether the requirements of the Salt trade may not be sufficiently met by the water communication in the Jhelum, and on this point further enquiry is being made (Enclosure No. 27).

10. Regarding the extension beyond Jhelum, we beg to refer your Grace to the concluding part of the Minutes of Meeting held on the 22nd June 1869 (Enclosure No. 2). The road surface is to be appropriated for the rails, subject to its being improved to a maximum grade of $\frac{1}{40}$ with tolerable curves for slow traffic. This will not forbid consideration of more gentle gradients, but the extra cost will have to be distinctly exhibited. The surveys for the diversions are now in progress, but it is improbable that the requisite preliminaries will be complied with in time to admit of construction operations beyond Jhelum being initiated before the next working season.

11. We have sanctioned a liberal scale of Engineering staff both of the Upper and Lower grades (see Enclosure No. 25) as well as of office and petty establishments, and no time has been lost in filling up the former. By the end of October, everything that could be done to ensure the present working season being fully availed of, was done, and, subject to the control of the Local Government, the Chief Engineer was in a position to give effect to our desire that the works should be pushed on vigorously. Anxious, however, as we are to see this Railway advancing rapidly towards completion, it is not our desire that the progress of its construction should be so forced on as to lead to any extraordinary rise in prices. With a caution, therefore, on this head, we urged a prompt commencement of the works, and the most active exertions to ensure the early completion of the line within the limits of these estimates.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 9 of 1870.



SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, FEBRUARY 26, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

FINANCIAL DEPARTMENT.

ANNUAL REPORT ON THE OPERATIONS OF THE POST OFFICE OF INDIA, FOR THE YEAR 1868-69.

No. 3575 A, dated, Simla, 25th November 1868.

From—A. M. MONTEATH, Esq., *Director General of the Post Office of India,*

To—The Secretary to the Government of India, FINANCIAL DEPT.

I have the honor to submit a report on the administration of the Post Office of India for the official year 1868-69. The submission of this report has been unavoidably delayed by the late receipt of the Bombay report, caused by the necessity of re-placing statistical records destroyed in March last when the General Post Office at Bombay was burnt.

2. As in my last report, I shall commence by noticing briefly a few of the principal events of the year.

3. The year under report is remarkable, both for an unusually large increase of revenue and an unusually large increase of expenditure; but as this subject falls appropriately under a subsequent head (Section VII, Financial Results), I shall not dwell upon it here.

SEA-SORTING.

4. The re-arrangement in the preceding year of the postal service between India and Europe, under which Bombay became the Indian port of embarkation and disembarkation of the entire overland mails, was followed in the early part of the year under report by the introduction of the system of sea-sorting, all paid letters and newspapers being sorted by a Postal Establishment on board the mail steamer, so as to admit of immediate despatch, if necessary, from Bombay. It formerly took about six hours to do this work in the Bombay Post Office, resulting often in the delay of a whole day, and, when it did not do so, in the

use of a special train. The overland mails are now landed ready for despatch inland. Sea-sorting had never before been tried on this side of Suez, and the introduction of the system required much care both in framing rules for the guidance of those employed and in the selection of officers for the work. It is due to Mr. Hogg, who, being then Officiating Post Master General of Bombay, was charged with the introduction of the measure, to say that every possible care was bestowed on it. Mr. Hogg personally superintended all the preliminary arrangements, and for many months after the service had commenced he maintained a close supervision of, and especial interest in, its working.

5. As might have been expected, there have been occasional failures and mistakes; but, on the whole, this important service has been well performed.

COMMUNICATIONS WITH PLACES ABROAD.

6. There have been various modifications of postage rates on correspondence with places abroad, but it is necessary to notice here only those changes more immediately affecting this country.

7. The re-arrangement of the Overland Mail Service was accompanied by an increase of 75 per cent. (4*d.* to 7*d.*) in the sea-postage on letters as per margin; but the old rates were continued in respect of letters sent by or addressed to officers of the Army in India. The whole of the sea-postage collected in India is credited to the English Post Office, by which the revenue of the Ocean service is set against the cost, the balance, or excess cost, shown against each of the several lines of communication, being borne, in certain proportions, by the British Government and the several Colonial Governments interested in the Ocean services.

	Former rate per ½oz.	*New rate per ½oz.*
	1*d.* Indian inland	1*d.* Indian inland.
	4*d.* Sea-postage	7*d.* Sea-postage.
	1*d.* British inland	1*d.* British inland.
Vid Southampton	6*d.*	9*d.*
	4*d.* French rate.	4*d.* French rate.
Vid Marseilles	10*d.*	13*d.*

8. There was some correspondence during the year under report, having for its object a re-distribution of the charges of the Ocean services, the idea being that India had been saddled with too large a share. The question is still under discussion, and I need not therefore advert to it further in this report.

9. Notwithstanding the considerable enhancement of postage rates, the correspondence between India and England has increased considerably under the new arrangement. This was to be expected, owing not merely to the greater frequency of the means of communication, but to the Bombay route being considerably quicker than the old routes. It appears from an estimate which I recently made that the correspondence with England has been affected as follows:—

From England *vid* Southampton, about				15	per cent.	increase.
,,	,,	,,	Marseilles	,, 6	,,	,,
To ,,	,,	,,	Southampton	,, 14	,,	,,
,,	,,	,,	Marseilles	,, 20	,,	,,

10. I may note here that one result of the new arrangement has been a considerable increase in the cost of Indian inland transit, while the share of Indian inland postage on overland correspondence has been virtually decreased. The increase of expenditure resulted from the necessity of conveying the entire mails for and from Bengal and Madras by long land routes, instead of having them landed at Calcutta and Madras. Formerly, there were only bi-monthly mails *vid* Bombay, and none of the heavy book and pattern mails for or from Bengal or Madras were conveyed by that route; but now there are weekly mails *vid* Bombay, including all classes of correspondence for the whole of India. At the same time, the value of the Indian share of postage, *viz.*, 1*d.* per ½ ounce letter, has virtually been reduced in respect of paid letters from India, for in India stamps are sold at a heavy discount, averaging 5 per cent., and the discount is paid on the whole amount of the increased postage. This may appear at first sight to be a very trivial source of loss, but it is not so, as will be seen from the following figures, showing the net postage remaining to India under the old and new rates, and also under the still further enhancement of rates resulting from the more recent opening of the Brindisi route:—

Indian share of postage per ½ ounce letter ... 8 pie or 1*d.*
Deduct discount at 5 per cent. on the whole postage pre-paid, *viz.*,

	As.	P.			
On former rate *vid* Marseilles of ...	6	8	...	4	Leaving 4 pie or ⅓*d.* for India.
On new rate *vid* Marseilles of ...	8	8	...	5·2	Leaving 2·8 pie or about ⅕*d.* for India.
On rate *vid* Brindisi of ...	10	8	...	6·4	Leaving 1·6 pie, or exactly ⅛*d.* for India.

11. Considering the now increased cost of the Indian inland transit of overland mails, the virtually reduced share of Indian *inland* postage, and the fact that the Indian Post Office spends much more on these mails than it receives by way of postage on them, it seems difficult to avoid the conclusion that the Indian share of postage must be increased. I had hoped that a reduction of sea-postage would make it possible to increase the Indian inland rate without enhancing the total rate charged to the public; and although this has been refused by Her Majesty's Post Master General, I still think it possible that the decision may be re-considered in connection with the recent resolve to abolish the privileged rates for officers' letters. A separate reference has already been made on this subject to the Government.

12. Turning now to other changes of communications with places abroad, I may note that, at the commencement of the year under report, the Government of Mauritius closed the contract with the Union Steam Ship Company for the conveyance of mails between Galle, Mauritius and Natal, the result being that correspondence between India and Mauritius is now sent *viâ* Aden by the French packets plying between that port and Mauritius.

13. Later in the year (November 1868), arrangements were made for exchanging mails with the United States of America *viâ* Hong-Kong by the vessels of the Pacific Mail Steam Ship Company plying between Hong-Kong, Japan and San Francisco.

14. Arrangements were also made with the Government of the Straits Settlement for the prepayment to destination of correspondence exchanged between the two countries by British, French, or Indian packets, or by private vessels.

15. The rate chargeable on newspapers sent from India to ports in Asia was also increased to the uniform standard of 2 annas, a free delivery of newspapers received being at the same time conceded.

LOCAL STEAM SERVICES.

16. The local steam services performed under contract with the British India Steam Navigation Company are as follows:—

(1). Calcutta and British Burmah, *weekly*, with a continuation to the Straits *once every four weeks*, the subsidy being Rs. 21,333 per mensem, of which Rs. 1,083 are paid by the Straits Government.

(2). Bombay and Kurrachee, *weekly*, with a continuation to the Persian Gulf *once a fortnight*, the subsidy being Rs. 23,111 per mensem.

(3). Calcutta, Bombay and intermediate ports on the East and West Coast, *fortnightly*, the subsidy being Rs. 10,000 per mensem.

(4). Madras, Rangoon and intermediate ports on the East Coast, *once every four weeks*, the subsidy being Rs. 6,000 per mensem.

No alteration was made during the year under report in the two first-mentioned lines; but line No. 3, which was formerly a monthly service with a subsidy of Rs. 7,500, was changed into a fortnightly one with a subsidy of Rs. 10,000; and line No. 4, which was formerly a monthly service, was changed (by consent of the Company) into a four-weekly service without any increase to the subsidy.

17. The subsidy payments on account of the above mentioned lines will, in future years, be shown as charges of the Post Office Department; for, though the object of the contracts is primarily that of providing for the conveyance of Government troops, stores, &c., and of encouraging inter-portal trade, it has been decided that it is more convenient for the Post Office Department to control them and pay for them.

18. There are also contracts for the following services, *viz.*:—

Irrawaddy Steam Flotilla Company ...	Rangoon and Thyet-myo (since extended to Mandalay).
Ditto Ditto	Moulmein, Tavoy, and Mergui.
Euphrates and Tigris River Steam Navigation Company	Bussorah, Bagdad, and intermediate ports.

None of the above mentioned services are under the control of the Post Office. The last mentioned contract is made by Her Majesty's British Government, but the subsidy is charged against the Indian revenue.

19. During the year under report, an arrangement was made with Messrs. Jardine, Matheson and Co., of Hong-Kong, and Messrs. Apear and Co., of Calcutta, for the more free

use of the opium steamers, plying between Calcutta, the Straits and Hong-Kong, for the conveyance of mails. These were formerly ranked as private vessels, the commanders being entitled to bounty money on the mails delivered by them, which had to be realized from the addressees, thus rendering it impossible to prepay letters to destination. Under the arrangement above referred to, the vessels are classed as Indian mail packets, letters being sent either prepaid or bearing, at the option of the senders.

MODIFICATIONS OF POSTAL ESTABLISHMENTS, &c.

20. Before resigning the direction of the Post Office in 1867, Mr. Riddell laid before the Government a strongly supported proposal for revising the pay of delivery peons throughout India, and that of Post Masters, Deputy Post Masters, and clerks in the postal circles of Bengal, the North-Western Provinces, the Punjab, and the Central Provinces. The revision was not sanctioned by Government till 1868, and took effect in the latter part of the year under report. These revisions involved a very considerable increase of expense, but they were much needed. The general scale of pay for delivery peons is now Rs. 6-8, rising, after five years' service, to Rs. 9, with a higher grade commencing at Rs. 9, and rising, after five years' service, to Rs. 12. Post Masters, Deputy Post Masters, and clerks have likewise been graded, with salaries rising by length of service between fixed limits.

21. An important change was made towards the close of 1868 by a re-arrangement of trains on the East Indian Railway, one daily train, running at a slightly increased speed, being substituted for the two daily trains previously existing. And in connection with this change, the mail route between Bombay and the Upper Provinces of the Bengal Presidency was diverted from the line *viâ* Khundwa, Indore, and Agra to the longer, but more expeditious, line *viâ* Nagpore and Jubbulpore, the mail cart establishment of the former line being largely reduced, and that of the latter being strengthened. This measure resulted in a considerable reduction of expense, while at the same time the transit of mails was more expeditious. Lower Bengal, the mails for and from which had for some time been conveyed *viâ* Nagpore, gained a whole day by the arrangement, and the mails for and from the North-Western Provinces and the Punjab were conveyed with at least equal speed and with greater regularity, the long road transit between Khundwa and Agra having always been the source of considerable uncertainty and occasional delay, especially during the monsoon season.

MODIFICATION OF INLAND POSTAL RATES AND CONDITIONS.

22. In 1865, representations had been made to the Government on behalf of an increase to the limits of weight allowed for the several rates of inland postage, and, after full consideration, the Government decided, in March 1867, on the expediency of the measure, observing that the time when it should be carried out depended on when the general revenues of the country could spare the estimated loss of postage without unduly restricting expenditure on the improvement of the Post Office. Towards the close of 1868 it was determined to introduce the measure, and the limits of weight were accordingly doubled.* This change had effect from the 1st April 1869, and will therefore fall more appropriately for remark in my next report.

* ½ anna—½ to ½ tola.
1 „ ½ „ 1 „
2 annas—1 „ 2 tolas.
3 „ 1½ „ 3 „
and so on

23. Towards the close of the year under report, the registration of letters containing coin or currency notes was made compulsory, in imitation of the similar rule in the English Post Office, which had been found to operate very beneficially. The rule had hardly time to become generally known in India during the year under report, but I trust that it will produce some effect in future years, for one of the greatest drawbacks to the efficiency of the Indian Post Office has hitherto been found in the temptation placed before its subordinates by the common habit of enclosing currency notes in unregistered covers.

24. Shortly after the introduction of the above rule, I deemed it necessary to revise the departmental system of treating registered letters, the object being to provide more effectually for the safe transit of such letters, and to afford the means of more prompt investigation in cases of apparent tampering. This change was not, however, actually introduced till after the close of the year under review.

POSTAL GUIDE.

25. In the year under report, arrangements were made for publishing what had long been felt to be a great want, *viz.*, a Postal Guide. The first number was published on the 1st April 1869, and further numbers have since been issued quarterly.

LOCAL POST IN CALCUTTA.

26. I adverted in my last report to the establishment of local posts in Bombay and Calcutta, mentioning the great success of the measure in the former city, and its failure in the latter. A modified system was introduced in Calcutta during the year under report; and, although the success has not equalled that in Bombay, the result is by no means unsatisfactory, the local correspondence having exactly trebled since the introduction of the change. Time will probably lead to improvement in the working of the Calcutta local post and to an increased use of it by the public.

GOVERNMENT BULLOCK TRAIN AND MILITARY TRANSPORT TRAIN.

27. The Government Bullock Train was re-established in the year under review, and a new Military Transport Train was also organized for the conveyance of the annual Military Reliefs between Jubbulpore and Nagpore; but as both these measures appertain to a succeeding section (VI, Non-Postal Branches of the Department), I need not refer to them here in detail.

GENERAL POST OFFICE, BOMBAY, DESTROYED BY FIRE.

28. On the 1st March 1869, the General Post Office at Bombay was totally destroyed by fire. The cause of the fire has not been clearly ascertained: it appears to have broken out in a room where the waste paper was kept, bursting forth with such violence, and spreading with such rapidity, that the whole building was consumed in a few hours. All the mails were saved, but the records of the Post Master General's and Post Master's Offices were totally destroyed.

29. The construction of a new building had been for some time in contemplation, and the plan and estimate had already been approved by the Government. It will probably be two years before the new building is ready, and meantime the requirements of the department are but imperfectly met in a hired house.

NEW GENERAL POST OFFICE, CALCUTTA.

30. The new building, recently erected for the Post Office in Calcutta, was occupied during the year under review. Although the structure has been the subject of unfavorable comment as regards outward appearance, it is, in respect both of accommodation and position, well adapted to the requirements of the Post Office.

31. I now proceed to give the usual statistical information respecting the working of the department, under the same heads as those adopted in previous reports.

SECTION I.—POST OFFICES AND LETTER BOXES.

32. The number of new post offices and letter boxes opened during the year is given on the margin. The details for each circle will be found in Appendix No. I. The difference between the aggregate return of the year under report and that of the previous year is mainly due to the Bombay circle, in which the number of new post offices opened has fallen from 178 to 113. But, notwithstanding this, the Bombay circle still exhibits a larger extension than any other circle; the Bengal circle, which comes next in order, showing a total of 106 new post offices opened. The extension of the department by the opening of new post offices during the last four years has been enormous, being at an average rate (about 350 new offices per annum) more than four times as great as in previous years.

	Opened in 1867-68.	Opened in 1868-69.
Post Offices	467	384
Letter Boxes	134	167
TOTAL ...	601	551

33. And, as observed under this head in last year's report, the extension of facilities for posting letters is not confined to the opening of new post offices and letter boxes, but has, within the last few years, been carried out to a considerable extent by the employment of what are called rural messengers or district letter-carriers, who not merely deliver letters in the agricultural villages, but collect them, each messenger having a prescribed round to be traversed

generally weekly or bi-weekly, and carrying about with him a bag with a locked compartment in which letters may be posted. In the previous year, 127 such messengers were entertained, and in the year now under report 227 were added. I look to this system as one of the best means of extending postal facilities to the agricultural population, and hope to see it largely developed in future years.

SECTION II.—POSTAL LINES.

34. The extent in miles of each class of postal lines at the close of the year, as compared with the returns of the previous year, is given in detail for each circle in Appendix II. The results for the whole of India are noted on the margin. The increase in Railway line mileage is composed of extension from Moodanoor to Tadputry (Madras), Delhi to Umballa and Amritsur to the Beeas (Punjab), and Khundwa to Beerh (Central Provinces). The increase of 320 miles of mail cart and horse or camel lines is due to various alterations, *viz*,—in Bengal, additions of Berhampore to Jeagunge, and Chuckada to Jessore; in Bombay, additions of Nundgaum to Julna, Akola post office to Railway Station, Ahmednuggur to Poona, Kowta to Mahableshwar, and Putton to Deesa; in the North-Western Provinces, additions of Meerut to Koorja (since abolished), Etawah to Bareilly, and Seharunpore to Rajpore, and reductions of Futtehgurh to Cawnpore, Futtehgurh to Shekoabad, Meerut to Ghazeeabad, and Meerut to Rajpore; and in the Punjab, reductions of Delhi to Umballa, and Beeas to Amritsur.

Year.	Railway.	Mail Cart, Horse Dâk, and Camel Dâk.	Runners and Boats.	Sea.	Total.
1867-68 ...	* 3,994½	5,140½	34,930	5,613	49,678½
1868-69 ...	4,234½	5,460½	34,973	5,613	50,281½
Increase ...	240	320	43	.....	603

* 6½ miles less shewn in Statement of previous year and now corrected.

35. The small net increase in the mileage of runners' lines is the net result of a large number of increases and decreases which need not here be specified.

SECTION III.—CORRESPONDENCE.

36. The correspondence returns of the year are given in detail for each circle in Appendix No. III., of which an abstract is entered on the margin. Under all heads there is an increase. The increase of letters (above 10 per cent.) shows a larger development than in any recent year. The increase in books and patterns is, like that shown last year, very large; and it ought to have been larger in both years, for I find that in some quarters an erroneous practice has obtained of classing packets of patterns under the head of parcels. This accounts for the otherwise strange increase in the number of parcels exhibited in the returns of the two last years, notwithstanding the extension of the Railway and the consequent operation of the prohibition against the conveyance of parcels by the Post Office. In point of fact, the parcel returns of this and the preceding year ought to have shown a decrease, and the returns of books and patterns an increase somewhat larger than what is actually shown.

Year.	Letters.	Newspapers.	Parcels.	Books and Patterns.	Total.
1867-68	62,567,255	5,411,110	651,428	525,050	69,154,847
1868-69	68,891,232	5,773,585	699,208	623,594	75,987,617
Increase	6,323,977	362,475	47,780	98,538	6,832,770
Increase percentage ...	10·107	6·69	7·33	18·76	9·88

37. The letter returns may be further analyzed as per margin. There is nothing in this analysis calling for remark or explanation, except perhaps that, as in previous years, the column for "paid letters" includes service letters prepaid with service postage labels.

Year.	Paid.	Unpaid.	Service.	Registered.	Total.
1867-68 ...	34,995,281	23,321,703	3,993,830	1,256,441	63,567,255
1868-69 ...	38,904,155	24,612,666	4,017,709	1,356,702	68,891,232
Increase	3,908,874	2,290,963	33,879	90,261	6,324,977
Increase percentage ...	11·16	10·26	·85	7·12	10·107

38. The correspondence received was disposed of as shown in the following statement :—

Directly delivered (Appendix III), 82 per cent.	56,258,994
Retained for re-issue, 18 per cent.	12,632,238
	68,891,232

Details of Re-issue.

Sent to district post office	4,698,361
Sent to dead-letter office	2,065,134
Remainder disposed of by re-direction to other offices, or sent to branch offices, or in deposit at the end of the year	5,868,743
Total ...	12,632,238

These results present no points calling for remark or explanation.

39. A statement of the number of articles mis-sent in each circle will be found in Appendix IV. The results for the whole of India, compared with those of the preceding year, are as follows :—

	Number of letters, papers, and parcels mis-sent.
1867-68	71,812
1868-69	74,950

In my last report, I observed under this head that, while the returns might show approximately the number of articles *received for delivery at the wrong office*, they were incomplete, inasmuch as they did not show articles mis-sent to the *wrong sorting office*. I was desirous of remedying this defect, but found that the trouble entailed would be quite incommensurate with the advantage, and I ascertained that, for like reasons, the English Post Office made no attempt at recording the number of articles sent to a wrong sorting office.

40. Appendix V contains details relative to the working of the several dead-letter offices and I give below, in the usual form, a comparison of the results for the last three years, *viz.*:—

	Number.			Proportion of each class to the whole.		
	1866-67, for 11 months.	1867-68.	1868-69.	1866-67.	1867-68.	1868-69.
Letters returned to senders	607,055	723,266	880,933	37·65	40·65	42·66
Letters undisposable	1,004,885	1,055,982	1,184,201	62·35	59·35	57·34
Total ...	1,611,940	1,779,248	2,065,134	100·	100·	100·

The proportion of covers returned to the senders is increasing.

41. The increase in the gross value of stamps sold in 1868-69 is 12·4 per cent. against a corresponding increase of 4·78 per cent. in the previous year. The increase and decrease in the sales of the several classes of labels are given below :—

The increase in the gross value of Stamps sold in 1868-69, *as compared with* 1867-68, *is* 12·49 *per cent. against a corresponding increase of* 4·78 *per cent.*

	½-Anna Labels.	1-Anna Labels.	2-Anna Labels.	4-Anna Labels.	6-Anna Labels.	6-Anna 8-Pie Labels.	8-Anna Labels.	½-Anna Notepaper.	½-Anna Envelopes.	1-Anna Envelopes.
1866-67, as compared with 1865-66		1·37	9·18	3·54	...	...	4·65	·38	6·73	32·23
1867-68, as compared with 1866-67, exclusive of Straits Settlement ...		3·76	·83	3·603	40·39	253·104	6·79	25·31	44·77	115·68
1868-69, as compared with 1867-68		4·47	5·28	7·69	83·88	43·88	32·15	146·37	45·69	62·19

	8-Pie Labels.
1866-67, as compared with 1865-66	2·13
1867-68, as compared with 1866-67, exclusive of Straits Settlement ...	22·69
1868-69, as compared with 1867-68	40·48

Decrease. Decrease. Decrease. Decrease. Decrease. Decrease. Decrease. Decrease. Decrease. Decrease.

Increase. Increase. Increase. Increase. Decrease.* Decrease. Increase. Decrease. Decrease. Decrease.

* A temporary label, [illegible] discontinued.

The largely increased sale of 8-pie and 8-anna labels is accounted for partly by the modification of overland postage rates, the single postage rate *viâ* Marseilles (8 annas 8 pie) bringing these labels into use in supersession to a large extent of the 6-anna 8-pie labels, in the sale of which there is a large decrease. The increased sale of ½-anna note-paper was due to special efforts made during the year to expose it freely for sale, the stock on hand being inconveniently large.

42. The returns of the sale of service stamps will be found in Appendix VIA. The gross value of service stamps sold in the year was Rs. 2,85,644 against Rs. 3,18,169 in the previous year, the reduction being probably due to the inclusion of more public offices in the list of offices privileged to send and receive official correspondence without actual payment.

SECTION IV.—DISTRICT POST.

43. As explained in previous reports, the district post consists of lines of communication connecting the head quarters of each district with the interior police and revenue stations, and is maintained primarily for the purpose of conveying official correspondence, the cost being borne in some parts of the country by a local cess, and in other places by the Government as an imperial charge. I mentioned in the last report that the management of the district post had been made over in Bombay and the North-Western Provinces to the officers of this department, acting in that respect under the orders of the local Governments, and I stated that the improvement in working which followed the transfer had resulted in steps being taken for carrying it out in other provinces.

44. It has since been arranged that the transfer shall be carried out in the Punjab as the districts come under re-settlement, and as this will be a slow process, efforts will meantime be made by this department to improve matters as much as possible by extending the imperial post and employing rural messengers.

45. In Bengal, as stated in my last report, the local post of one district had been made over experimentally to the management of this department, and the result being favorable, steps were taken for assuming the management in various other districts where the local authorities consented to the change. The result will form the subject of report next year.

46. In Madras, a similar experiment was made, but the result has not yet satisfied the local Government of the expediency of extending the plan, which is still undergoing trial. I hope that I may be able next year to report favorably respecting the Madras experiment.

47. In Oude, there is still a difficulty about the transfer, owing to the fact of that Province being postally under the jurisdiction of the Post Master General of the North-Western Provinces, who could not obviously be of the same help to the local administration in the management of the district posts as an officer resident in the Province. The remedy for this will probably be the separation of Oude from the postal jurisdiction of the North-Western Provinces, and the appointment of a Chief Inspector exercising the powers of Post Master General; but as this measure would necessarily result in some increase of expense, I have not as yet felt warranted in proposing it.

48. The result of the district post operations, in so far as concerns correspondence passing between it and the imperial post, is given in Appendix VII, of which the following is an abstract:—

	Number.	Porcentage.
Sent to district post for delivery	5,029,074	Being 6·61 per cent. of the total number of covers received for delivery.
Portion of the above received back undelivered	537,257	Being 10·68 per cent. on the number sent to district post.
Received from district post	2,994,828	Being 3·94 per cent. on the total number of covers received by General Post Office for delivery.

These returns show a slight decrease, as compared with the previous year, in the number of covers sent for delivery to the district post and received from it, this result being due to the extension of the imperial post to localities previously served by the district post. The proportion of covers returned by the district post as undeliverable is much the same as before,

i. e. somewhat over 10 per cent. This is proof enough of the inefficiency of the present system; but, so long as the delivery is effected through the police and village chokeydars, no better result can, I fear, be expected.

SECTION V.—MISCELLANEOUS.

49. In Appendix VIII will be found the usual statement of complaints made by the public during the year. The return for the Bombay circle is wanting, owing to the destruction of records when the Bombay Post Office was burnt. As observed in previous reports, the statement of complaints is of no real use in measuring the extent of dissatisfaction with the working of the Post Office.

50. The number of cases in which punishment has been inflicted on Post Office employés for offences committed by them is 130 for the year under report, against 126 for the previous year, as shown in Appendix IX.

Names of Postal Circles.	1867-68.			1868-69.		
	British Territory.	Foreign Territory.	Total.	British Territory.	Foreign Territory.	Total.
Bengal	1	...	1	1	...	1
Madras	4	3	7	5	1	6
Bombay	...	2	2	2	8	10
N. W. Provinces ...	5	14	19	9	6	15
Punjab ...	1	...	1	...	...	...
British Burmah ...	...	...	...	...	...	...
Central Provinces ...	...	...	...	...	1	1
Total ...	11	19	30	17	16	33

51. Last year, I reported a reduction in the number of highway robberies of mails from 43 to 30, and in the year now under report the number is slightly larger, *viz.* 33, as per margin. The increase is entirely in British districts, there being a reduction of three in the number of robberies in foreign territory. The Government order of July 1866, under which Native States are fined to the value of the property plundered in their jurisdictions, has resulted in a steady reduction of the number of robberies in foreign territory, *viz.*, from 36 in 1865-66 to 16 in 1868-69. The reduction this year would have been much larger, but for the considerable increase in the Bombay circle. The foreign territories in which the robberies occurred are noted on the margin, and it is satisfactory to find that, for the first time, Hyderabad does not appear on the list. The most important of the robberies mentioned comprised the following, *viz.*,—the one in Mysore (between Mysore and Bangalore), one of those in Kattiawar (between Wudwan and Bhooj), the one in the Bhoree State (between Poona and Sattara), and the two cases in Bhurtpore, in all of which the intrinsic value of the plundered property was large.

Madras.
Mysore ... 1
Bombay.
Kattiawar ... ... 7 (Besides two unsuccessful attempts at robbery.)
Bhorée State ... 1
N. W. Provinces.
Gwalior ... ... 1 (Also two reported attempts at robbery.)
Jeswar, Marwar, and Kishengurh, one each ... 3
Bhurtpore 2
Central Provinces.
Holkar's Dominions ... 1
Total ... 16

52. The robberies shown under the head of British Districts were perpetrated in the localities shown on the margin. The large number shown under the North-Western Provinces is really more nominal than otherwise, for in all except one case (in the Bareilly District, close to the borders of the Rampore State) the mails were wholly recovered, and the robberies would seem for the most part to have originated not so much in the desire to plunder, as in subservience to private feuds and jealousies. The perpetrators of the robbery on the Calcutta and Midnapore line were captured and convicted, a portion of the mail being recovered. The robbery in the Kistna District was an important one, the intrinsic value of the plundered property being very large, but the robbers were apprehended and a portion of the plunder recovered.

Bengal.
Calcutta and Midnapore line 1
Madras.
Kurnool and Kistna Districts, one each ... 2
Bellary District 3
Bombay.
Ahmedabad District 2
North-Western Provinces.
Meerut District 3
Etah Do. 2
Furruckabad and Budaon Districts, one each 2
Bareilly District 2
Total ... 17

53. The persons employed permanently in the Post Office Department number 23,257 as per margin; the distribution is given in detail for each circle in Appendix X.

	1867-68.	1868-69.
Inspecting Post Masters	75	99
Post Masters and Deputy Post Masters	1,499	1,903
Clerks	1,451	1,684
Peons, &c.	3,498	4,512
Road Establishment	14,748	15,059
Total ...	21,271	23,257

SECTION VI.—NON-POSTAL BRANCHES OF THE DEPARTMENT.

54. These branches were largely increased during the year under review by the re-establishment of the Government Carrying Agency, commonly known as the Government Bullock Train, the offices of which at the close of the year numbered 67, the communications consisting of a main line from Calcutta to Peshawur with various branches, the chief ones being those to Darjeeling, Nagpore, Lucknow and Fyzabad, Futtehgurh, Indore, Landour, Simla and other neighbouring Hill Stations, Sealkote and Murree.

55. A large Military Transport Train was also organized by the desire of Government for the winter season between Jubbulpore and Nagpore for the purpose of conveying the annual Military Reliefs. This train, consisting of about 30 carts per diem each way on a road of 164 miles in length, was organized on very short notice, and gave entire satisfaction to the Military authorities. The train being managed by the Post Office, the whole cost has been debited to this department, although it is, of course, in reality a Military charge.

56. The Punjab Military Van Dâk, consisting of lines from Lahore to Peshawur with branches to Sealkote (in the winter), Murree (in the summer), and Kohat (since abolished), was enlarged during the year both by increased establishment on the main line, and by extension between the Beeas and Umballa (now only Jullundur and Loodhiana, owing to further extension of the Railway).

57. Passenger services were also maintained on other lines in connection with mail cart establishment, the principal one being that between Nagpore and Jubbulpore, on which considerably greater provision was made for passengers than in previous years.

58. The financial results of these non-postal branches will be shown in the following Section, together with the financial results of the purely Postal Department.

SECTION VII.—FINANCIAL RESULTS.

59. The financial results are in one sense unusually satisfactory, and in another sense not so. Since 1858-59 (the year following the mutiny), there has not been a year with so large an increase in the revenue from private correspondence; but, on the other hand, for reasons presently to be stated, there has not been a year with so large an increase of expenditure. For the nine years from 1858-59 to 1867-68, the yearly increase in the revenue from private correspondence varied considerably, the average increase being 1½ lakhs, and the largest increase (in 1862-63) Rs. 2,15,836. This year the increase is Rs. 3,31,097. So far the results are good; but, on the other hand, during the same nine years above referred to, the average yearly increase of expenditure was only Rs. 1,37,205, while the increase in the year now under report is no less than Rs. 6,15,261. It remains to explain this increase. More than a quarter of it (Rs. 1,63,290) was due to the cost of special and express trains for overland mails, for which no payments had been made in the previous year. The trains were employed at the express wish of the Government, but the rate of charge had not been settled, and, under the orders of the Government, all payments were held in abeyance. The question was settled in 1868, all arrear charges being then adjusted and the cost thrown upon the year under review. Further, it was in 1868 that the Government determined to make the Post Office pay for the haulage of the sorting carriages by Railway, for which previously no charge had been made. Payments were made on this account during the latter part of the year under review to the extent of Rs. 49,628.

60. The two items above mentioned, both of them payments to the Railway and aggregating Rs. 2,12,918, being deducted, leave a balance to be accounted for of about four lakhs, *i. e.*, very little more than the year's increase of revenue from private correspondence. But, even as regards this balance, there are special explanations.

61. During the last five months of the year, heavy charges were incurred on account of famine allowances, which it is quite impossible to avoid in a department like the Post Office, the work of which is largely carried on by runners, who must be enabled to feed themselves, and by horses, camels, &c., the keep of which varies directly with the price of food. Further, the year under review commenced with expensive additions to several of the chief mail cart lines, consequent on the institution of weekly overland mails and the necessity of conveying the whole of them from Bombay, instead of having them distributed by mail steamer to Bombay, Madras, and Calcutta, as formerly.

62. There remains one other special cause of increase which I have already adverted to in a preceding paragraph (20), *viz.*, the general revision of Post Office Establishment proposed by Mr. Riddell in the early part of 1867, but not sanctioned till 1868. This revision, the necessity of which had been apparent for many years before, took effect in the latter part of the year now under report.

63. The above mentioned circumstances explain the unusual increase of expenditure, and the effect of some of them has as yet been only partly experienced, for the Railway haulage charges appertaining to the latter part of 1868-69 will be still higher when computed for a whole year, and the general revision of salaries will operate in a similar manner, the revised scale having been applied only during the latter part of the year under report, and being moreover of a progressive character, the emoluments rising, in almost all cases, with length of service.

64. It is clear from the above that, notwithstanding an unusual development of postal revenue, it will be some time before the Indian Post Office can show as good a balance sheet as was once shewn.

In making this remark, I put out of consideration altogether the revenue from official correspondence, for, if that be included, I have no explanations whatever to render, the net revenue of the department during the year under report being (notwithstanding all the increased expenditure) actually greater by about 1½ lakhs than in the previous year. But I understand the Government to wish rather to view the Post Office as an institution *deriving a revenue from the public only, in return for services rendered both to the public and to the Government.* This point of view is a useful one, and it may also be a reasonable one in respect of some countries, such as England, where the service rendered to Government forms but a small fraction of the total operations of the Post Office. It appears from the last English report that what is called official postage has for the first time been excluded from the revenue returns: but this exclusion is merely partial, for it applies only to some forty privileged offices in London, and not to other Government correspondence which is paid for, like that of private persons, by ordinary postage labels. But even if the exclusion of official postage from the English revenue returns had been complete instead of partial, the principle could hardly be regarded as in the same degree applicable to India; for, while in England it could probably be urged that the Government service, forming but a fraction of the whole operations of the Post Office, put the department in reality to hardly any appreciable additional expense, the case is far otherwise in India, penetrated as it is by State administration and State agency in every province, district, pergunnah, town, and village,—where the Government constructs buildings, roads, railways, canals, telegraphs, &c., not through private contractors (who pay their own postage), but through its own agency,—where education, surveys, and even Municipal matters, are, to a large extent, controlled or undertaken by Government,—and where, consequently, a very large proportion of the expenditure incurred by the Post Office is incurred directly on account of the service rendered to Government.

65. But admitting, as I have already done, that it is at least a useful thing to view the Post Office in the light above referred to, *viz.*, as an institution spending money on two objects (conveyance of official and private correspondence), and deriving a revenue from only one of them (private correspondence), I proceed to offer the following remarks.

66. The Indian Post Office once, in recent years, reached very nearly the point when it could be said that the revenue from private correspondence alone paid all expenses. This was in 1864-65, when, after several years of an almost stationary scale of expenditure and a steadily increasing income, the revenue from private correspondence fell short of the total expenditure by only Rs. 5,13,999. It now, after several years of increased expenditure, falls short by Rs. 12,64,497; and the current year will probably find that figure somewhat increased, for the revenue will suffer by the increased limits of weight allowed for letters. But allowing for all this, the lee-way to be made up, so as to regain the position of 1864-65, is after all but small, and a few years of economical management (by which term I do not mean an unwise repression of natural expansion) and of average prosperity will suffice for the purpose.

67. Every effort is being made this year to ensure economy, and the Government may confidently look for a speedy recoupment in respect of its outlay as well as of its concession of reasonable limits of weight for letters.

68. I now proceed to give the usual financial statistics, both as respects the Post Office proper and the several non-postal branches of its administration. These are exhibited in detail in Appendices XI and XII, and the following abstracts will show the general results, *viz.*:—

PURELY POSTAL SERVICE.	1867-68.	1868-69.
	Rs. A. P.	Rs. A. P.
Receipts, including official postage and sale of service stamps ...	60,84,447 0 6	68,60,720 12 3
Receipts, excluding official postage and sale of service stamps ...	37,74,607 4 6	41,05,704 4 3
Disbursements	47,54,940 6 5	53,70,201 15 8
Net revenue, including official postage and sale of service stamps ...	13,29,506 10 1	14,90,518 12 7
Net deficit, if official postage and service stamps be excluded ...	9,80,333 1 11	12,64,497 11 5
NON-POSTAL BRANCHES.		
Bullock Train.		
Receipts	88,950 11 8	10,13,570 7 3
Disbursements	68,217 10 9	8,88,939 12 2
	Excess of receipts.	Excess of receipts.
	20,733 0 11	1,24,630 11 1
Punjab Military Van Dâk.		
Receipts	1,39,382 3 8	1,66,426 9 7
Disbursements	1,37,996 7 0	1,68,533 4 3
	Excess of receipts.	Excess of disbursements.
	1,385 12 8	2,106 10 8
Passenger Services on Mail Cart Lines.		
Receipts	83,435 2 11	1,34,105 12 5
Disbursements	83,435 2 11	1,34,105 12 5
Military Transport Train.		
Disbursements	*Nil.*	1,84,611 10 9

69. Briefly stated, these results show,—

		Rs.	
(1).	A net revenue in the purely Postal Department of ...	14,90,518	If official postage be included.
(2).	A net deficit in ditto of	12,64,497	If official postage be excluded.
(3).	A net revenue in the Bullock Train of	1,24,630	This is the result of the year's operations. The expenditure was largely increased by the high price of grain, and it was not till after the close of the year, when a long continuance of high prices seemed certain, that the fares were increased. The Van Dâk has a large surplus at credit from previous years.
(4).	A net deficit in the Punjab Military Van Dâk of ..	2,106	

70. **The "Passenger Service on Mail Cart lines" exhibits neither loss nor gain, the fact being that it is impossible to divide the expenses into those incurred for passengers and those incurred for the mails: indeed, in most cases, it would be impossible to reduce the expenses even if there were no passengers, the latter being ordinarily conveyed in the same carriage as the mails, or in special carriages horsed by an establishment necessary for the mail service, but not employed daily in it. Under these circumstances, the passenger receipts are treated as a set-off against the cost of the mail service, only the net cost being debited to the Postal Department, and the remainder with the corresponding receipts being shown under the head of Non-Postal Branches.**

71. The Military Transport Train shews no receipts, for it is merely a troop-carrying agency placed at the disposal of the Military authorities, being managed and paid for by the Post Office as a matter of convenience.

72. As in my last report, I give on the margin certain items not hitherto included in the regular accounts. The estimate for Railway free service previously given at 2 lakhs has been reduced to 1½ lakhs, as ½ lakh has this year been actually paid to the East Indian Railway on account of haulage.

	Rs.
Railway free service (estimate) ...	1,50,000
Discount on sale of stamps ...	1,38,629
English stores (estimate) ...	31,310
Printing in Bengal and Madras (estimate)	50,000
TOTAL Rs.	3,69,939
Subsidies for local steam services ... „	7,12,332

The subsidies for local steam services will, as already stated, appear next year in the Post Office Accounts, it having been decided that these services, although maintained primarily for other than postal requirements, can most conveniently be controlled and paid for by the Post Office Department.

73. To this list ought, perhaps, to be added the payment (Rs. 4,800 I believe) made by Her Majesty's British Government to the Euphrates and Tigris Steam Navigation Company, and debited to the Indian Government. The communications for which this payment is made are, I believe, required for political or other purposes, and are controlled by Her Majesty's British Resident.

SECTION VIII.—GENERAL REVIEW OF PROGRESS SINCE 1854.

74. In accordance with previous custom, I annex a return (Appendix XIII) showing the number of letters and newspapers received for delivery since the introduction of the Post Office Act of 1854, together with an abstract comparison, as per margin.

Number of letters and newspapers received for delivery in the year under review, as compared with the number received in the year prior to the introduction of the Post Office Act of 1854.	
A year before the Act XVII of 1854 came into operation ...	19,082,676=100
1867-68	67,978,365=356
1868-69	74,664,817=391

75. I also submit a statement (Appendix XIV) showing the progress of purely postal revenue from 1853-54 up to date. The abstract on the margin relates to the revenue from private correspondence, that of 1855-56 (the first complete year after the reduction of postage rates in 1854) being represented by 100, and the revenue of the six last years in like proportion.

Year.	Percentage.
1853-54, last complete year of former rates	128
1855-56, first complete year	100
1864-65, tenth ditto	214
1865-66, eleventh ditto	222
1866-67, twelfth ditto	230
1867-68, ditto ditto (exclusive of Straits Settlement)	227
1867-68, thirteenth ditto	237
1868-69, fourteenth ditto	258

APPENDIX No. I.

Statement showing the number of Post Offices and Letter Boxes which were opened during the years 1867-68 *and* 1868-69.

NAMES OF POSTAL CIRCLES.	POST OFFICES		LETTER BOXES		TOTAL	
	Opened in 1867-68.	Opened in 1868-69.	Opened in 1867-68.	Opened in 1868-69.	Opened in 1867-1868.	Opened in 1868-69.
Bengal ...	102	106	40	47	142	153
Madras ...	65	39	3	7	68	46
Bombay ...	178	113	80	80	258	193
North-Western Provinces ...	35	54	11	14	46	68
Punjab ...	59	62	.....	13	59	75
British Burmah ...	.....	1	.....	.....	.....	1
Central Provinces ...	28	9	.....	6	28	15
TOTAL ...	467	384	134	167	601	551

APPENDIX No. II.

Statement showing the distance over which Mails were conveyed throughout India by Railway, Mail Cart, Horses, Runners, and Boats during the years 1867-68 *and* 1868-69.

NAMES OF POSTAL CIRCLES.	Railway.		Mail Cart, Horse or Camel Dak, &c.		Runners or Boat Lines.		Sea.		Total.	
	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.
Bengal *(a)*	787	787	248	308	8,095	7,909	2,837	2,837	11,967	11,841
Madras *(b)*	830¾	862¾	492½	492½	6,256	6,549	.....	.....	7,579½	7,904½
Bombay	1,161	1,161	772	1,000	7,368	7,085	2,445	2,445	11,746	11,691
North-Western Provinces	578	578	1,529	1,494	6,277	6,286	.....	.....	8,384	8,358
Punjab	342	529	1,937	2,002	3,541	3,629	7	7	5,827	6,167
British Burmah	.....	.....	.....	.....	1,038	1,038	324	324	1,362	1,362
Central Provinces *(c)*	296	317	162	164	2,355	2,477	.....	.....	2,813	2,958
TOTAL ...	3,994¼	4,234¼	5,140½	5,460½	34,930	34,973	5,613	5,613	49,678¾	50,281¾

(a). 55 miles less shown in previous year's Statement, owing to omission of Nuthattee branch line and Mutlah line.
(b). 18½ miles less shown in previous year's Statement, owing to omission of Arconum and Conjeveram Tramway.
(c). 66 miles excess shown in Central Provinces return of previous year.

No. III.

General of Bengal, Madras, Bombay, North-Western Provinces and Punjab, and Chief Inspe

COMPARATIVE STATEMENT showing

NAMES OF POSTAL CIRCLES.		Delivered at the window, or sent out for delivery by peons.				Retained at Office as u or for		Newspapers. Retained at Office as unclaimed, or for re-direction, or for District Post.			Total number received.			Grand Total.	Delivered at the window out for delivery by	
		Paid.	Unpaid.	Service.	Registered.	Paid.	Unpaid.	Paid.	Unpaid.	Service.	Paid.	Unpaid.	Service.		Paid.	Unpaid.
								92,655	11,343	865	1,099,644	72,176	6,258	1,178,078	53,637	28,400
Bengal ...	1867-68...	6,640,337	3,620,228	185,313	399,513	498,698	1,234,5	120,688	9,933	707	1,128,168	83,347	3,704	1,215,219	58,167	28,766
	1868-69 ..	7,166,418	4,012,178	111,873	421,219	675,221	1,565,:	194,622	18,085	27,821	932,380	75,433	55,689	1,063,502	30,887	30,760
Madras ...	1867-68...	5,984,178	1,372,068	238,955	189,100	1,193,734	684,5	275,319	17,079	27,495	1,065,296	67,670	49,892	1,182,858	26,871	29,359
	1868-69...	6,617,817	1,451,260	257,679	198,505	1,338,716	754,	72,391	13,761	6,225	1,025,319	65,011	32,656	1,122,986	29,187	19,087
Bombay ...	1867-68...	6,146,974	3,495,380	2,086,573	201,538	516,559	1,158,:	143,716	21,201	5,553	1,186,391	76,117	26,240	1,288,748	31,314	20,591
	1868-69...	6,862,439	3,918,386	2,216,915	222,358	688,709	1,439	86,901	13,703	2,971	901,536	65,653	11,656	978,845	43,249	35,396
N. W. Provinces ...	1867-68...	6,896,453	4,748,842	422,336	179,500	561,693	1,741,9	110,897	14,364	1,785	953,279	66,793	11,716	1,031,788	39,122	31,172
	1868-69...	7,577,574	5,003,097	360,476	195,340	725,855	1,986	97,901	18,657	652	683,589	69,374	4,116	757,079	41,279	24,609
Punjab ...	1867-68...	4,702,818	2,202,575	259,077	98,103	720,450	1,.. 7,'	97,110	18,206	788	668,978	70,994	3,972	743,944	51,553	25,997
	1868-69...	91,23,362	2,281,402	258,113	101,027	776,803	1,975	2,366	1,637	...	100,730	18,946	183	119,859	2,087	2,115
British Burmah ...	1867-68...	221,475	156,199	650	8,101	3,544	5,'	2,972	1,707	9	131,328	17,321	152	148,801	2,713	2,810
	1868-69...	275,018	180,135	728	9,522	4,073	8	17,813	3,195	1,465	173,098	11,147	6,516	190,761	9,383	7,072
Central Provinces.	1867-68...	771,883	451,157	127,632	32,929	136,485	252,	22,211	3,070	347	147,530	11,620	3,077	162,227	9,882	5,757
	1868-69...	865,412	421,183	122,132	27,426	206,738	31·	564,649	80,381	39,999	4,916,296	377,740	117,074	5,411,110	209,709	147,439
GRAND TOTAL	1867-68...	31,364,118	16,046,449	3,320,536	1,108,784	3,631,163	6,275,	772,913	85,560	36,684	5,280,970	393,862	98,753	5,773,585	219,622	144,452
	1868-69...	34,488,040	17,267,641	3,327,916	1,175,397	4,416,115	7,34									

Bengal ...
Madras ...
Bombay ...
North-Western Provinces
Punjab ...
British Burmah ...
Central Provinces ...

umber of Letters, Newspapers, Parcels, and Books received for delivery in the Post Offices und *ctors of Post Offices, British Burmah and Central Provinces.*

LETTERS.

MED, OR FOR RE-DIRECTION, CT POST.		TOTAL NUMBER RECEIVED.				GRAND TOTAL.	DELIVERED AT OUT FOR DE
Service.	Registered.	Paid.	Unpaid.	Service.	Registered.		Paid.
17,177	48,398	7,139,035	4,854,738	202,490	447,911	12,644,174	1,006,989
15,023	53,890	7,841,639	5,577,559	126,896	475,109	14,021,203	1,007,480
64,270	39,393	7,177,912	2,056,621	303,225	228,493	9,766,251	737,758
74,127	42,117	7,956,533	2,205,838	331,806	240,622	10,734,799	789,977
412,063	25,286	6,663,533	4,653,693	2,498,636	226,824	14,042,686	952,928
454,862	31,505	7,551,148	5,358,154	2,671,777	253,863	15,834,942	1,042,675
97,491	25,782	7,458,146	6,490,748	519,827	205,282	14,674,003	814,635
74,879	30,600	8,303,429	6,990,049	435,355	225,940	15,954,773	842,382
47,207	16,116	5,423,268	3,400,322	306,284	114,219	9,244,093	585,688
52,768	18,396	5,900,165	3,557,172	310,881	119,423	9,887,641	571,868
...	105	225,019	161,859	650	8,206	395,734	98,364
71	152	279,091	188,431	799	9,674	477,995	128,356
25,086	2,577	908,368	703,722	152,718	35,506	1,800,314	155,285
18,063	4,645	1,072,150	735,463	140,195	32,071	1,979,879	125,319
663,294	157,657	34,995,281	22,321,703	3,983,830	1,266,441	62,567,255	4,351,647
689,793	181,305	38,904,155	24,612,666	4,017,709	1,356,702	68,891,232	4,508,057

PARCELS.

OR SENT TIONS.	RETAINED AT OFFICE AS UNCLAIMED, OR FOR RE-DIRECTION, OR FOR DISTRICT POST.			TOTAL NUMBER RECEIVED			GRAND TOTAL.	BOOKS AND PATTERNS.		
Service.	Paid.	Unpaid.	Service.	Paid.	Unpaid.	Service.		Number of Steamer Books delivered.	Number of Indian Book Post Packets delivered.	TOTAL.
38,786	6,237	3,219	1,364	59,874	31,619	40,150	131,643	23,377	77,827	101,204
47,318	6,791	3,947	1,895	64,958	32,713	49,213	146,884	30,412	97,777	128,189
35,342	8,052	4,750	8,383	38,939	35,510	43,725	118,174	33,414	85,896	119,310
36,626	9,034	5,034	8,313	35,905	34,393	44,939	115,237	26,252	108,309	134,561
46,365	2,921	2,950	6,346	32,108	22,037	52,711	106,856	18,201	33,670	51,871
52,287	3,717	2,693	7,414	35,031	23,284	59,701	118,016	28,530	50,816	79,346
57,859	5,164	3,364	2,694	48,413	38,760	60,553	147,726	30,343	85,445	115,788
67,402	5,622	4,022	3,424	44,744	35,194	70,826	150,764	41,610	89,462	131,072
28,480	5,811	4,787	4,490	47,090	29,396	32,970	109,456	30,258	75,090	105,348
32,056	10,084	4,679	4,053	61,637	30,676	36,109	128,422	35,273	77,339	112,612
2,427	261	78	16	2,348	2,193	2,443	6,984	5,622	7,755	13,377
3,121	338	100	28	3,051	2,910	3,149	9,110	8,010	9,540	17,550
10,610	1,373	912	1,237	10,756	7,984	11,847	30,587	8,309	9,849	18,158
12,910	923	553	748	10,805	6,310	13,658	30,773	10,225	10,039	20,264
219,869	29,819	20,060	24,530	239,528	167,499	244,399	651,426	149,524	375,532	525,056
251,720	36,509	21,028	25,875	256,131	165,480	277,595	699,206	180,312	443,282	623,594

APPENDIX No. IV.

Statement showing the number of Articles mis-sent from the Post Offices in India during the years 1867-68 *and* 1868-69.

NAMES OF POSTAL CIRCLES.	LETTERS, PAPERS, PARCELS.	
	1867-68.	1868-69.
Bengal	12,354	12,898
Madras	4,568	4,515
Bombay	21,040	29,133
North-Western Provinces	29,378	23,664
Punjab	3,173	3,811
British Burmah	170	164
Central Provinces	1,129	765
TOTAL ...	71,812	74,950

APPENDIX No. V.

Statement showing the number of Unclaimed and Refused Letters received at, and disposed of by, the Dead-Letter Offices at Calcutta, Madras, Bombay, Agra, and Lahore during the years 1868 *and* 1869.

CLASS OF LETTERS.	CALCUTTA.				MADRAS.				BOMBAY.				AGRA.				LAHORE.			
	NUMBER OF CHARGEABLE LETTERS UNCLAIMED OR REFUSED IN		PROPORTION.		NUMBER OF CHARGEABLE LETTERS UNCLAIMED OR REFUSED IN		PROPORTION.		NUMBER OF CHARGEABLE LETTERS UNCLAIMED OR REFUSED IN		PROPORTION.		NUMBER OF CHARGEABLE LETTERS UNCLAIMED OR REFUSED IN		PROPORTION.		NUMBER OF CHARGEABLE LETTERS UNCLAIMED OR REFUSED IN		PROPORTION.	
	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.
The number of unclaimed paid letters returned to senders	28,761	40,916	62·33	59·55	7,116	12,287	22·25	39·27	32,956	32,148	79·84	59·93	11,347	11,330	65·59	69·37	20,538	20,499	84·28	88·49
Ditto that cannot be disposed of	17,380	27,788	37·66	40·44	24,866	18,998	77·74	60·72	8,320	21,492	2·15	40·06	5,952	5,002	34·40	30·62	3,829	2,659	15·71	11·50
TOTAL ...	46,141	68,704	99·99	99·99	31,982	31,285	99·99	99·94	41,276	53,640	99·99	99·99	17,299	16,332	99·99	99·99	24,367	23,158	99·99	99·99
The number of unclaimed bearing letters returned to senders ...	106,027	121,676	36·19	35·46	15,487	25,018	17·35	26·91	130,225	171,756	56·08	58·57	63,475	70,375	24·76	25·96	71,501	82,334	55·30	56·19
Ditto that cannot be disposed of	186,905	221,388	63·80	64·53	73,730	67,948	82·64	73·8	101,984	121,488	43·91	41·42	192,814	200,641	75·23	74·03	57,777	64,185	44·69	43·80
TOTAL ...	292,932	343,064	99·99	99·99	89,217	92,966	99·99	99·99	232,209	293,244	99·99	99·99	256,289	271,016	99·99	99·99	129,278	146,519	99·99	99·99
The number of refused paid letters returned to senders	872	965	79·70	7·90	203	167	12·11	12·62	3,400	2,688	89·47	85·17	1,195	1,140	70·68	74·21	731	373	86·30	85·15
Ditto that cannot be disposed of	222	396	2·29	29·09	1,473	1,156	87·88	87·37	400	468	10·52	14·82	537	396	29·31	25·78	116	65	13·69	14·84
TOTAL ...	1,094	1,361	99·99	99·99	1,676	1,323	99·99	99·99	3,800	3,156	99·99	99·99	1,832	1,536	99·99	99·99	847	438	99·99	99·99
The number of refused bearing letters returned to senders ...	60,192	65,956	34·69	34·99	8,348	14,296	14·15	21·49	71,275	94,392	54·48	55·61	59,834	64,513	30·61	30·84	29,683	48,104	59·10	61·23
Ditto that cannot be disposed of	113,356	127,504	65·31	65·00	52,941	52,222	85·51	78·50	59,529	75,336	45·51	44·38	135,611	144,619	69·38	69·15	20,540	30,450	40·89	38·76
TOTAL ...	173,548	193,460	99·99	99·99	61,289	66,518	99·99	99·99	130,804	169,728	99·99	99·99	195,445	209,132	99·99	99·99	50,223	78,554	99·99	99·99

ABSTRACT.

	1567-68.	1568-69.
Total number of all classes of letters returned to senders	723,266	880,933
Ditto ditto that could not be disposed of	1,055,962	1,184,201
GRAND TOTAL ...	1,779,248	2,065,134

APPENDIX No. VI.

Statement showing the number of Ordinary Postage Labels of each denomination sold in each of the Presidencies and Provinces, with gross value and discount thereof, during the years 1867-68 *and* 1868-69.

NAMES OF PRESIDENCIES AND PROVINCES.	¼-Pie Labels.	½-Anna Envelopes.	½-Anna Note-paper.	1-Anna Envelopes.	½-Anna Labels.	1-Anna Labels.	2-Anna Labels.	4-Anna Labels.	6-Anna Labels.	6-Anna and ¼-Pie Labels.	8-Anna Labels.	GROSS VALUE.	DISCOUNT.
	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Rs. A. P.	Rs. A. P.
Bengal	310,183	25,743	241,024	18,960	4,489,966	2,446,182	701,684	633,668	447	61,122	330,962	7,53,530 6 7	31,010 15 1½
Madras	171,003	14,672	158,797	7,861	6,664,640	1,292,807	363,747	374,577	.....	22,747	84,692	4,93,402 15 11	26,413 14 9
Bombay	303,840	26,366	302,653	11,624	6,947,098	1,646,578	619,097	442,558	.....	58,117	330,470	7,21,744 5 5	31,149 4 7
North-Western Provinces	132,487	83,286	311,577	20,898	4,610,437	1,431,454	247,139	338,147	316	22,161	74,382	4,16,961 15 3	23,045 1 11
Punjab	129,625	17,203	307,322	13,248	3,663,407	857,709	206,738	252,755	2	20,613	92,988	3,29,479 2 7	18,903 3 9
British Burmah	61,985	448	944	976	190,164	200,987	107,894	67,945	80	17,439	48,229	82,079 0 8	4,698 10 3
Central Provinces	19,339	2,694	33,765	3,035	572,177	192,605	55,872	68,814	.....	2,810	11,957	63,503 15 5	3,407 10 11½
TOTAL OF 1868-69	1,128,462	170,412	† 1,356,082	76,602	27,137,889	8,068,222	2,302,171	2,174,464	845	204,949	973,680	28,59,801 13 10	1,38,628 11 4
TOTAL OF 1867-68	803,163	313,817	* 550,416	202,622	25,976,300	7,663,090	1,957,845	2,019,013	5,214	365,205	534,520	25,42,261 5 6	1,24,805 0 0

* 16 half-anna note-sheets sold at 12 annas instead of 10 annas.

† 307,694 half-anna [illegible] sold at the rate of 10 annas per packet of 16.

APPENDIX No. VI A.

Statement exhibiting the number of Service Postage Labels of each denomination sold in each of the Presidencies and Provinces, and the gross value thereof, during the years 1867-68 *and* 1868-69.

Names of Presidencies and Provinces.	½-Anna Labels.	1-Anna Labels.	2-Anna Labels.	4-Anna Labels.	8-Anna Labels.	Gross Value.
	Number.	Number.	Number.	Number.	Number.	Rs. A. P.
Bengal	78,265	236,456	136,939	53,984	26,752	61,213 10 6
Madras	130,675	123,110	60,821	24,785	5,151	28,152 5 6
Bombay	97,933	203,579	119,647	42,826	14,039	48,465 15 6
North-Western Provinces	150,683	336,067	173,148	76,409	17,443	75,180 4 6
Punjab	88,246	236,442	143,973	53,111	15,043	56,331 3 0
British Burmah	9,404	17,354	5,935	2,604	705	3,123 14 0
Central Provinces	24,586	54,293	35,562	12,187	3,048	13,177 10 0
Total of 1868-69 ...	579,792	1,207,301	676,025	265,906	82,181	2,85,644 15 0
Total of 1867-68 ...	722,808	1,182,358	690,776	297,215	122,068	3,18,169 14 0

APPENDIX No. VII.

Statement showing the correspondence sent to, and received from, the District Post by the General Post in each Postal Circle during the year 1868-69.

Names of Presidencies and Provinces.	Total number sent to District Post.			Number received back from District Post.			Received for despatch from District Post.		
	Letters.	Newspapers.	Parcels.	Letters.	Newspapers.	Parcels.	Letters.	Newspapers.	Parcels.
Bengal	653,853	31,564	1,412	96,870	446	156	369,872	1,290	539
Madras	1,086,611	163,031	19,881	92,732	2,912	527	650,421	23,763	4,053
Bombay	908,788	27,979	3,264	68,373	596	112	402,665	1,154	1,182
North-Western Provinces	1,097,749	29,711	3,712	151,545	838	108	823,205	3,692	999
Punjab	688,637	28,524	8,499	94,511	1,658	167	462,699	3,643	3,133
Central Provinces	262,723	10,732	2,722	25,548	148	10	241,245	728	554
Total ...	4,698,361	291,232	39,481	529,579	6,598	1,080	2,950,107	34,270	10,451

APPENDIX No. VIII.

Statement showing the number of Complaints of various descriptions made by the public in the years 1867-68 *and* 1868-69.

Names of Postal Circles.	Ascertained to be well founded.		Ascertained to be groundless.		Enquiry unsuccessful.		Under enquiry.		Total.	
	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.
Bengal	194	250	167	240	378	330	30	18	769	838
Madras	225	266	192	194	123	179	45	22	585	661
Bombay *	163	...	173	...	175	...	...	...	511	... *
North-Western Provinces	99	89	26	24	63	66	8	6	196	185
Punjab	33	48	28	48	6	18	...	1	67	115
British Burmah	12	18	18	13	3	9	3	2	36	42
Central Provinces	12	7	5	8	4	8	1	1	22	24
Total ...	738	678	609	527	752	610	87	50	2,186	1,865

* Information not available, owing to the destruction, by fire, of the Bombay Post Office in March 1869.

APPENDIX No. IX.

Statement showing the Offences committed by Post Office Officials during the year 1868-69.

Names of Presidencies and Provinces.	Number of ascertained cases of dishonesty on the part of Post Office Officials.		Total.
	Number of legal convictions.	Number of cases departmentally punished.	
Bengal	17	26	43
Madras	8	4	12
Bombay	12	19	31
North-Western Provinces	16	1	17
Punjab	16	2	18
British Burmah	...	...	...
Central Provinces	4	5	9
Total ...	73	57	130

APPENDIX No. X.

Statement showing the Staff of Officers, Clerks, and others of the Post Office Department in India on the 31st March 1869.

Designation.	Bengal.		Madras.		Bombay.		N. W. Provinces.		Punjab.		British Burmah		Central Provinces.		Total.	
	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.	1867-68.	1868-69.
Director General of the Post Office of India	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Deputy Director General	...	1	...	...	...	...	...	...	...	...	...	...	...	...	.....	1
Personal Assistant to the Director General and Compiler of Post Office Accounts	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Post Masters General and Chief Inspectors exercising the powers of a Post Master General	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	7
Inspecting Post Masters, including Supernumerary and Sub-Inspectors...	14	* 15	14	15	13	14	15	33	16	+ 20	...	...	3	2	75	99
Post Masters and Deputy Post Masters	377	458	224	284	309	411	344	389	188	282	7	7	50	72	1,499	1,903
Clerks (English and Vernacular)	348	456	258	277	289	307	283	296	214	276	22	23	37	49	1,451	1,684
Postmen and other servants	826	1,037	518	717	729	944	926	1,105	367	511	34	36	98	162	3,498	4,512
Road Establishment consisting of Superintendents, Overseers, Mootsuddees, Runners, Bearers, Coachmen, Syces, Boatmen and others	3,207	3,312	3,295	3,288	2,440	2,445	2,732	2,471	1,917	2,200	189	152	968	1,131	14,748	15,059
Total ...	4,775	5,282	4,310	4,582	3,781	4,122	4,301	4,295	2,703	3,350	253	219	1,157	1,417	21,280	23,267

* Including one Inspector attached to the Compiler's Office.
† Including Chief Inspector of Sindh.

APPENDIX No. XI.

Comparative Statement showing the Receipts of the Post Office Department for the years 1867-68 and 1868-69.

Head of Receipts.	1867-68.	1868-69.	Increase.	Decrease.
Postal Service.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Postage on Letters.				
Bengal	2,73,464 12 9	3,06,888 7 4	33,423 10 7	
Madras	1,31,076 7 10	1,42,297 9 10	11,221 2 0	
Bombay	(a) 703 9 3 2,60,053 10 3	2,89,062 3 8	28,305 0 2	
North-Western Provinces	3,67,310 5 0	3,92,475 4 3	25,164 15 3	
Punjab	1,87,940 8 1	1,94,010 3 9	6,069 11 8	
British Burmah	14,372 0 11	16,178 5 0	1,806 4 1	
Central Provinces	30,054 10 1	34,861 14 3	4,807 4 2	
Total ...	12,64,976 0 2	13,75,774 0 1	1,10,797 15 11	
Postage on Bunghy Parcels.				
Bengal	49,849 8 3	46,658 14 10	... ...	3,190 9 5
Madras	43,066 12 11	44,999 11 5	1,932 14 6	
Bombay	(a) 1 10 0 36,914 4 4	36,597 14 2	... ...	318 0 2
North-Western Provinces	73,618 3 5	63,733 12 7	... ...	9,884 6 10
Punjab	43,968 1 5	41,166 3 1	... ...	2,801 14 4
British Burmah	3,149 13 8	3,966 7 8	816 10 0	
Central Provinces	17,407 12 0	13,079 4 0	... ...	4,328 8 0
Total ...	2,67,976 2 0	2,50,202 3 9	2,749 8 6	20,523 6 9
* *Sale of Ordinary Postage Stamps.*				
Bengal	6,48,134 12 2	7,53,530 6 7	1,05,395 10 5	
Madras	4,54,450 8 11	4,93,402 15 11	38,952 7 0	
Bombay	6,10,717 8 3	7,21,744 5 5	1,11,026 13 2	
North-Western Provinces	3,92,674 4 1	4,16,061 15 3	23,387 11 2	
Punjab	3,16,016 10 11	3,29,479 2 7	13,462 7 8	
British Burmah	59,973 8 9	82,079 0 8	22,105 7 11	
Central Provinces	60,294 0 5	63,503 15 5	3,209 15 0	
Total ...	25,42,261 5 6	28,59,801 13 10	3,17,540 8 4	

(a). On account of Abyssinian Expedition.

* Discount on sale of stamps, Rs. 1,38,628-11-4.

APPENDIX No. XI,—*continued.*

HEAD OF RECEIPTS.	1867-68.	1868-69.	Increase.	Decrease.
	Rs. A. P.	Rs. A. P.	Rs A. P.	Rs. A. P.
POSTAL SERVICE,—*continued.*				
Sale of Service Postage Stamps.				
Bengal	81,583 1 6	61,213 10 6	... ...	20,369 7 0
Madras	31,720 0 6	28,152 5 6	... ...	3,567 11 0
Bombay	46,845 9 0	48,465 15 6	1,620 6 6	
North-Western Provinces	79,511 1 6	75,180 4 6	... ...	4,330 13 0
Punjab	60,717 8 0	56,331 3 0	... ...	4,386 5 0
British Burmah	3,554 4 6	3,123 14 0	... ...	430 6 6
Central Provinces	14,238 5 0	13,177 10 0	... ...	1,060 11 0
TOTAL ...	3,18,169 14 0	2,85,644 15 0	1,620 6 6	34,145 5 6
Official Postage.				
Bengal	4,63,479 1 0	5,57,952 11 0	94,473 10 0	
Madras	2,95,611 10 0	3,69,514 8 0	73,902 14 0	
Bombay	4,54,607 11 0	5,69,975 8 0	1,15,367 13 0	
North-Western Provinces	2,59,872 14 0	3,66,680 8 0	1,06,817 10 0	
Punjab	4,06,081 0 0	4,70,413 7 0	64,332 7 0	
British Burmah	19,107 12 0	22,404 2 0	3,296 6 0	
Central Provinces	92,909 14 0	1,12,420 13 0	19,510 15 0	
TOTAL ...	19,91,669 14 0	24,69,371 9 0	4,77,701 11 0	
Steam Postage due by the London Post Office.				
Bengal	33,362 6 4	7,272 3 0	...	26,090 3 4
Madras	16,315 10 8	2,708 2 6	...	13,607 8 2
Bombay	1,36,104 12 0	2,04,603 3 4	68,498 7 4	
TOTAL ...	1,85,782 13 0	2,14,583 8 10	68,498 7 4	39,697 11 6
Miscellaneous.				
Bengal	21,330 13 6	6,987 0 2	... ...	14,343 13 4
Madras	5,052 1 0	8,874 5 5	3,822 4 5	
Bombay	(A) 5,456 14 0 14,983 7 2 (B) 132 0 0	* 144 0 0 (a) 17,108 4 1	... ...	3,320 1 1
North-Western Provinces	10,027 15 6	4,866 6 5	... ...	5,161 9 1
Punjab	3,759 7 10	3,194 9 9	... ...	564 14 1
British Burmah	(A) 153 0 0 554 3 4	(b) 776 13 5	69 10 1	
Central Provinces	1,677 10 0	2,272 13 0	595 3 0	
TOTAL ...	63,127 8 4	44,224 4 3	4,487 1 6	23,390 5 7
Total of Postal Service.				
Bengal	15,71,204 7 6	17,40,503 5 5	1,69,298 13 11	
Madras	9,77,293 3 10	10,89,949 10 7	1,12,656 6 9	
Bombay	15,66,520 15 3	18,87,701 6 2	3,21,180 6 11	
North-Western Provinces	11,83,014 11 6	13,19,008 3 0	1,35,993 7 6	
Punjab	10,18,483 4 3	10,94,594 13 2	76,111 8 11	
British Burmah	1,00,861 11 2	1,28,528 10 9	27,663 15 7	
Central Provinces	2,16,582 3 6	2,39,316 5 8	22,734 2 2	
TOTAL ...	66,33,963 9 0	74,99,602 6 9	8,65,638 13 9	
Deduct amount due to the London Post Office.				
Bengal	1,78,232 9 2	2,07,112 8 10	28,879 15 8	
Madras	47,344 8 4	37,838 1 8	... ...	9,506 6 8
Bombay	3,23,939 7 0	3,93,931 0 0	69,991 9 0	
TOTAL ...	5,49,516 8 6	6,38,881 10 6	98,871 8 8	9,506 6 8

(A). Passage in dâk boats.
(B). Contribution from Native States.

(a). Including Rs. 6,403-2-0 on account of passage money in dâk boats.
(b). Ditto „ 128-0-0 ditto ditto ditto.
* Contributions from Native States.

APPENDIX No. XI,—*continued.*

Head of Receipts.	1867-68.	1868-69.	Increase.	Decrease.
	Rs. A. P.	Rs. A. P.	Rs A. P.	Rs. A. P.
Postal Service,—*continued.*				
Sale of Service Postage Stamps.				
Bengal	81,583 1 6	61,213 10 6	... ...	20,369 7 0
Madras	31,720 0 6	28,152 5 6	... ...	3,567 11 0
Bombay	46,845 9 0	48,465 15 6	1,620 6 6	
North-Western Provinces	79,511 1 6	75,180 4 6	... ...	4,330 13 0
Punjab	60,717 8 0	56,331 3 0	... ...	4,386 5 0
British Burmah	3,554 4 6	3,123 14 0	... ...	430 6 6
Central Provinces	14,238 5 0	13,177 10 0	... ...	1,060 11 0
TOTAL ...	3,18,169 14 0	2,85,644 15 0	1,620 6 6	34,145 5 6
Official Postage.				
Bengal	4,63,479 1 0	5,57,952 11 0	94,473 10 0	
Madras	2,95,611 10 0	3,69,514 8 0	73,902 14 0	
Bombay	4,54,607 11 0	5,69,975 8 0	1,15,367 13 0	
North-Western Provinces	2,59,872 14 0	3,66,690 8 0	1,06,817 10 0	
Punjab	4,06,081 0 0	4,70,413 7 0	64,332 7 0	
British Burmah	19,107 12 0	22,404 2 0	3,296 6 0	
Central Provinces	92,909 14 0	1,12,420 13 0	19,510 15 0	
TOTAL ...	19,91,669 14 0	24,69,371 9 0	4,77,701 11 0	
Steam Postage due by the London Post Office.				
Bengal	33,362 6 4	7,272 3 0	... ...	26,090 3 4
Madras	16,315 10 8	2,708 2 6	... ...	13,607 8 2
Bombay	1,36,104 12 0	2,04,903 3 4	68,198 7 4	
TOTAL ...	1,85,782 13 0	2,14,583 8 10	68,198 7 4	39,697 11 6
Miscellaneous.				
Bengal	21,330 13 6	6,987 0 2	... ...	14,343 13 4
Madras	5,052 1 0	8,874 5 5	3,822 4 5	
Bombay	(A) 5,456 14 0 14,983 7 2 (B) 132 0 0	* 144 0 0 (a) 17,108 4 1	... ...	3,320 1 1
North-Western Provinces	10,027 15 6	4,866 6 5	... ...	5,161 9 1
Punjab	3,759 7 10	3,194 9 9	... ...	564 14 1
British Burmah	(A) 153 0 0 554 3 4	(b) 776 13 5	69 10 1	
Central Provinces	1,677 10 0	2,272 13 0	595 3 0	
TOTAL ...	63,127 8 4	44,224 4 3	4,487 1 6	23,390 5 7
Total of Postal Service.				
Bengal	15,71,204 7 6	17,40,503 5 5	1,69,298 13 11	
Madras	9,77,293 3 10	10,89,949 10 7	1,12,656 6 9	
Bombay	15,66,520 15 3	18,87,701 6 2	3,21,180 6 11	
North-Western Provinces	11,83,014 11 6	13,19,008 3 0	1,35,993 7 6	
Punjab	10,18,483 4 3	10,94,594 13 2	76,111 8 11	
British Burmah	1,00,864 11 2	1,28,528 10 9	27,663 15 7	
Central Provinces	2,16,582 3 6	2,39,316 5 8	22,734 2 2	
TOTAL ...	66,33,963 9 0	74,99,602 6 9	8,65,638 13 9	
Deduct amount due to the London Post Office.				
Bengal	1,78,232 9 2	2,07,112 8 10	28,879 15 8	
Madras	47,344 8 4	37,838 1 8	... ...	9,506 6 8
Bombay	3,23,939 7 0	3,93,931 0 0	69,991 9 0	
TOTAL ...	5,49,516 8 6	6,38,881 10 6	98,871 8 8	9,506 6 8

(A). Passage in dák boats.
(B). Contribution from Native States.

(a). Including Rs. 6,403-2-0 on account of passage money in dák boats.
(b). Ditto „ 128-0-0 ditto ditto ditto.
* Contributions from Native States.

APPENDIX No. XI,—*continued.*

Head of Receipts.	1867-68.	1868-69.	Increase.	Decrease.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Postal Service,—*concluded.*				
Net Amount.				
Bengal	13,92,971 14 4	15,33,390 12 7	1,40,418 14 3	
Madras	9,29,948 11 6	10,52,111 8 11	1,22,162 13 5	
Bombay	12,42,581 8 3	14,93,770 6 2	2,51,188 13 11	
North-Western Provinces	11,83,014 11 6	13,19,008 3 0	1,35,993 7 6	
Punjab	10,18,483 4 3	10,94,594 13 2	76,111 8 11	
British Burmah	1,00,864 11 2	1,28,528 10 9	27,663 15 7	
Central Provinces	2,16,582 3 6	2,39,316 5 8	22,734 2 2	
Grand Total ...	60,84,447 0 6	68,60,720 12 3	7,76,273 11 9	
Non-Postal Branches.				
Bullock Train.				
Bengal	88,950 11 8	(a) 12,711 0 0 2,77,598 2 6	2,01,358 6 10	
North-Western Provinces	... ...	(a) 5,594 0 0 2,66,181 9 1	2,71,775 9 1	
Punjab	... ...	(a) 15,337 0 0 4,36,148 11 8	4,51,485 11 8	
Total ...	88,950 11 8	10,13,570 7 3	9,24,619 11 7	
Military Van Dák.				
Punjab	1,39,382 3 8	1,66,426 9 7	27,044 5 11	
Dák Bearers.				
North-Western Provinces	808 11 9	... ...	... ...	808 11 9
Passenger Service.				
Bengal	14,133 14 0	24,561 3 6	10,427 5 6	
Madras	1,360 4 0	1,569 2 0	208 14 0	
Bombay	7,359 15 6	11,352 1 6	3,992 2 0	
North-Western Provinces	22,898 14 8	23,341 10 2	442 11 6	
Punjab	25,158 11 9	36,435 4 0	11,276 8 3	
Central Provinces	12,523 7 0	36,846 7 3	24,323 0 3	
Total ...	83,435 2 11	1,34,105 12 5	50,670 9 6	
Total of Non-Postal Branches.				
Bengal	1,03,084 9 8	3,14,870 6 0	2,11,785 12 4	
Madras	1,360 4 0	1,569 2 0	208 14 0	
Bombay	7,359 15 6	11,352 1 6	3,992 2 0	
North-Western Provinces	23,707 10 5	2,95,117 3 3	2,71,409 8 10	
Punjab	1,64,540 15 5	6,54,347 9 3	4,89,806 9 10	
Central Provinces	12,523 7 0	36,846 7 3	24,323 0 3	
Grand Total ...	3,12,576 14 0	13,14,102 13 3	10,01,525 15 3	

(a). On account of Service packages received from the Military Department at the close of March 1869.

APPENDIX No. XI,—*continued.*

Head of Charges.	1867-68.	1868-69.	Increase.	Decrease.
Postal Service.				
Salaries and Establishment.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Director General of Post Office	46,215 13 10	53,012 4 9	6,796 6 11	
Compiler of Postal Accounts	37,454 3 5	54,977 10 5	17,523 7 0	
Bengal	6,08,410 8 7	6,83,780 15 2	75,370 6 7	
Madras	5,19,667 9 8	5,81,659 3 11	61,991 10 3	
Bombay	(c) 61 15 0 5,97,133 14 1	6,91,662 11 10	94,466 14 9	
North-Western Provinces	5,23,240 11 11	5,67,242 9 1	44,001 13 2	
Punjab	2,88,215 5 11	3,25,880 0 2	37,664 10 3	
British Burmah	72,893 13 0	74,984 6 6	2,090 9 6	
Central Provinces	1,14,289 1 3	1,28,821 4 7	14,532 3 4	
Total	28,07,583 9 8	31,62,021 2 5	3,54,438 1 9	
Miscellaneous and Contingent Charges.				
Director General of Post Office	3,434 2 1	6,133 5 4	.....	300 12 9
Compiler of Post Office Accounts	8,183 0 5	4,095 8 1	.....	4,087 8 4
Bengal	1,35,429 2 4	*301 4 10 †1,74,415 3 3	39,287 5 9	
Madras	91,004 4 7	*9 6 8 ‡95,151 14 0	4,157 0 1	
Bombay	(c) 6,421 13 6 1,91,796 12 2	*28 2 0 (a) 3,03,110 15 8	1,04,920 8 0	
North-Western Provinces	81,004 12 11	*12 0 0 74,099 4 8	.....	6,902 8 3
Punjab	42,326 3 3	55,342 7 3	13,016 4 0	
British Burmah	2,467 3 9	5,745 8 8	3,278 4 11	
Central Provinces	23,320 12 8	(b) 67,915 9 6	44,594 12 10	
Total	5,88,388 3 8	7,86,351 9 11	2,09,254 3 7	11,290 13 4
Mail Cart (after deducting charges for Passenger Service.)				
Bengal	44,303 2 4	45,719 1 5	1,415 15 1	
Madras	1,48,900 2 3	1,58,618 6 11	9,718 4 8	
Bombay	2,41,082 14 3	2,85,802 7 9	44,719 9 6	
North-Western Provinces	4,14,188 1 2	4,31,491 10 4	17,303 9 2	
Punjab	2,50,435 2 8	2,67,083 9 5	16,648 6 9	
British Burmah	.....	.....	.....	
Central Provinces	2,36,045 11 11	2,01,256 4 0	.....	34,789 7 11
Total	13,34,955 2 7	13,89,971 7 10	89,805 13 2	34,789 7 11
Bounty Money.				
Bengal	1,165 14 0	999 7 0		166 7 0
Madras	969 15 0	502 1 0		467 14 0
Bombay	481 1 0	474 9 0		6 8 0
Punjab	100 10 0	.....		100 10 0
British Burmah	1,863 2 0	1,437 11 0		425 7 0
Total	4,580 10 0	3,413 12 0		1,166 14 0
Construction and Repairs of Buildings.				
Bengal	10,128 6 4	16,925 0 2	6,796 9 10	
Madras	2,384 10 9	2,781 15 3	397 4 6	
Bombay	507 14 11	696 2 1	188 3 2	
North-Western Provinces	5,423 10 2	5,147 11 6	.....	275 14 8
Punjab	636 12 3	1,126 5 6	489 9 3	
British Burmah	.....	.....	.....	
Central Provinces	351 15 1	1,766 13 0	1,414 13 11	
Total	19,433 5 6	28,443 15 6	9,286 8 8	275 14 8

* On account of Law charges.
† Including Rs. 116 on account of Steamer hire from Kooshtea to Dacca.
‡ Rs. 3,770-4-10 on account of sums embezzled by the Cashier of the Madras Post Office written off under orders of Government in the Financial Department, No. 3553, dated 28th January 1868.
(a). Rs. 1,25,839-7-6, on account of Special Trains.
(b). Rs. 37,461-14-0 ditto Express ditto.
(c). On account of Abyssinian Expedition, since excluded under Comptroller General's instruction.

APPENDIX No. XI,—*concluded.*

Head of Charges.	1867-68.	1868-69.	Increase.	Decrease.
Postal Service,—*concluded.*	Rs. A. P.	R. A. P.	Rs. A. P.	Rs. A. P.
Total of Postal Service.				
Director General of Post Office	52,649 15 11	59,145 10 1	6,495 10 2	
Compiler of Post Office Accounts	45,637 3 10	59,073 2 6	13,435 14 8	
Bengal	7,99,437 1 7	9,22,140 15 10	1,22,703 14 3	
Madras	7,62,926 10 3	8,38,722 15 9	75,796 5 6	
Bombay	10,37,486 4 11	12,81,775 0 4	2,44,288 11 5	
North-Western Provinces	10,23,857 4 2	10,77,984 3 7	54,126 15 5	
Punjab	5,81,714 2 1	6,49,432 6 4	67,718 4 3	
British Burmah	77,224 2 9	82,167 10 2	4,943 7 5	
Central Provinces	3,74,007 8 11	3,99,759 15 1	25,752 6 2	
Grand Total ...	47,54,940 6 5	53,70,201 15 8	6,15,261 9 3	
Non-Postal Branches.				
Bullock Train.				
	65,172 6 9	3,66,819 8 6	3,01,647 1 9	
Bengal	2,745 4 0	2,79,210 13 8	2,76,465 9 8	
North-Western Provinces	300 0 0	2,42,909 6 0	2,42,609 6 0	
Punjab				
Total ...	68,217 10 9	8,88,939 12 2	8,20,722 1 5	
Military Transport Train.				
Central Provinces	.....	1,84,611 10 9	1,84,611 10 9	
Military Van Dâk.				
Punjab	1,37,996 7 0	1,68,533 4 3	30,536 13 3	
Dâk Bearers.				
North-Western Provinces	808 9 9	.....	.....	808 9 9
Passenger Service.				
Bengal	14,133 14 0	24,561 3 6	10,427 5 6	
Madras	1,360 4 0	1,569 2 0	208 14 0	
Bombay	7,359 15 6	11,352 1 6	3,992 2 0	
North-Western Provinces	22,898 14 8	23,341 10 2	442 11 6	
Punjab	25,158 11 9	36,435 4 0	11,276 8 3	
Central Provinces	12,523 7 0	36,846 7 3	24,323 0 3	
Total ...	83,435 2 11	1,34,105 12 5	50,670 9 6	
Total of Non-Postal Branches.				
Bengal	79,306 4 9	3,91,380 12 0	3,12,074 7 3	
Madras	1,360 4 0	1,569 2 0	208 14 0	
Bombay	7,359 15 6	11,352 1 6	3,992 2 0	
North-Western Provinces	26,452 12 5	3,02,552 7 10	2,76,099 11 5	
Punjab	1,63,455 2 9	417,877 14 3	2,84,422 11 6	
Central Provinces	12,523 7 0	2,21,458 2 0	2,08,934 11 0	
Grand Total ...	2,[illegible]7 14 5	13,76,190 7 7	10,85,732 9 2	

APPENDIX No. XII.

Comparative Abstract of Receipts and Charges.

Head of Receipts.	1867-68.			1868-69		
I.—Postal Service.	Rs.	A.	P.	Rs.	A.	P.
Cash Receipts	15,32 952	2	2	16,25,976	3	10
Sale of Ordinary Postage Stamps	25,42,261	5	6	28,59.801	13	10
Sale of Service Postage Stamps	3,18,169	14	0	2.85,644	15	0
Official Postage	19,91,669	14	0	24.69,371	9	0
Due by the London Post Office	1,85.782	13	0	2,14.583	8	10
Miscellaneous, *i. e.*, sale of waste paper, fines, savings, &c.	63,127	8	4	44.221	1	3
Total ...	66,33,963	9	0	74.99.602	6	9
Deduct amount due to the London Post Office ...	5,49,516	8	6	6.38,881	10	6
Net Amount ...	60,84,447	0	6	68,60.720	12	3
II.—Non-Postal Branches.						
Bullock Train	88.950	11	8	10.13,570	7	3
Military Van Dák, Punjab	1,39,382	3	8	1.66.126	9	7
Dák Bearers	808	11	9	*Nil*		
Mail Cart and Parcel Van Passenger Service ...	83,435	2	11	1.31.105	12	5
Total ...	3,12.576	14	9	15.11.[illegible]	[illegible]	[illegible]

Head of Charges.	1867-68.			1868-69.		
I.—Postal Service.	Rs.	A.	P.	Rs.	A.	P.
Salaries and Establishment	28,07,583	0	8	31,62,021	2	5
Miscellaneous Contingent Charges	5,88,388	3	8	7,86,351	9	11
Mail Cart (after deducting charges for Passenger Service)	13,34,955	2	7	13,89,971	7	10
Bounty Money due to Ship Captains for the conveyance of Mails	4,580	10	0	3,413	12	0
Construction and Repairs of Buildings	19,433	5	6	28,443	15	6
Total ...	47,54,940	6	5	53,70,201	15	8
II.—Non-Postal Branches.						
Bullock Train	68,217	10	9	8,88,939	12	2
Military Transport Train	.....			1,84,611	10	9
Military Van Dák, Punjab	1,37.996	7	0	1.68,533	4	3
Dák Bearers	808	9	9	*Nil*		
Mail Cart and Parcel Van Passenger Service ...	83.435	2	11	1,34,105	12	5
Total ...	2,90,457	14	5	13,76,190	7	7

APPENDIX No. XIII.

Statement showing the estimated number of Letters and Newspapers received for delivery in the Post Office of India during the years 1854-55 *to* 1868-69.

Names of Presidencies and Provinces.	1854-55.	1855-56.	1856-57.	1857-58.	1858-59.	1859-60.	1860-61.	1861-62.	1862-63.	1863-64.	1864-65.	1865-66.	1866-67.	1866-67, exclusive of Eastern Settlements.	1867-68.	1868-69.
Bengal	5,890,380	6,518,144	7,538,496	8,423,445	9,300,504	9,177,492	9,054,510	9,357,518	9,729,618	9,734,709	11,167,741	12,614,453	13,036,977	12,920,607	13,822,352	15,236,422
Madras	5,466,672	5,707,464	7,129,044	7,773,720	8,108,191	8,264,857	8,937,428	8,732,297	8,650,578	8,836,562	9,172,172	9,732,145	10,471,156	10,471,156	10,929,753	11,917,657
Bombay	6,324,260	7,101,768	8,709,828	11,997,168	15,145,272	12,978,684	12,275,421	10,645,100	11,412,461	12,952,291	14,138,763	14,395,039	13,654,313	13,654,313	15,165,672	17,123,690
North-Western Provinces	11,136,238	12,676,584	13,883,052	14,503,644	18,121,068	17,367,072	16,709,741	12,094,231	12,390,673	13,065,577	14,143,361	15,333,524	15,520,937	15,520,937	15,652,918	16,986,561
Punjab	...	...	...	...	...	...	...	5,345,387	6,126,964	6,456,594	6,852,907	7,368,105	9,268,617	9,268,617	10,001,172	10,631,585
British Burmah	...	...	...	...	...	...	...	388,355	434,360	480,771	476,702	488,638	502,711	502,711	515,593	626,796
Central Provinces	...	...	...	...	...	...	...	...	...	...	...	...	1,780,746	1,780,746	1,991,075	2,142,106
Total ...	28,797,600	32,301,960	37,260,420	42,307,980	50,978,035	47,788,105	46,977,110	46,565,888	48,804,654	51,556,504	55,986,646	59,931,904	64,235,357	64,118,987	67,978,365	74,664,917

APPENDIX No. XIV.

Account showing the Gross Revenue, Cost of Management, and Net Revenue of the Post Office Department in India from 1853-54 *to* 1868-69.

Years.	Receipts, exclusive of fares from Passengers by Mail Cart and Parcel Vans.	Official Postage.	Total.	Disbursements, exclusive of Bullock Train, Military Transport Train, and charges connected with the conveyance of Passengers.	Excess of Receipts.	Deficit, if official postage be not taken into account.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1853-54	20,48,454 4 9	24,71,168 15 1	45,19,623 3 10	24,37,209 15 4	20,82,413 4 6	3,88,755 10 7
1854-55	19,86,912 1 1	13,00,000 0 0	32,86,912 1 1	27,39,376 0 4	5,47,536 0 9	7,52,463 15 3
1855-56	15,90,524 5 5	16,20,662 6 9	32,11,186 12 2	29,44,501 1 10	2,66,685 10 4	13,53,976 12 5
1856-57	18,50,841 3 9	18,62,006 13 6	37,12,851 1 3	29,03,289 5 2	8,09,561 12 1	10,52,445 1 5
1857-58	17,49,814 1 9	18,53,210 15 5	36,03,025 1 2	35,92,848 8 0	10,176 9 2	18,43,034 6 3
1858-59	24,14,952 9 7	25,25,189 2 0	49,40,141 11 7	35,20,092 4 9	14,20,049 6 10	11,05,139 11 2
1859-60	25,92,233 5 10	27,47,012 11 0	53,39,246 0 10	37,37,911 15 3	16,01,334 1 7	11,45,678 9 5
1860-61	27,34,279 7 6	23,84,734 8 8	51,19,014 0 2	38,60,798 12 7	12,58,215 3 7	11,26,519 5 1
1861-62	28,04,846 11 10	28,68,833 3 2	56,73,679 15 0	37,99,755 10 8	18,73,924 4 4	9,94,908 14 10
1862-63	30,20,682 14 8	31,92,983 12 8	62,13,666 11 4	37,37,535 12 7	24,76,130 14 9	7,16,852 13 11
1863-64	32,07,045 2 2	35,58,546 13 0	67,65,591 15 2	38,76,162 15 6	28,89,428 15 8	6,69,117 13 4
1864-65	34,16,579 6 6	40,20,822 10 9	74,37,402 1 3	39,30,579 4 2	35,06,822 13 1	5,13,999 13 8
1865-66	35,59,268 9 3	50,08,003 7 3	85,67,272 0 6	41,88,625 11 7	43,78,646 4 11	6,29,357 2 4
1866-67 (11 months)	33,65,613 9 4	*26,56,260 6 11	60,21,874 0 3	40,29,481 9 7	†19,92,392 6 8	6,63,868 0 3
1866-67 (12 months), calculated on the average of 11 months, including Eastern Settlements	36,71,578 7 4	*28,97,738 10 5	65,69,317 1 9	43,95,798 1 7	†21,73,519 0 2	7,24,219 10 3
1866-67 (12 months), calculated on the average of 11 months, excluding Eastern Settlements	36,11,245 5 10	*28,89,758 0 7	65,01,003 6 5	43,75,067 11 10	†21,25,935 10 7	7,63,822 6 0
1867-68	37,74,607 4 6	*23,09,839 12 0	60,84,447 0 6	47,54,940 6 5	†13,29,506 10 1	9,80,333 1 11
1868-69	41,05,704 4 3	*27,55,016 8 0	68,60,720 12 3	53,70,201 15 8	†14,90,518 12 7	12,64,497 11 5

* Including sale of Service Postage Stamps.

† The apparent reduction is to a large extent nominal, owing to the introduction of a new system of accounting for Official Postage, under which a portion of the official correspondence between Government Officers in the same district is not brought to account.

No. 911, dated 17th February 1870.

RESOLUTION.—By the Government of India, Fin. Dept.

Read—

The Annual Report on the operations of the Post Office of India for the year 1868-69.

Resolution.—The chief points of interest in this report may be briefly reviewed thus :—

2. The system of sorting letters on board the mail steamers between Suez and Bombay, introduced by Mr. F. R. Hogg when Postmaster General of Bombay, has been successfully carried out. By this system a delay of at least eight hours, which formerly took place in the Bombay Post Office, is saved, the mails being landed ready for despatch inland.

Para. 4.

3. From these paragraphs it appears that notwithstanding the enhancement of the rates of postage between India and England by 3*d.* per ½oz., the correspondence has increased considerably.

Paras. 6 to 9.

The increase is estimated at—

15 per cent. on letters from England *viâ* Southampton.
6 " " " Marseilles.
14 " " to England " Southampton.
20 " " " Marseilles.

4. Owing to the mails for and from Bengal and Madras being conveyed through Bombay, the cost of inland transit has increased, while the share of inland postage on overland correspondence has, under the new arrangement, been virtually reduced in respect of paid letters from India, by the heavy discount on the sale of stamps, and generally by the increased cost of distribution. The Secretary of State has recently been asked to obtain a larger share of the postage for India.

Paras. 10 and 11.

5. The changes made in the postal communications with the Mauritius *viâ* Aden, with the United States of America by the vessels of the Pacific Mail Steam Ship Company plying between Hong-Kong, Japan, and San Francisco, and with the Straits Settlements, as well as the alteration in the rate of postage on newspapers sent from India to other ports in Asia, are satisfactory.

Paras. 12 to 15.

6. In the local Steam Services subsidized by Government the changes noted in the margin are the only changes which were made during the year under report. These, as well as the arrangements entered into with the Agents of the opium steamers running between Calcutta and China, for the regular conveyance of the China mails, are also satisfactory.

Paras. 16 to 19.

Line between Calcutta, Bombay, and intermediate ports on the Coast, *fortnightly instead of monthly.*
Line between Madras, Rangoon, and ports on the East Coast, *once in four weeks instead of monthly.*

7. The Postal Establishments of Bengal, the North-Western Provinces, the Central Provinces, and the Punjab have been revised at a considerable increase of charge, but the increase was needed to place these establishments on an efficient footing.

Para. 20.

8. The route for the mails from the North-Western Provinces to Bombay has been changed from *viâ* Indore to *viâ* Jubbulpore, a longer but a more expeditious and less costly line.

Para. 21.

9. The Government views with satisfaction the introduction of the rule for the compulsory registration of letters containing coin or currency notes, which was suggested in Financial Resolution No. 3021, dated 31st October 1868, and trusts it will be attended with beneficial results.

Para. 23.

10. The system relating to registered letters has been revised with a view to provide more effectually for the safe transit of such letters, and to afford the means of more prompt investigation in cases of tampering. Under orders lately passed, in connection with serious frauds committed on a Mofussil Treasury, the necessity has been pointed out for passing a rule regarding the delivery of registered letters to none but the addressee, or some person duly authorized by the addressee to receive them. Any laxity in this matter is likely to lead to serious consequences.

Para. 24.

11. A Postal Guide was published on the 1st April 1869, and is now continued quarterly. It has supplied a long-felt want.

Para. 25.

12. The success which has attended the local postal system in Calcutta, as modified in the year under report, is satisfactory, the number of letters having trebled since its introduction.

Para. 26.

13. The number of Post Offices opened during the year was 384, and the number of letter-boxes 167, compared with 467 of the former, and 134 of the latter opened in the previous year. The greatest decrease in the number of new Post Offices has been in the Bombay Circle, though that Circle still exhibits a larger extension than any other Circle. The extension of the Department during the past four years, by the opening of new Post Offices, has been at the average rate of 350 per annum.

Para. 32.

14. The increase in the number of rural messengers, or district letter-carriers, who are employed in the interior among the agricultural population, from 127 during the previous year to 227 during the year under report is very satisfactory.

Para. 33.

15. These paragraphs and the statement appended show the extent in miles of each class of postal lines at the close of the year, as compared with the returns of the previous year. The total number of miles open during 1868-69 was 50,281$\frac{8}{8}$, being 603 miles in excess of that in the previous year. Of this excess 240 miles are by railway.

Paras. 34 and 35.

16. The increase in the number of letters, parcels, &c., from 69 millions to nearly 76 millions is very satisfactory, especially when it is considered that a very small percentage of the increase in the number of letters is owing to an increase of Service covers.

Paras. 36 to 40.

The increase of 12·4 per cent. in the gross value of stamps sold in 1868-69, against the increase of 4·78 per cent. in the year previous, is very satisfactory. It is observed, however, that the gross value of Service stamps sold in the year has decreased from Rs. 3,18,169 in the previous year to Rs. 2,85,644, and the result is supposed to be attributable to the increase in the number of public offices privileged to send and receive official correspondence free of charge.

17. These paragraphs relate to district posts. In the review of the previous year's report, this Government desired that the plan of amalgamating the district with the imperial post,

Paras. 43 to 48.

in respect to management and control, should be extended perfectly in *all* the Provinces of India. The present report shows that the amalgamation has been completely effected in Bombay and the North-Western Provinces, that it is about to be carried out in the Punjab, and that the experiment is being partially tried in some of the Districts of Bengal and Madras.

18. In this paragraph the proportion of undelivered letters returned by the district posts is stated to be somewhat above 10 per cent., against 11 per cent. during the previous year.

Para. 48.

19. The Governor General in Council regrets to observe that the number of mail robberies has increased since last year from 30 to 33, 17 of which were in British territory, the greatest number having occurred in Madras and the North-Western Provinces. In 8 out of the 9 cases in the North-Western Provinces, however, the mails were wholly recovered.

Para. 51.

20. These paragraphs relate to the non-postal branches of the Department, *viz.*, the Bullock Train, which was re-established during the year under report; the Military Transport Train, organised for the winter between Jubbulpore and Nagpore for the purpose of conveying the annual military reliefs; and the Punjab Military Van Dâk. The successful way in which these services have worked prove them to be useful not only to Government, but to the public generally.

Paras. 54 to 57.

Under this head is shown in the account a net deficit of Rs. 62,088. But this includes Rs. 1,84,612 for the Military Transport Train, which is really a military charge. Excluding it there would be a net surplus of Rs. 1,22,524. The Bullock Train yielded a net revenue of Rs. 1,24,630, but there was a loss of Rs. 2,106 on the Military Van Dâk, which is explained to be owing to famine prices.

21. These paragraphs relate to the financial results of the operations of the Department during the year under report. It is observed that the gross receipts in the purely Postal Department amounted to Rs. 68,60,720-12-3, and that the gross charges were Rs. 53,70,201-15-8, the difference between which shows a net surplus of Rs. 14,90,518-12-7, or excluding —

Paras. 59 to 68.

	Rs.	A.	P.
Service stamps	2,85,644	15	0
Official postage	24,69,371	9	0
	27,55,016	8	0

from the gross amount of receipts, a net deficit of Rs. 12,64,497-11-5.

In reference to these results, the Governor General in Council observes that it is proper to distinguish clearly between the *pro formâ* receipts on account of official correspondence, and the real money receipts from the public, for, although the Department does perform very valuable services for the State, it is not in accordance with the principles of the administration to allow one Department to charge others, and thus show a nominal profit. The Post Office not being primarily a source of revenue to Government, any real profits which may hereafter accrue must be devoted to extending and improving the Department. But every effort should be made to keep down the expenditure of the Department, which in the year under report has exceeded that of the previous year by Rs. 6,15,261-9-3, and public officers should be careful to effect economy in the weight of their official covers. It has, however, been explained by the Director General that the increase of expenditure during the year under report is due to the payment of railway charges, including arrears, to famine allowances, to extension of mail cart lines, consequent on sending all mails for England to

Bombay, and to the general revision of salaries which had for a long time been pending.

22. Receipts on account of passenger service are set-off against charges on that account, and the sum is excluded from both sides of the account, as it is said to be impossible to distinguish between the costs of mails and of passengers. The receipts from passengers amounted to Rs. 1,34,105-12-5. The costs are assumed to be equal to the receipts, and deducting these costs the charge for the mail cart service was Rs. 13,89,971-7-10. It is, however, to be observed that if there were no receipts from passengers, the total cost would not be materially diminished, so that those receipts represent a clear gain, and show how great a convenience the mail carts are to travellers.

Para. 70.

23. Certain items of charge shown in these paragraphs have not again been included in the accounts, though in para. 19 of the Resolution of the 31st October 1868 they were ordered to be shown in future accounts. These charges, which nearly absorb the whole of the nominal surplus, are—

Paras. 72 and 73.

I.—Railway free service, estimated at Rs. 1,50,000. This of course is a nominal charge.

II.—Discount on sale of stamps, amounting to Rs. 1,38,629, which being a real charge should be shown in the accounts.

III.—English stores, estimated at Rs. 31,310, though paid for in England, should be shown in the Departmental accounts.

IV.—Printing in Bengal and Madras, estimated at Rs. 50,000. There seems no reason why the printing charges actually incurred in the whole of the Postal Department should not be shown in the accounts.

V.—Subsidies for local Steam Services, amounting to Rs. 7,12,332, which will appear in future accounts of the Postal Department, though the primary object of the contracts is the providing conveyance of Government troops, stores, &c., and of encouraging inter-portal trade.

24. His Excellency in Council considers that the Director General, Mr. Monteath, is entitled again to the thanks of the Government for his very efficient and successful management of the Postal Department.

25. His Excellency in Council observes that the Director General mentions Mr. F. R. Hogg as the officer to whose exertions the successful introduction of the system of sea-sorting of the mails between Suez and Bombay is mainly due. For these services Mr. Hogg deserves the acknowledgments of the Government, and as the practice of reporting on the conduct of the several officers of the Department, which has not hitherto been followed by the Director General in submitting his annual reports, is a good one, His Excellency in Council desires that the Director General will in future take occasion, in his annual reports, to bring to notice those officers who distinguish themselves by industry and efficiency.

ORDERED, that a copy of this Resolution be sent to the Director General of the Post Office, and the Comptroller General.

Ordered also, that a copy of the Report and Resolution be sent to the Home Department, for publication in the Supplement to the *Gazette of India*.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

BUDGET ESTIMATE OF THE FOREST DEPARTMENT FOR 1870-71.

Circular No. 1 Forest, dated 21st February 1870.

RESOLUTION—By the Government of India, PUBLIC WORKS DEPARTMENTS.

Read again :—

The Budget-Estimates for 1870-71 of the Forest Department throughout India, including Hyderabad and Mysore.

Read also :—

The orders passed thereon by the Government of India, in the Public Works Department.

RESOLUTION.—The Budget-Estimates of the Forest Department for 1870-71 have, on the whole, been submitted with punctuality; the Coorg and Punjab Budgets only were late, the former having been received on the 18th November, and the latter on the 30th November 1869.

Madras	Received	4th	October.
Bengal	,,	4th	,,
Oudh	,,	11th	,,
Bombay	,,	13th	,,
Central Provinces	,,	13th	,,
Burmay	,,	14th	,,
Berar	,,	14th	,,
North-Western Provinces	,,	18th	,,
Mysore	,,	2nd	November.
Coorg	,,	18th	,,
Punjab	,,	30th	,,

2. The several estimates have been reviewed at length separately, and the figures are brought together in the annexed Table for convenience of comparison, and in order to exhibit the aggregate amounts involved.

3. In this Statement the estimates for the receipts and charges of the Canal Plantations in the North-Western Provinces and the Punjab have been removed from the Forest Budget-Estimate, with a view to their being placed in that of the Public Works (Irrigation) Estimate, as recently authorized by the Financial Department. The change will take effect from the 1st April next, and the following are the sums affected :—

		Rs.	Rs.
Receipts			74,000
Charges	Conservancy and Working	67,000	
	Establishments	17,080	
			84,080

ABSTRACT of the Provincial Budget-Estimates of the Forest Department throughout India for 1870-71, as passed by the Government of India in the Public Works Department.

GOVERNMENTS.	RECEIPTS.			CHARGES.											
				Establishments.				Conservancy and Working.				Total Charges.			
	Actuals, 1868-69.	Budget-Estimate, 1869-70.	Regular-Estimate, 1869-70.	Actuals, 1868-69.	Budget-Estimate, 1869-70.	Regular-Estimate, 1869-70.	Budget-Estimate, 1870-71.	Actuals, 1868-69.	Budget-Estimate, 1869-70.	Regular-Estimate, 1869-70.	Budget-Estimate, 1870-71.	Actuals, 1868-69.	Percentage on Receipts.	Budget-Estimate, 1869-70.	Regular-Estimate, 1869-70.	Budget-Estimate, 1870-71.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Government of India	3,91,179	4,70,000	4,50,000	35,387	35,972	35,647	37,586	1,32,693	1,93,500	1,76,000	4,50,000	1,68,080	43	2,29,472	2,11,647	4,87,586
„ of Madras	9,65,697	7,40,000	8,61,663	2,70,472	1,56,500	1,55,500	1,86,000	2,88,112	2,59,000	3,04,801	9,92,000	5,58,584	58	4,15,500	4,60,301	11,78,000
„ of Bombay	2,47,785	2,76,000	2,49,000	4,86,168	1,79,000	1,48,524	1,95,000	99,300	1,16,000	1,12,400	2,65,800	5,85,468	236	2,95,000	2,60,924	4,60,800
„ of Sindh	2,24,546	2,20,000	2,40,000	1,40,955	43,000	43,632	42,000	95,581	91,000	89,116	2,69,000	2,36,536	105	1,34,000	1,32,748	3,11,000
„ of Bengal	6,53,389	6,10,000	6,21,000	1,26,257	52,000	49,178	68,000	3,10,303	2,66,000	3,27,000	8,81,000	4,36,560	67	3,18,000	3,76,178	9,49,000
„ of N. W. P.	3,45,164	4,25,000	7,11,000	4,11,778	1,52,000	1,43,000	1,37,000	3,98,516	2,23,000	7,08,310	15,79,000	8,10,294	235	3,75,000	8,51,310	17,16,000
„ of Punjab	1,31,822	1,77,150	1,77,150	3,09,344	1,64,000	1,78,690	1,36,920	69,566	77,200	77,200	1,67,000	3,78,910	287	2,41,200	2,55,890	3,03,920
„ of Oudh	3,50,536	4,50,000	4,85,000	89,181	41,736	41,736	44,000	1,86,925	2,50,000	3,90,000	4,60,000	2,76,106	79	2,91,736	4,31,736	4,84,000
„ of Central Provinces	8,16,171	7,30,000	8,00,000	2,94,655	1,22,000	1,22,000	1,25,000	3,23,981	2,59,800	2,59,800	7,45,000	6,18,636	76	3,81,800	3,81,800	8,70,000
„ of British Burmah	74,448	87,550	87,550	4,22,172	1,15,200	1,15,200	1,25,000	7,175	19,950	19,950	79,000	4,29,347	577	1,35,150	1,35,150	2,04,000
„ of Coorg	1,31,822	1,77,150	1,77,150	16,476	41,736	41,736	11,000	69,566	77,200	77,200	1,67,000	86,042	65	1,18,936	1,18,936	1,78,000
Total	42,00,737	41,85,700	46,32,363	26,02,845	10,72,558	10,44,257	11,27,506	16,96,152	17,45,450	24,64,577	58,87,800	44,98,997	107	28,18,008	35,08,834	73,67,306
Total British net Revenue	15,97,892	13,67,692	11,23,529	1,19,961	63,936	61,836	66,000	59,274	56,700	54,750	3,77,000	2,79,235	17	1,20,636	1,16,586	1,56,000
Mysore ...	3,51,476	2,90,500	2,74,200	34,105	34,000	35,189	37,000	6,552	38,000	32,807	1,20,000	40,657	11	72,000	68,296	87,000
Hyderabad ...	84,556	65,000	1,19,010													
Total ...	4,36,032	3,55,500	3,93,210	1,54,056	97,936	97,325	1,03,000	65,826	94,700	87,557	4,97,000	3,19,892	73	1,92,636	1,84,882	2,43,000
Net Revenue ...	2,81,976	1,62,864	2,08,328								2,54,000					

4. The total amounts, omitting Mysore and the Berars, for the last few years, are—

	Receipts.	Charges.	Surplus.
	Rs.	Rs.	Rs.
1863-64, Actuals	30,44,430	...	...
1864-65, „	35,02,022	18,62,461	16,39,561
1865-66, „	35,63,382	21,36,387	14,26,995
1866-67, „	30,44,183	20,51,145	9,93,038
1867-68, „	33,15,884	22,44,564	10,71,320
1868-69, „	42,00,737	26,02,845	15,97,888
1869-70, Regular-Estimate ...	46,72,363	35,08,834	11,63,529
1870-71, Budget „ ...	59,61,800	44,51,386	15,10,414

5. A comparison of these figures with those given in the orders on the Forest Budgets for the current year, shows a satisfactory correspondence between estimates and actual results :—

1868-69.	Budget-Estimate.	Regular-Estimate.	Actuals.
	Rs.	Rs.	Rs.
Receipts	40,38,800	39,98,281	42,00,737
Charges	27,73,333	26,73,977	26,02,845

The financial results of forest operations in this country are affected to a great extent by the rain-fall of the year, by the greater or less unhealthiness of the seasons, and lastly by the fluctuations in the demand for, and price of, timber and other forest produce. Yet, upon the whole, the financial results of the Forest Department have, during the last few years, been fairly in accordance with the estimates, and His Excellency in Council accepts this as a satisfactory proof of the care bestowed in most Provinces upon the preparation of the Forest Budgets.

6. In the estimates now sanctioned for the current and next year, it has been necessary to provide for extended operations undertaken to supply timber and fuel for the construction of Railways from the Forests under the control of the Department in the Punjab and the North-Western Provinces. The success of these operations cannot at this time be accurately estimated, but it is certain that they will largely affect both the income and charges of the Department. It is possible that the actuals of the current and of next year may turn out somewhat different from the estimates. Making full allowance for some uncertainty in this respect, it is clear that, upon the whole, the Revenue of the Forest Department shows a steady and satisfactory increase, having risen from £304,000 in 1863-64 to £420,000 in 1868-69, and being expected to rise to £596,000 in 1870-71. Of the increase estimated for next year, about £100,000 are on account of the extended operations alluded to. A large portion of the additional supplies of wood and timber will be procured from forests in Foreign territory through the agency of the Forest Department, but a portion will come from forests in British territory; and though to a certain extent the supplies of future years will necessarily be anticipated to meet the present demand, still His Excellency in Council trusts that sufficient precautions have been taken to guard against any deterioration by overtaxing the productive powers of the forests. Without these extraordinary operations, the normal forest revenue in British India for 1870-71 might probably be estimated at £500,000.

7. On the other hand, the charges have risen in a much greater proportion. They were £186,000 in 1864-65, £260,000 in 1868-69, and are expected to be £445,000 in 1870-71. Of the last named sum, £100,000, or the same amount as under Receipts, has been entered on account of the operations in connection with the construction of the State Railways, so that the normal charges of 1870-71 may be estimated at about £345,000.

8. The expenditure of forest administration is divisible into three great classes,—charges for Establishments, for the working of the forests, and for works of improvement, such as the demarcation of the forests, planting operations, roads, the opening out of streams, and the like.

The charges for improving the forests have, His Excellency in Council believes, increased considerably of late years, and all operations which serve to increase the productiveness of the forests should everywhere be encouraged, as far as the outlay is justified on financial grounds. The charges for working the forests are necessary wherever it is found expedient to work them on Government account, and the charges for Establishments are unavoidable to secure the protection and proper management of the State Forest domains.

Nevertheless, His Excellency in Council feels assured that much still remains to be done, before the charges of the Forest Department may be said to have been reduced to the lowest figure compatible with efficiency. If the percentage of charges on receipts is considered in the different Provinces, it becomes evident that in some the charges are disproportionately high, whereas in others the proportion between receipts and charges is more satisfactory. Thus, in the Madras Presidency, the charges in 1868-69 amounted to 69 per cent. on the receipts; in the Central Provinces to 84 per cent.; and in the Punjab to 90 per cent. Whereas in Bombay, Sindh, Bengal and Burmah, the expenditure amounted to between 50 and 60 per cent. of the income, and in Coorg only to 22 per cent.

9. It is true that there are special circumstances in some Provinces which appear to a certain extent to account for the high proportion of charges. Thus, in the Punjab and the Central Provinces, it is admitted that the forests which are most accessible and easily worked are exhausted, or have at least been greatly over-worked, so that a small surplus revenue only can at the present time be realized; nevertheless, it seems probable that in those Provinces where the charges are high as compared with the receipts, something may be done to decrease them, and this subject is recommended to the earnest consideration of all Governments and Administrations, and of all Forest Officers.

10. The Establishment charges in the Forest Department will demand the special attention of all Governments and Administrations. In the following two Tabular Statements, the totals of these charges in the different Provinces since 1864-65 are exhibited, together with the classification of this expenditure in 1868-69. The percentage on Receipts of the Establishment charges has been heaviest in Madras, 35 per cent.; in the Punjab, 34 per cent.; and the Central Provinces, 31 per cent.

ABSTRACT of Charges under B. Establishments in the Forest Department since 1864-65.

Governments and Administrations.	Actuals.					Estimates.	
	1864-65.	1865-66.	1866-67.	1867-68.	1868-69. Percentage on Receipts.	1869-70.	1870-71.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Government of India	43,615	10,163	30,680	32,234	35,387 ...	35,647	37,586
,, of Madras	95,300	1,17,054	1,02,920	1,26,223	1,37,779 35	1,55,500	1,56,000
,, of Bombay	1,67,464	1,62,791	1,72,017	1,70,049	1,98,056 21	1,48,524	1,95,000
,, of Sindh	42,888	49,196	38,956	44,913	41,655 17	43,632	42,000
,, of Bengal	6,604	16,292	14,881	24,223	30,676 14	49,178	68,000
,, of North-Western Provinces	65,740	84,558	83,711	85,139	1,01,475 16	1,43,000	1,37,000
,, of Punjab	84,665	77,968	78,680	97,955	1,15,828 34	1,78,690	1,86,920
,, of Oudh	27,154	19,883	21,571	23,065	29,615 22	41,736	44,000
,, of Burmah	86,081	90,327	80,544	1,03,339	99,191 12	1,15,200	1,25,000
,, of Central Provinces	61,946	74,994	81,041	99,031	1,07,730 31	1,22,000	1,25,000
,, of Coorg	4,201	8,654	7,127	8,610	9,301 12	11,150	11,000
Total ...	6,85,658	7,11,880	7,12,128	8,14,781	9,06,693 22	10,44,257	11,27,506
Mysore	53,018	54,768	53,823	57,725	60,677 17	61,836	66,000
Hyderabad	478	8,991	13,718	16,157	27,553 31	35,489	37,000
Grand Total ...	7,39,154	7,75,639	7,79,669	8,88,663	9,94,923 21	11,41,582	12,30,506

CLASSIFICATION of the Establishment charges of the Forest Department during 1868-69.

GOVERNMENTS AND ADMINISTRATIONS.	SALARIES.	TRAVELLING ALLOWANCES.	CONTINGENCIES.	TOTAL.
	Rs.	Rs.	Rs.	Rs.
Government of India ...	26,005	8,475	907	35,387
„ of Madras ...	1,18,480	12,136	7,163	1,37,779
„ of Bombay ...	1,20,882	27,516	49,658	1,98,056
„ of Sindh ...	36,054	5,580	21	41,655
„ of Bengal ...	25,734	3,580	1,362	30,676
„ of N. W. P. ...	80,017	14,527	6,931	1,01,475
„ of Punjab ...	87,315	21,758	6,755	1,15,828
„ of Oudh ...	22,411	4,556	2,648	29,615
„ of Burmah ...	85,592	8,407	5,192	99,191
„ of Central Provinces	88,697	12,441	6,592	1,07,730
„ of Coorg	6,790	1,795	716	9,301
TOTAL ...	6,97,977	1,20,771	87,945	9,06,693
Mysore	50,917	4,797	4,963	60,677
Hyderabad ...	19,906	3,119	4,528	27,553
GRAND TOTAL ...	7,68,800	1,28,687	97,436	9,94,923

11. It is evident, from the figures here put together, that there is great inequality in the different classes of Establishment charges in the different Provinces, and there seems at first sight to be room for greater economy in several Provinces. It would be most unwise to propose any retrenchments which would have the effect of limiting in any way the operations of the Forest Department, or of arresting its progress. It is in the opinion of His Excellency the Governor General in Council essential, for the future well-being of this country and its inhabitants, that the administration of the public forests and wood-lands should be placed upon a satisfactory footing. And it seems equally clear that any relaxation of our efforts in this direction at the present time would only increase the difficulties of hereafter attaining this object. Nevertheless, it is necessary that the administration of the public forests should be so conducted as to yield the largest possible amount of revenue, compatible with a due regard for the maintenance and improvement of these important public domains.

ORDER.—Ordered, that a copy of this Resolution, and of the orders on the several Budget-Estimates, be forwarded for information to the Financial Department, and to the Secretary of State for India.

Ordered also, that a copy of this Resolution be forwarded to the Accountant General, Public Works Department, together with the details of the Estimates of Receipts and Charges for the Canal Plantations in the North-Western Provinces and the Punjab.

Ordered also, that a copy of the Resolution be published in the Supplement to the *Gazette of India* for general information.

IRRIGATION OPERATIONS OF FUSL RUBBEE IN THE N. W. PROVINCES UP TO 31ST DECEMBER 1869.

CANAL DIVISIONS.	WATER DISTRIBUTED DURING DECEMBER 1869. Depth in Canal at Regulating Gauge. Full supply, feet.	Actual through-out, feet.	Gross Consumption, cubic feet, per second. Estimated full Discharge.	Actual average throughout.	NAVIGATION RETURN, GANGES CANAL. Nature of Traffic.	Up. Mds.	Up. No.	Down. Mds.	Down. No.	Total Up and Down. Mds.	Total Up and Down. No.	LAND IRRIGATED (APPROXIMATE). Zillas.	Acres.	RAIN-FALL. Total from 1st April to 31st December 1869.	RAIN-FALL. Average of nine preceding years for the same period.	REMARKS.
GANGES CANAL. Northern ...	9·00	7·46	491		Grains :—							Saharunpoor ...	27,247	17·5	37·2	The mean volume of the Ganges Canal passing the Roorkee Gauge during the month was 4,282 cubic feet per second. The volumes discharged by the canal were as follows :— Tail, Etawah Branch 26 cubic feet. Escapes „ ... 293 „ „ Tail, Cawnpore „ ... 191 „ „ Escapes ... no returns. 515 cubic feet. The expenditure of water shown in tabular statement for Cawnpoor Division includes, therefore, the escape-water. The Cawnpoor canal, of high and low supply, alternate weeks are given show the mean of the month. At the commencement of the month, the rubbee irrigation had entirely commenced. After the first week, however, the weather all over the Doab became, very cloudy, and the cultivators, induced by the prospect of rain, restricted their demand for water as far as possible. Heavy rain fell very generally over the Doab on the 20th to 24th instant, and the demand for water almost entirely ceased. Some considerable difficulty was experienced in getting rid of the surplus water occasioned by the sudden cessation of the demand; however, no breaches of consequence occurred. Only on the Eastern Jumna Canal was the supply unequal to the demand, due to the necessity this canal labors under of reducing its supply to meet the demands of the Western Jumna Canal when the river runs low. Tuccels of Zillahs had to be established on this canal to ensure the fair distribution of water.
Meerut ...	6·80	5·86	822		Wheat	...	...	3,037	...	3,037	...	Meerut ...	22,628	28·2	24·8	
Futtehgurh ...	6·50	5·32	289		Bajhur	...	...	100	...	100	...	Moozuffernuggur ...	49,305	16·6	22·9	
Boolundshuhur	5·75	4·42	329	5,585	Moong	...	...	53	...	53	...	Meerut ...	10,764	21·0	19·4	
Allygurh ...	6·00	4·80	587		Mucka	...	...	2,043	...	2,043	...	Boolundshuhur	5,649	23·4	25·0	
Etawah ...	4·80	2·13	331		Rice	...	...	1,190	...	1,190	...	Allygurh ...	1,961	19·3	23·8	
Cawnpoor ...	6·00	4·55	918		Oorud	...	...	146	...	146	...	Muttra ...	288	26·5	24·1	
					Mote	...	...	30	...	30	...	Agra ...	2,187	25·0	27·8	
					Gram	...	...	175	...	175	...	Etah ...	4,514	33·7	30·4	
					Bajra	...	...	120	...	120	...	Mynpoorie ...	2,397	33·4	29·7	
					Jowar	...	...	330	...	330	...	Futtehgurh ...	7,107	38·7	28·3	
								4,086	...	3,193	...	Etawah ...	10,010	34·2	29·3	
					Cotton	...	...	1,856	...	20,574	...	Cawnpoor ...	2,794	70·9	67·6	
					Oil-seed	...	...	...	...	314	...	Debra Doon ...	...	28·4	28·7	
					Salts	...	...	...	...	375	...	Bijnour ...	80	44·9	42·3	
					Metal	...	...	594	...	663	...	Terai ...	2,326	40·2	35·8	
					Building Materials	...	...	78	...	4,855	...	Bareilly ...	21	52·7	32·1	
					Miscel. Goods ...	...	...	6,386	...	4,362	...	Jhansie ...	304	38·5	31·1	
					Firewood	...	...	700	...	4,283	...	Humeerpore ...				
					Bamboos	...	...	...	...	29,923	...					
					Bullees and Tors	...	...	...	...	543	...					
					Kurrees	...	...	...	...	5,474	...					
					Logs	...	...	...	5	303	...					
					Miscel. Timbers	...	...	...	165	492	...					
					Passengers	...	...	...	...	106	...					
TOTAL ...	...	...	4,915	...	TOTAL ...	10,699	170	38,619	170	52,318	37,017	TOTAL ...	149,582	...	...	

W. G. ROSS, *Lieut., R. E.,*
Asst. to Chief Engr., Irrigation Works, N. W. P.

ALLAHABAD;
The 19th January 1870.

Arsenic manufacturers.
Bleaching liquid makers.
„ powder makers.
Blue manufacturers.
„ verditer makers.
Camel hair merchants.
Carmine makers.
Chemical color makers.
Chloride manufacturers.
Cobalt refiners.
Colorers.
Color manufacturers.
Copperas manufacturers.
Creosote manufacturers.
Cudbear makers.
Dye manufacturers.
Garacin manufacturers.
Goat's hair merchants.
Indigo blue manufacturers.
„ extract manufacturers.
„ manufacturers.
Indigo refiners.
Manganese merchants.
Merino wool merchants.
Mecklenburgh blue makers.
Mohair merchants.
Mordant makers.
Ochre manufacturers.
Oil of vitriol manufacturers.
Orchil and cudbear manufacturers.
Smalt manufacturers.
Soda ash makers.
„ crystal manufacturers.
„ merchants.
Spirits of salt manufacturers.
Sulphate of ammonia manufacturers.
„ of barytes manufacturers.
„ of copper manufacturers.
„ of soda manufacturers.
Turpentine distillers.
Ultramarine manufacturers.
Vitriol manufacturers.
Washing compound makers.
„ crystal manufacturers.
Wool factors.
„ merchants.
„ staplers.
Zaffre refiners.

IX.—To every specimen will be attached a label, containing the following particulars:—

1.—The name of the material.
2.—The express purpose for which it is used.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for exhibition, such as—
Its special mode of preparation for woollen and worsted fabrics.
Its comparative superiority.
Its peculiar qualities and properties.
Its commercial value and importance.
Its novelty of production or application.
Its cheapness.
6.—The price, unless the exhibitor objects.
7.—Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

NEW MACHINERY FOR WOOL AND WORSTED FABRICS.

X.—New machinery and apparatus used in the cleansing, preparation, and weaving of wool and hair, will be admitted, and improvements of the different parts of the various machines and appliances may be shown separately.

XI.—Manufacturers, such as the following, engaged in the production of machinery and apparatus used in the manufacture of wool and worsted fabrics, may exhibit under this head:—

Bobbin manufacturers.
„ turners.
Card machine makers.
„ makers.
„ teeth makers.
Cloth press makers.
Flyer makers.
Fork manufacturers (weft).
Gear and slay makers.
Hackle and gill pin manufacturers.
„ makers.
Heald and slay makers.
Heddle makers.
Jacquard card cutters.
„ harness mounters.
„ machine makers.
Loom makers.
„ mounters.
„ passers and twisters.
Machine joiners.
Machine makers.
Reed and slay makers.
Shuttle makers.
„ tip makers.
Spindle makers.
Spinner flyer makers.

Tassel and fringe mould turners.
Teazle rod manufacturers.
Weavers' harness makers and enterers.
„ joiners.
„ leash makers.
„ loom makers.
„ mail makers.
Weavers' turners.
Winding frame makers.
Wool card makers.
Wool comb makers.
Woollen card makers.
„ machine makers.
Woolley teeth makers.

XII.—To every object will be attached a label containing the following particulars:—

1.—The name of the object.
2.—The purpose to which it is applied.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for exhibition, such as—
Its ingenuity.
Its novelty.
Its improvement on ordinary construction.
Its increased economy in producing.
The superiority of its execution.
Its increased efficiency.
Its cheapness.
6.—The price, when the exhibitor does not object.
7.—Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

GENERAL REGULATIONS FOR EXHIBITING EDUCATIONAL WORKS AND APPLIANCES.

I.—The exhibition of educational works and appliances will include illustrations of all the subjects belonging to the following branches into which this class is sub-divided:—

1.—School buildings, fittings, furniture, etc.
2.—Books, maps, globes, instruments, etc.
3.—Appliances for physical training, including toys and games.
4.—Specimens and illustrations of modes of teaching Fine Art, Natural History, and Physical Science.
5.—Specimens of school work serving as examples of the results of teaching.

II.—The various trades engaged in the production of educational works and appliances will exhibit under this head, such as:—*

1.—*School Buildings, Fittings, and Furniture.*

Abacus frame makers.
Black board makers.
Diagram stand makers.
Easel makers.
Ink well makers.
Object lesson cabinet makers.
Reading frame makers.
School apparatus makers.
„ building model makers.
„ clock makers.
„ desk makers.
„ fitting makers.
„ form makers.

2.—*Books, Maps, Globes, Instruments, etc.*

Chart sellers.
Copy book publishers.
Engravers—(map).
„ (music).
Globe makers.
Ink powder makers.
Inkstand makers.
Map and chart sellers and publishers.
„ and print colorers.
„ engravers and printers.
„ mounters.
Mathematical instrument makers.
Music copyists.
Pen makers.
Pencil makers.
Penholder makers.
Publishers.
Quill and pen manufacturers.
Raised map makers.
School slate makers.
Slate pencil makers.
Steel pen manufacturers.
Topographers.
Writing ink makers.

* This list is of trades existing in the United Kingdom, but it may be suggestive to Foreign Commissions.

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

ANNUAL INTERNATIONAL EXHIBITIONS OF SELECT WORKS OF FINE AND INDUSTRIAL ART AND SCIENTIFIC INVENTIONS.

ALLOTMENT OF SPACE TO INDIA.

In accordance with the general rule (F) the objects will be arranged in the following classes, and the amounts of space allotted to for each class will be as follows:—

	Horizontal space in Glass Cases about 7 feet high.	Horizontal space on the floor, unlimited in height.	Vertical space with projection not exceeding 6 inches on walls about 15 feet high, beginning at 2 feet 6 inches from the floor.	Vertical space with projection not exceeding 6 inches on screens about 7 feet high.
	Superficial feet.	Superficial feet.	Feet run.	Feet run.
I.—FINE ARTS—				
1. Paintings of all kinds ...	...	...	...	12
2. Sculpture in Marble, Stone, Bronze, or Plaster.	Unlimited space, but the objects, if many, may be liable to be arranged under open arcades, or in the Royal Horticultural Gardens.			
2*a*. Small Sculptures in other Materials.	80	...	...	...
3. Engravings, Lithographs, Photographs, &c.	...	...	8	12
4. Architectural Designs ...	...	...	...	6
4*a*. Architectural Models ...	...	20	...	...
5. Tapestries and Carpets, shown for their Fine Art.	...	...	40	...
5*a*. Shawls, Lace, &c., shown for their Fine Art.	...	...	...	36
6. Designs for all kinds of Decorative Manufactures.	...	...	...	12
7. Copies of Ancient or Mediæval Pictures, Mosaics, &c.	...	...	8	...
7*a*. Reproductions of large Monuments of Sculpture, or Architecture.	Unlimited if exhibited in arcades, or in the open air.			
7*b*. Reproductions of small Objects.	20	...	...	...
II.—SCIENTIFIC INVENTIONS AND NEW DISCOVERIES OF ALL KINDS.	...	10	4	...
	If any object is above 10 feet high, its height should be specified.			

ALLOTMENT OF SPACE, *&c.—continued.*

	Horizontal space in Glass Cases about 7 feet high.	Horizontal space on the floor unlimited in height.	Vertical space with a projection not exceeding 6 inches on walls about 15 feet high, beginning at 2 feet 6 inches from the floor.	Vertical space with projection not exceeding 6 inches on screens about 7 feet high.
	Superficial feet.	Superficial feet.	Feet run.	Feet run.
III.—MANUFACTURES—				
a. POTTERY of all kinds ...	60	...	...	...
An unlimited amount of space is assigned to special objects which may exceed feet in height, which can be shown under arcades or in the open air, but due notice of them, their character and dimensions, must be given before 1st November 1870.				
*a*1. New Raw Materials, Machinery, and Processes for Pottery.	...	30	4	...
b. WOOLLEN AND WORSTED FABRICS.	...	...	...	27
*b*1. Raw Produce, Machinery, and Processes.	...	30	4	...
*b*2. Woollens of all kinds, except Carpets.	...	...	...	27
*b*3. Shawls	...	...	...	45
*b*4. Mixed Fabrics ...	...	...	...	27
*b*5. Carpets	...	...	40	...
c. EDUCATIONAL—				
*c*1. School Buildings, Fittings, Furniture, &c.	12	...	5	...
*c*2. Books, Maps, Globes, Instruments, &c.	12	...	5	...
*c*3. Appliances for Physical Training, including Toys and Games.	12	...	5	...
*c*4. Specimens and Illustrations of the Modes of teaching Fine Art, Natural History, and Physical Science.	12	...	5	...
*c*5. Specimens of School Work, serving as Examples of the results of Teaching.	12	...	5	...

IV.—Her Majesty's Commissioners undertake to find the several spaces before described, and to arrange the objects in large glass cases where necessary. The spaces must not be exceeded, or the excess of objects will be liable to exclusion. Exhibitors who prefer it may place their objects in plain black frames glazed, not exceeding three inches in depth.

V.—Provided the aggregate space of each kind be not exceeded, Foreign Commissions are free to vary the proportions here allotted. Thus, in Paintings (No. 1) and Copies of Paintings (No. 7) to be hung on walls, and with Engravings (No. 3), Architectural Designs (No. 4), Shawls (5*a*), Designs (No. 6), to be exhibited on screens, the exact allotments need not be maintained. If no Architectural Designs are exhibited, the space may be allotted to Shawls or Engravings, provided always that the aggregate space of each kind be not exceeded.

SUMMARY OF ALLOTMENT TO INDIA.

	Horizontal space in Glass Cases.	Horizontal space on Floor.	Vertical space on walls 15 feet high.	Vertical space on screens 7 feet high.
	Square feet.	Square feet.	Feet run.	Feet run.
Fine Arts	100	20	56	78
Scientific Inventions... ...	...	10	4	...
Manufactures	120	60	73	126
TOTAL ...	220	90	133	204

ANNUAL INTERNATIONAL EXHIBITIONS OF SELECT WORKS OF FINE AND INDUSTRIAL ART AND SCIENTIFIC INVENTIONS.

Her Majesty's Commissioners for the Exhibition of 1851.

PRESIDENT:

THE DUKE OF BUCCLEUCH, K.G.
THE DUKE OF BUCKINGHAM AND CHANDOS.
THE EARL DE GREY AND RIPON, *or Lord President of the Council for the time being.*
THE EARL GRANVILLE, K.G.
THE EARL RUSSELL, K.G.
THE LORD PORTMAN.
THE LORD OVERSTONE.
GENERAL THE HON'BLE C. GREY.
THE RIGHT HON. W. E. GLADSTONE, M.P.
THE RIGHT HON. BENJAMIN DISRAELI, M.P.
THE RIGHT HON. ROBERT LOWE, M.P.
THE RIGHT HON. SIR S.H. NORTHCOTE, *Bt.*, C.B., M.P.
THE RIGHT HON. H. A. BRUCE, M.P.
THE RIGHT HON. JOHN BRIGHT, M.P., *or President of the Board of Trade for the time being.*
THE RIGHT HON. W. E. FORSTER, M.P., *or Vice-President of the Committee of Council on Education for the time being.*
THE RT. HON. SIR ALEXANDER Y. SPEARMAN, *Bart.*
THE RIGHT HON. A. S. AYRTON, M.P., *or First Commissioner of Her Majesty's Works for the time being.*
SIR THOMAS BAZLEY, *Bart.*, M.P.
SIR CHARLES LYELL, *Bart.*
SIR RODERICK I. MURCHISON, *Bart.*, K.C.B.
SIR FRANCIS GRANT, P.R.A.
SIR FRANCIS R. SANDFORD.
THOMAS BARING, Esq., M.P.
EDGAR A. BOWRING, Esq., C.B., M.P.
THOMAS FAIRBAIRN, Esq.
THOMAS FIELD GIBSON, Esq.
C. H. GREGORY, Esq., *or President of the Institute of Civil Engineers for the time being.*
PROFESSOR HUXLEY, F.R.S., *or President of the Geological Society for the time being.*
DR. LYON PLAYFAIR, C.B., M. P.
HENRY THRING, Esq.

A.

Her Majesty's Commissioners for the Exhibition of 1851 announce that the first of a series of Annual International Exhibitions of selected Works of Fine and Industrial Art and Scientific Inventions will be opened at South Kensington, London, on Monday, the 1st May 1871, and be closed on Saturday, the 30th September 1871.

B.

The Exhibitions will take place in permanent buildings, about to be erected, adjoining the arcades of the Royal Horticultural Gardens.

C.

The productions of all Nations will be admitted, subject to obtaining the certificate of competent judges that they are of sufficient excellence to be worthy of exhibition.

D.

The objects in the first Exhibition will consist of the following classes, for each of which will be appointed a Reporter and a separate Committee :—

I.—FINE ARTS APPLIED OR NOT APPLIED TO WORKS OF UTILITY.

1.—Painting of all kinds in oil, water colors, distemper, wax, enamel, and on glass, porcelain, mosaics, etc.
2.—Sculpture, modelling, carving and chasing in marble, stone, wood terra-cotta, metal, ivory, glass, precious stones, and any other materials.
3.—Engravings, lithography, photography, etc.
4.—Architectural designs, drawings and models.
5.—Tapestries, carpets, embroideries, shawls, lace, etc., shown not as manufactures, but for the fine art of their designs in form or color.
6.—Designs for all kinds of decorative manufactures.
7.—Copies of ancient or mediæval pictures, mosaics, enamels, reproductions in plaster, fictile ivory, electrotypes of fine ancient works of art, etc.

II.—SCIENTIFIC INVENTIONS AND NEW DISCOVERIES of all kinds.

III.—MANUFACTURES.

(*a*). POTTERY of all kinds, *viz.*, earthenware, stoneware, porcelain, parian, etc., including terra-cottas used in building; with any new raw materials, new machinery, and processes for the preparation of such manufactures.

(*b*). WOOLLEN AND WORSTED FABRICS.

With any raw produce from new sources or newly prepared, and new machinery for woollen and worsted manufactures.

(*c*). EDUCATIONAL.

1.—School buildings, fittings, furniture, etc.
2.—Books, maps, globes, instruments, etc.
3.—Appliances for physical training, including toys and games.
4.—Specimens and illustrations of modes of teaching Fine Art, Natural History and Physical Science.

Detailed rules applicable to each of the above classes, and lists of the separate trades engaged in the production of objects of manufacture, will be issued.

IV.—HORTICULTURE.

International Exhibitions of new and rare plants and of fruits, vegetables, flowers and plants showing specialities of cultivation will be held by the Royal Horticultural Society in conjunction with the above Exhibitions.

Special rules for Horticultural Exhibition will be issued by the Royal Horticultural Society.

E.

In Classes II. and III. producers will be permitted to send one specimen of every kind of object they manufacture, such object being distinguished for novelty or excellence.

F.

The arrangement of the objects will be according to Classes and not Nationalities as in former International Exhibitions.

G.

One-third portion of the whole available space will be assigned absolutely to Foreign Exhibitors, who must obtain certificates for the admission of their objects from their respective Governments. Foreign countries will appoint their own judges. The remaining two-thirds of the space will be filled by objects produced either in the United Kingdom, or, if produced abroad, sent direct to the building for inspection and approval of judges selected for the British Exhibi-

tors. Objects not accepted for exhibition must be removed according to the notices given, but no objects exhibited can be removed until the close of the Exhibition.

H.

All exhibitors or their agents must deliver at the building into the charge of the proper officers the objects unpacked and ready for immediate exhibition and free of all charges for carriage, etc.

I.

Her Majesty's Commissioners will find large glass cases, stands, and fittings free of costs to the exhibitors, and, except in the case of machinery, carry out the arrangement of the objects by their own officers.

J.

Her Majesty's Commissioners will take the greatest possible care of all objects, but they will not hold themselves responsible for loss or damage of any kind.

K.

Prices may be attached to the objects, and exhibitors will be encouraged to state their prices. Agents will be appointed to attend to the interests of exhibitors.

L.

Every object must be accompanied with a descriptive label, stating the special reason, whether of excellence, novelty, or cheapness, etc., why it is offered for exhibition.

M.

Due notice will be given of the days for receiving each class of objects, and to enable the arrangements to be carried into effect, strict punctuality will be required from all exhibitors, both Foreign and British. Objects sent or brought after the days appointed for their reception cannot be received.

N.

Reports of each class of objects will be prepared immediately after the opening, and will be published before the 1st June 1871.

O.

Each foreign country will be free to accredit an official reporter for every class in which objects made in such country are exhibited for the purpose of joining in the reports.

P.

There will be no prizes, but a certificate of having obtained the distinction of admission to the Exhibition will be given to each exhibitor.

Q.

A catalogue will be published in the English language, but every foreign country will be free to publish a catalogue in its own language if it think fit.

HENRY Y. D. SCOTT, *Lieut.-Colonel, R. E.*,
Secretary.

ANNUAL INTERNATIONAL EXHIBITIONS OF SELECT WORKS OF FINE AND INDUSTRIAL ART AND SCIENTIFIC INVENTIONS.

THE FIRST OF THE SERIES TO BE HELD IN 1871.

Special arrangements for foreign exhibitors whose objects are sent through the Commissions of their own Countries.

I.—In accordance with the general rule (H), Foreign Commissions must cause the objects to be delivered at the building into the charge of the proper officers, unpacked and ready for immediate exhibition, and free from all charges for carriage, &c.

II.—Foreign Commissioners must state their acceptance of the spaces respectively allotted on or before 1st May 1870. If not accepted by that time, the space will be treated as absolutely resigned.

III.—A preliminary list of the names of the exhibitors in each class to whom Foreign Commissioners have allotted space made out on the following form must be sent to Her Majesty's Commissioners on or before 1st November 1870 :—

(*a*).—Class.
(*b*).—Object to be exhibited.
(*c*).—Its dimensions.
(*d*).—Exhibitor's name and address.

IV.—Foreign exhibitors by general rule (G) are also permitted to send objects direct to London to be admitted by a British Jury, and therefore it is indispensable that this information be furnished by Foreign Commissions at the time appointed.

V.—Forms, showing the totals of space allotted in each class, are supplied and must be returned filled up by 1st November 1870.

VI.—In accordance with general rule (E), producers of scientific inventions and manufacturers are permitted to send one specimen of every different kind of object they manufacture, such object being distinguished for novelty or excellence, and according to general rule (L), every object must be accompanied with a descriptive label, stating the special reason, whether of excellence, novelty, or cheapness, &c., why it is offered for exhibition.

VII.—To enable Her Majesty's Commissioners to carry out their engagement to arrange all objects themselves, all objects being machinery or manufactures must be delivered at South Kensington on or before the 31st January 1871; all works of Fine Art must be delivered on or before the 15th February, and no objects sent through Foreign Commissions can be received after those dates. (See general rule M.)

Exception.—If machinery requires to be fitted, the exhibitor or his agent must d such fittings. Foundations will be provided, but notice of their being required must be sent on or before 1st September 1870.

VIII.—To assist in the preparation of the reports which, in accordance with general rules (N and O), must be published before 1st June 1871, Foreign Commissions are requested to send, as early as possible, the name of one representative for each of the following classes, who should be present in London for the opening on Monday, 1st May 1871, and prepared to commence the consideration of the reports on Tuesday, 2nd May :—

IX.—Painting of all kinds.
Sculpture of all kinds.
Engravings of all kinds.
Photography.
Architecture.
Fine arts applied to industry.
Copies of ancient and mediæval works of art.
Scientific inventions.
Pottery.
Woollen and worsted manufactures.
Education.
Machinery for the manufacture of pottery, and woollen and worsted manufactures.
Horticulture.

X.—Each representative will be at liberty to appoint a deputy to take his place in his absence.

XI.—Her Majesty's Commissioners will defray the cost of drawing up the reports.—*See Appendix B.*

XII.—A specimen of the proposed catalogue is transmitted, and Foreign Commissions are requested to collect the information relating to each individual artist or producer admitted to the Exhibition. Every effort will be made to render the information complete, so as to make the notices in the annual volume of International Exhibitions as valuable as possible, both to the public and to the exhibitor, and to cause the honor of gaining admission to be duly appreciated.

FINE ARTS.

GENERAL REGULATIONS RELATING TO FINE ARTS APPLIED OR NOT APPLIED TO WORKS OF UTILITY.

I.—The following objects will be included in the first Exhibition, and will be arranged in the under-mentioned classes, for each of which a reporter and committee will be appointed :—

Fine Arts applied or not applied to Works of Utility.

1.—Painting of all kinds in oil, water colors, distemper, wax, enamel, and on glass, porcelain, mosaics, &c.
2.—Sculpture, modelling, carving and chasing in marble, stone, wood, terra-cotta, metal, ivory, glass, precious stones, and any other materials.
3.—Engravings, lithography, photography, &c.
4.—Architectural designs, drawings and models.
5.—Tapestries, carpets, embroideries, shawls, lace, &c., shown not as manufactures, but for the fine art of their design in form or color.
6.—Designs for all kinds of decorative manufactures.
7.—Copies of ancient or mediæval pictures, mosaics, enamels, reproductions in plaster, fictile ivory, electrotypes of fine ancient works of art, &c.

II.—No artist can be allowed to exhibit more than two works in each class, unless under special conditions, but he may send works in as many classes as he pleases; thus the same artist may send for admission two oil paintings, two water-color paintings, two paintings on enamel, porcelain, &c., also two sculptures in marble, wood, &c.

III.—Paintings and sculptures may be either separate works, or form parts of the decoration of some object of utility, *e.g.*, fans, panels for furniture, wood carving for furniture, &c., provided that fine art is the predominant feature of the design.

IV.—The works of deceased artists are not admissible, except as copies or reproductions (Class 7).

V.—All works of art, except reproductions of ancient and mediæval works, must have been executed since 1862.

VI.—No work which has been previously exhibited in the United Kingdom can be admitted.

VII.—A producer may exhibit any number of reproductions of ancient or mediæval art, provided he obtains a certificate for their admission.

VIII.—Foreign Commissions will be required to furnish descriptions of all works, written only on one side of the paper, describing them as they are meant to be inserted in the catalogue, but no advertisement, unnecessary quotation, or narrative can be admitted. At the back of each frame or object must be written the name of the artist, and the number to which it refers in the list of the Commission: particular accuracy is requested in this respect.

IX.—Each picture or drawing must be in a separate frame, except very small miniatures, or sculptured gems, any number of which may be placed in a frame not exceeding six by five, or thirty square inches, and will be considered as one work; but if a series of designs from one story be admitted in the same frame, they must be enumerated as distinct pieces.

X.—All pictures and drawings must be in gilt frames. Excessive breadth in frames, as well as largely projecting mouldings, may prevent pictures obtaining the situation they otherwise merit; and oval frames should be avoided, as they are difficult of arrangement.

XI.—No mere transcripts of the objects of natural history, nor any drawings without abckgrounds, excepting architectural designs, can be received.

XII.—The prices of works to be disposed of, carefully described as in Section VIII, may be communicated to the Secretary.

XIII.—To every work will be attached a label containing the following particulars:—

1. The subject. 2. The artist's name. 3. His address. 4. Any explanations.

XIV.—Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

SCIENTIFIC INVENTIONS AND DISCOVERIES.

I.—The exhibition of scientific inventions and discoveries will not be restricted to such as relate to the fine arts and to the three classes of manufactures included in this Exhibition, but will embrace all kinds of inventions and discoveries in physics, mechanics, and chemistry, which may be deemed worthy of admission.

II.—If any object requires for its exhibition fire steam, or water or any other motive power, the application must distinctly specify what provision is necessary to be made for working it, and what securities are required against danger or accident.

III.—As a general rule, explosive and dangerous substances, including such as are liable to spontaneous combustion, and substances deleterious to other ordinary exhibits, will not be admitted. Any imitations of explosive or dangerous compounds (such as the substitution of coal dust for gunpowder in sections of shells and the like) must be the subjects of special application.

IV.—To every object will be attached a label containing the following particulars:—

1.—The name of the object.
2.—Its use or application.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for exhibition, such as—
Its novelty.
Its ingenuity.
Its comparative superiority.
Its peculiar qualities or properties.
Its commercial, artistic, or scientific value and importance.
Its cheapness.
6.—The price, unless the exhibitor objects.
7.—Any explanations, etc.

V.—Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

GENERAL REGULATIONS FOR EXHIBITING POTTERY AS A MANUFACTURE AND NOT AS A FINE ART.

I.—Pottery of all kinds will be exhibited, *viz.*, earthenware, stoneware, porcelain, parian, etc., including terra-cottas used in building, with new raw materials, machinery, and processes for the preparation of such manufactures.

II.—In this class, the following trades, together with any others engaged in the production of pottery, are eligible to send illustrations of their respective branches of production :—*

Brick and tile makers.
Brown stone potters.
Chemical potters.
Chimney top manufacturers.
China and earthenware manufacturers.
„ gilders.
„ menders.
„ riveters.
„ and porcelain door furniture makers.
„ and porcelain manufacturers.
„ drillers.
„ figure manufacturers.
„ ornament makers.
„ painters and gilders.
„ toy makers.
Drain pipe and tile makers.
Earthenware figure manufacturers.
„ manufacturers.
Egyptian blackware manufacturers.
Encaustic tile makers.
Fancy jug manufacturers.
Fire brick makers.
Jug manufacturers.
Melting pot and crucible makers.
Muffle manufacturers.
Parian manufacturers.
Plumbers' pottery makers.
Porcelain letter makers.
„ manufacturers.
Potters.
Potters' engravers.
Rockingham ware manufacturers.
Stone bottle makers.
„ mortar and pestle manufacturers.
„ potters.
„ ware manufacturers.
Terra-cotta manufacturers.
Tobacco pipe makers.
Vase manufacturers.

IV.—A producer in each of the trades may submit a specimen of each kind of object he manufactures, although such specimen may form only a part of a complete object.

V.—The aim of the exhibition being to bring prominently into notice specimens remarkable for excellence, novelty, invention, etc., it is desirable to have the fewest number of specimens from each producer, and only those which are absolutely necessary: consequently no duplicates of any object can be admitted.

VI.—Thus, it is desirable that exhibitors should send only one specimen of the same kind of object, such, for instance, as one tea-cup, one saucer, and one plate of the same tea service; one dish, etc., being of the same series or pattern; one plate, one tureen, one vegetable dish, etc., of the same dinner service; one jug of a series; one garden vase, one drain pipe, one tile of the same pattern, &c.; one toilet jug and bowl. But they may send several specimens each belonging to a different series or pattern; and if a different pattern is put upon the same shaped cup, the cup may be sent.

VII.—Two objects of the same pattern, such as jugs, differing only in size cannot be exhibited.

VIII.—To every object will be attached a label containing the following particulars :—

1.—The name of the specimen.
2.—The materials of which it is composed.
3.—The exhibitor's name.
4.—His address.
5.—If of sufficient importance, the name of the designer or actual maker.
6.—The reasons why it is offered for exhibition, such as—
Its body or composition.
Its form.
Its surface pattern.
Its novelty.
Its excellence.
Its cheapness.
7.—The price, if the exhibitor pleases.
8.—Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

* This list is of trades existing in the United Kingdom, but it may be suggestive to Foreign Commissions.

NEW MATERIALS FOR POTTERY.

IX.—Newly-discovered materials used in the production of pottery, new combinations of old materials, and new processes of manufacture may be exhibited.

X.—Persons engaged in the following trades, or any other trades connected with the preparation of the materials used in the manufacture of pottery, may send illustrations of their productions :—

Ash merchants.
Cnert stone dealers.
China clay merchants.
Clay merchants.
Flint millers.
Manganese merchants.
Marble clay merchants.
Pipe clay manufacturers and merchants.
Zaffre refiners.

XI.—It is desirable that the specimens of materials should be as small as possible, and such as can be exhibited in bottles or glass cases on a wall. The opportunities of admission will be greatly increased if the object be small.

XII.—To every specimen will be attached a label containing the following particulars :—

1. The name of the material and source from whence it is obtained.
2. The exhibitor's name.
3. His address.
4. The reasons why it is offered for exhibition, such as—
Its value and importance.
Its novelty.
Its superior excellence.
Its cheapness.
5. The price, unless the exhibitor objects.
6. Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

NEW MACHINERY FOR POTTERY.

XIII.—New machinery and apparatus will be admitted, and recent inventions relating to the different parts of the various machines and appliances used in the manufacture of Pottery may be shown either as complete machines, or separately in parts. Machinery in motion and processes may be shown.

XIV.—Persons engaged in the following and other trades in the United Kingdom connected with the manufacture of Pottery may send Exhibits :—

Brick makers' implement manufacturers.
„ mould makers.
Grinding mill makers.
Kiln builders.
Machinists in general.
Pug mill makers.
Potters' wheel makers.

XV.—To every specimen will be attached a label, containing the following particulars :—

1.—The name of the specimen.
2.—The purpose to which it is applied.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for Exhibition, such as—
The novelty of its invention.
The superiority of its productiveness or efficiency.
Its increased economy in producing.
Its cheapness.
6. The price, unless the Exhibitor objects.
7. Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

XVI.—Exhibitors whose machinery is admitted and requires to be fitted together will have to arrange it themselves in the Exhibition, but Her Majesty's Commissioners will, unless otherwise stipulated when the objects are admitted, find the necessary foundations.

GENERAL REGULATIONS FOR EXHIBITING WOOL AND WORSTED FABRICS.

I.—Woolen and worsted fabrics of all kinds will be exhibited—

With the raw produce and machinery for manufactures in the same.

II.—Producers engaged in the various trades, such as the following, connected with the manufacture of wool and worsted fabrics, are eligible to send specimens of the particular work in which they are engaged, although it forms only part of a complete object. Thus, a "beaver-cutter" may exhibit beaver-cutting; a pulp cloth manufacturer may exhibit specimens of pulp cloth; a yarn manufacturer, yarn, etc.

(a). *Woollen Trades.*

Army cloth manufacturers.
Baize manufacturers.
Billiard table cloth manufacturers.
Blanket manufacturers.
„ yarn spinners.
Cloth dressers.
„ drawers.
„ embossers.
„ factors and merchants.
„ finishers.
„ frizzers.
„ fullers.
„ manufacturers.
„ millers.
„ waterproofers.
„ workers.
Doeskin manufacturers.
Drugget manufacturers.
Dyers and scourers.
Felt makers.
Flannel agents.
„ factors.
„ manufacturers.
Fulling millers.
Horse cloth manufacturers.
Hot pressers.
Ironing cloth manufacturers.
Kersey manufacturers.
Machine cloth manufacturers.
Mourning hat band makers.
Navy clothiers.
Painted baize makers.
Pianoforte hammer and damper cloth manufacturers.
Printers' blanket manufacturers.
Pulp cloth manufacturers.
Railway wrapper manufacturers.
Roller clearer and ironing cloth manufacturers.
Saddle cloth makers.
Scribbling millers.
Shag manufacturers.
Ship felt makers.
Shoddy manufacturers.
Table cover manufacturers.
Upholsterers' woollen manufacturers.
Wool carders.
„ sheet manufacturers.
Woollen agents.
„ dyers.
„ factors.
„ cloth manufacturers.
„ cloth waterproofers.
„ manufacturers.
„ spinners.
„ waste dealers.
„ weavers.
Yarn manufacturers.

(b). *Worsted Trades.*

Alpaca manufacturers.
„ spinners.
Band and galloon makers.
Bell rope makers.
Berlin wool manufacturers.
Bombasin manufacturers.
Braid makers.
Bunting manufacturers.
Carpet manufacturers.
„ pattern designers.
„ planners.
„ weavers.
„ yarn manufacturers.
Cashmere manufacturers.
Cashmerett manufacturers.
Challis manufacturers
Chenille manufacturers.
Coach lace manufapturers.
„ trimmers.
„ upholstery and trimming manufacturers.
Damask manufacturers.
Fringe and lace makers.
Galloon and double makers.
Girth web manufactuerrs.
Hearth rug makers.
Lamb's wool manufacturers.
Lasting manufacturers.
Lindsey manufacturers.
Livery lace makers.
Machine combers.
Merino manufacturers.
„ spinners.
Military embroiderers.
„ sash makers.
Mohair manufacturers.
Moreen makers.
Mousseline de laine manufacturers.
Poplin manufacturers.
Railway woven badge manufacturers.
Rug manufacturers.
Satteen manufacturers.
Serge manufacturers.
Shalloon manufacturers.

Shawl border and fringe manufacturers.
„ cleaners.
„ darners.
„ manufacturers.
Stuff finishers.
„ manufacturers and agents.
Tassel manufacturers.
Trimming manufacturers.
Tweed manufacturers.
Upholsterers' trimming manufacturers.
Waistcoating manufacturers.
Web and webbing manufacturers.
Wool combers.
Woollen cord manufacturers.
„ stuff manufacturers.
Worsted dyers.
„ manufacturers.
„ spinners.
„ waste dealers.
Yarn manufacturers.

Not Classified.

Beaver cutters.
Blackwell hall factors.
Calenderers.
Domett manufacturers.
Embroiderers.
Embroidery designers.
Fent dealers.
Flock manufacturers.
Flushing manufacturers.
Gunny bag makers.
Listing manufacturers.
Machine habit manufacturers.
Mungo merchants and dealers.
Plainback manufacturers.
Plush manufacturers.
Regatta manufacturers.
Stripes manufacturers.
Zebra dress manufacturers.

III.—The Exhibition will be limited to such specimens as are necessary to show the different fabrics and their patterns in a satisfactory manner, and the specimens will be restricted to goods made entirely of wool, worsted or hair, or of wool, worsted or hair, combined with cotton, silk, or other textile materials.

IV.—Exhibitors must not send whole bales of cloth, rolls of carpet, or complete pieces of goods, and specimens should, if possible, not exceed three yards, unless the pattern requires a greater length. They may be exhibited in glass frames, which must not exceed two inches in depth or one and a half inches in width. The frames must be black.

V.—No duplicates can be admitted, but the same design may be shown with different combinations of colors.

VI.—To every object will be attached a label containing the following particulars :—

1.—The name of the fabric.
2.—The material of which it is made.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for exhibition, such as—
Its excellence of manufacture.
Its beauty of design.
Its permanence of dye or color.
Its ingenuity in the application of new materials.
Its novelty of production.
Its cheapness.
6.—The price, unless the exhibitor objects.
7.—Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

NEW MATERIALS FOR WOOL AND WORSTED FABRICS.

VII.—Wool and hair of various kinds not hitherto used in the manufacture of textile fabrics, and materials recently applied to the cleansing, preparation, and dyeing thereof, may be exhibited.

VIII.—Producers, such as the following, engaged in the preparation of the materials used in the manufacture of wool and worsted fabrics, may send specimens of them :—

Alkali manufacturers.
Alpaca wool merchants.
Alum manufacturers.
Ammonia manufacturers.
Annato manufacturers.
Aquafortis makers.

Arsenic manufacturers.
Bleaching liquid makers.
„ powder makers.
Blue manufacturers.
„ verditer makers.
Camel hair merchants.
Carmine makers.
Chemical color makers.
Chloride manufacturers.
Cobalt refiners.
Colorers.
Color manufacturers.
Copperas manufacturers.
Creosote manufacturers.
Cudbear makers.
Dye manufacturers.
Garacin manufacturers.
Goat's hair merchants.
Indigo blue manufacturers.
„ extract manufacturers.
„ manufacturers.
Indigo refiners.
Manganese merchants.
Merino wool merchants.
Mecklenburgh blue makers.
Mohair merchants.
Mordant makers.
Ochre manufacturers.
Oil of vitriol manufacturers.
Orchil and cudbear manufacturers.
Smalt manufacturers.
Soda ash makers.
„ crystal manufacturers.
„ merchants.
Spirits of salt manufacturers.
Sulphate of ammonia manufacturers.
„ of barytes manufacturers.
„ of copper manufacturers.
„ of soda manufacturers.
Turpentine distillers.
Ultramarine manufacturers.
Vitriol manufacturers.
Washing compound makers.
„ crystal manufacturers.
Wool factors.
„ merchants.
„ staplers.
Zaffre refiners.

IX.—To every specimen will be attached a label, containing the following particulars:—

1.—The name of the material.
2.—The express purpose for which it is used.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for exhibition, such as—
Its special mode of preparation for woollen and worsted fabrics.
Its comparative superiority.
Its peculiar qualities and properties.
Its commercial value and importance.
Its novelty of production or application.
Its cheapness.
6.—The price, unless the exhibitor objects.
7.—Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

NEW MACHINERY FOR WOOL AND WORSTED FABRICS.

X.—New machinery and apparatus used in the cleansing, preparation, and weaving of wool and hair, will be admitted, and improvements of the different parts of the various machines and appliances may be shown separately.

XI.—Manufacturers, such as the following, engaged in the production of machinery and apparatus used in the manufacture of wool and worsted fabrics, may exhibit under this head:—

Bobbin manufacturers.
„ turners.
Card machine makers.
„ makers.
„ teeth makers.
Cloth press makers.
Flyer makers.
Fork manufacturers (weft).
Gear and slay makers.
Hackle and gill pin manufacturers.
„ makers.
Heald and slay makers.
Heddle makers.
Jacquard card cutters.
„ harness mounters.
„ machine makers.
Loom makers.
„ mounters.
„ passers and twisters.
Machine joiners.
Machine makers.
Reed and slay makers.
Shuttle makers.
„ tip makers.
Spindle makers.
Spinner flyer makers.

Tassel and fringe mould turners.
Teazle rod manufacturers.
Weavers' harness makers and enterers.
„ joiners.
„ leash makers.
„ loom makers.
„ mail makers.
Weavers' turners.
Winding frame makers.
Wool card makers.
Wool comb makers.
Woollen card makers.
„ machine makers.
Woolley teeth makers.

XII.—To every object will be attached a label containing the following particulars:—

1.—The name of the object.
2.—The purpose to which it is applied.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for exhibition, such as—
Its ingenuity.
Its novelty.
Its improvement on ordinary construction.
Its increased economy in producing.
The superiority of its execution.
Its increased efficiency.
Its cheapness.
6.—The price, when the exhibitor does not object.
7.—Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

GENERAL REGULATIONS FOR EXHIBITING EDUCATIONAL WORKS AND APPLIANCES.

I.—The exhibition of educational works and appliances will include illustrations of all the subjects belonging to the following branches into which this class is sub-divided:—

1.—School buildings, fittings, furniture, etc.
2.—Books, maps, globes, instruments, etc.
3.—Appliances for physical training, including toys and games.
4.—Specimens and illustrations of modes of teaching Fine Art, Natural History, and Physical Science.
5.—Specimens of school work serving as examples of the results of teaching.

II.—The various trades engaged in the production of educational works and appliances will exhibit under this head, such as:—*

1.—*School Buildings, Fittings, and Furniture.*

Abacus frame makers.
Black board makers.
Diagram stand makers.
Easel makers.
Ink well makers.
Object lesson cabinet makers.
Reading frame makers.
School apparatus makers.
„ building model makers.
„ clock makers.
„ desk makers.
„ fitting makers.
„ form makers.

2.—*Books, Maps, Globes, Instruments, etc.*

Chart sellers.
Copy book publishers.
Engravers—(map).
„ (music).
Globe makers.
Ink powder makers.
Inkstand makers.
Map and chart sellers and publishers.
„ and print colorers.
„ engravers and printers.
„ mounters.
Mathematical instrument makers.
Music copyists.
Pen makers.
Pencil makers.
Penholder makers.
Publishers.
Quill and pen manufacturers.
Raised map makers.
School slate makers.
Slate pencil makers.
Steel pen manufacturers.
Topographers.
Writing ink makers.

* This list is of trades existing in the United Kingdom, but it may be suggestive to Foreign Commissions.

3.—*Appliances for Physical Training, including Toys and Games.*

Archery tackle makers.
Backgammon board makers.
Ball and balloon makers.
Bowstring makers.
Bicycle makers.
Chess board makers.
Cricket bat, ball, and stump makers.
Croquet manufacturers.
Dissected map makers.
Doll makers.
Foot ball manufacturers.
Gilt toy makers.
Glass toy makers.
Gymnasium makers.
Hoop makers.
Map dissectors.
Marble manufacturers.
Pedometer makers.
Puzzle makers.
Rocking horse makers.
Skate makers.
Skittle makers.
Target makers.
Top makers.
Toy makers.

4.—*Specimens and Illustrations of the modes of Teaching Fine Art, Natural History, and Physical Science.*

Anatomical figure makers.
Aquaria makers.
Artists' colourmen.
Barometer makers.
Bird and beast stuffers.
Black lead pencil makers.
Botanical collectors.
Camel hair pencil makers.
Chemical apparatus makers.
Coloured saucer makers.
Crayon makers.
Drawing board makers.
Drawing instrument makers.
Drawing model makers.
Electric apparatus manufacturers.
Fossil dealers.
Galvanic apparatus manufacturers.
Geological collectors.
Magic lantern makers.
Magnet makers.
Makers of musical instruments for schools.
Mechanical figure makers.
Microscope makers.
Mineralogists.
Naturalists.
Nautical instrument makers.
Optical instrument makers.
Orrery and tellurian makers.
Philosophical instrument makers.
Pink, &c., saucer makers.
Plaster cast figure makers.
Preparers of botanical specimens.
" of microscopic objects.
Stereoscope makers.
Sun dial makers.
Telegraph instrument makers.
Telescope makers.
Thermometer makers.
Ward's case makers.
Zoological artists.

III.—All the producers named in these lists are eligible to send new illustrations of their respective branches of production.

IV.—The aim of the Exhibition being to show specimens remarkable for excellence, novelty, invention, etc., it is desirable to have the fewest number of specimens from each producer, and only those which are absolutely necessary; consequently no duplicates of any object can be admitted.

V.—Models of school buildings, heating and ventilating apparatus, etc., ought not to exceed the scale necessary to show their construction or working parts intelligibly. But generally, drawings showing the buildings, etc., in plan, section, and elevation will be preferred to models, as they can be more easily exhibited.

VI.—Specimens of fittings, furniture, &c., such as desks and forms, must be kept within moderate limits; for instance, the desks and forms ought not to exceed four feet in length.

VII.—The specimens, illustrations, and collections used in teaching Fine Art, Natural History, and Physical Science ought not to be so large or costly as to be beyond the reach of ordinary schools.

VIII.—As far as possible, they should be exhibited in glass frames, which should not exceed two inches in depth and one and a half inches in width. The frames should be black.

IX.—To every object will be attached a label containing the following particulars :—

1.—The name of the specimen.
2.—The purpose for which it is intended.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for exhibition, such as—
Its special fitness for its purpose.
Its illustrative character.
Its novelty.
Its ingenuity.
Its comparative superiority.
Its cheapness.
6.—The price, unless the exhibitor objects.
7.—Any explanations, &c.

X.—Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

5. *Specimens of School Work, serving as examples of the results of teaching.*

XI.—These will be confined to the following :—

(a.)—Writing, plain and ornamental.
(b.)—Drawing and design.
(c.)—Modelling in clay, terra-cotta, wax, &c.
(d.)—Models of machinery, building construction, &c.
(e.)—Needlework, plain and ornamental, lace, knitting, &c.
(f.)—Miscellaneous work by pupils in schools for the blind, reformatories, &c.

XII.—Under *(a). Writing*, will be included examples of dictation, translation, writing from memory, map drawing, and other school work which can be conveniently shown on paper. This should be on good paper, in single leaves not exceeding twelve inches by nine inches, written on one side only, and each complete in itself. No one school must send more than such leaves at the utmost, and the contributions should be chosen with the view of showing the general work throughout the school, and not that of one or two advanced scholars. The name of the school and the age of the scholar, with the time during which he has been under instruction, should be added. As the object is not to compare the work done in different schools in any one country, but rather to furnish the means of comparison between the school work of different countries, a limited number of examples only can be exhibited.

XIII.—Contributions falling under *(d). (e). (f).* must show some special excellence, ingenuity, or originality, in order to entitle them to admission. To each of these objects will be attached a label containing the following particulars :—

1.—Name of school.
2.—Age of scholar.
3.—Period of instruction.
4.—The reason why the object is offered for exhibition, such as—
Its excellence of workmanship.
The special circumstances under which it has been produced.

XIV.—Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

ANNUAL INTERNATIONAL EXHIBITIONS OF SELECT WORKS OF FINE AND INDUSTRIAL ART AND SCIENTIFIC INVENTIONS.

ALLOTMENT OF SPACE TO FOREIGN COUNTRIES.

In accordance with the general rule (F) the objects will be arranged in the following classes, and the amounts of space allotted to for each class will be as follows :—

	Horizontal space in Glass Cases about 7 feet high.	Horizontal space on the floor unlimited in height.	Vertical space on walls about 15 feet high, beginning at 2 feet 6 inches from the floor.	Vertical space on screens about 7 feet high.
	Superficial feet.	Superficial feet.	Feet run.	Feet run.
I.—FINE ARTS—				
1. Paintings of all kinds ...	Unlimited space, but the objects, if many, may be liable to be arranged under open arcades, or in the Royal Horticultural Gardens.			
2. Sculpture, in Marble, Stone, Bronze, or Plaster.				
2*a*. Small Sculptures in other Materials.				
3. Engravings, Lithographs, Photographs, &c.				
4. Architectural Designs ...				
4*a*. Architectural Models ...				
5. Tapestries and Carpets, shown for their Fine Art.				
5*a*. Shawls, Lace, &c., shown for their Fine Art.				
6. Designs for all kinds of Decorative Manufactures.				
7. Copies of Ancient or Mediæval Pictures, Mosaics, &c.				
7*a*. Reproductions of large Monuments of Sculpture, or Architecture.	Unlimited if exhibited in arcades, or in the open air.			
7*b*. Reproductions of small Objects.				
II.—SCIENTIFIC INVENTIONS AND NEW DISCOVERIES OF ALL KINDS.	If any object is above feet high, its height should be specified.			

ALLOTMENT OF SPACE, *&c.*,—*continued.*

	Horizontal space in Glass Cases about 7 feet high.	Horizontal space on the floor unlimited in height.	Vertical space on walls about 15 feet high, beginning at 2 feet 6 inches from the floor.	Vertical space on screens about 7 feet high.
	Superficial feet.	Superficial feet.	Feet run.	Feet run.
III.—MANUFACTURES—				
a. POTTERY of all kinds ...	An unlimited amount of space is assigned to special objects which may exceed feet in height, which can be shown under arcades or in the open air, but due notice of them, their character and dimensions, must be given before 1st November 1870.			
New Raw Materials, Machinery, and Processes for Pottery.				
b. WOOLLEN AND WORSTED FABRICS.				
*b*1. Raw Produce, Machinery, and Processes.				
*b*2. Woollens of all kinds, except Carpets.				
*b*3. Shawls				
*b*4. Mixed Fabrics ...				
*b*5. Carpets				
c. EDUCATIONAL				
*c*1. School Buildings, Fittings, Furniture, &c.				
*c*2. Books, Maps, Globes, Instruments, &c.				
*c*3. Appliances for Physical Training, including Toys and Games.				
*c*4. Specimens and Illustrations of the Modes of Teaching Fine Art, Natural History, and Physical Science.				
*c*5. Specimens of School Work, serving as examples of the Results of Teaching.				

IV.—Her Majesty's Commissioners undertake to find the several spaces above described, and to arrange the objects in large glass cases where necessary. The spaces must not be exceeded, or the excess of objects will be liable to exclusion. Exhibitors who prefer it may place their objects in plain black frames glazed, not exceeding three inches in depth.

V.—Provided the aggregate space of each kind be not exceeded, Foreign Commissions are free to vary the proportions here allotted. Thus, in Paintings (No. 1) and Copies of Paintings (No. 7) to be hung on walls, and with Engravings (No. 3), Architectural Designs (No. 4), Shawls (5*a*), Designs (No. 6), to be exhibited on Screens, the exact allotments need not be maintained. If no Architectural Designs are exhibited, the space may be allotted to Shawls or Engravings, provided always that the aggregate space of each kind be not exceeded.

ANNUAL INTERNATIONAL EXHIBITIONS OF SELECT WORKS OF FINE AND INDUSTRIAL ART AND SCIENTIFIC INVENTIONS.

The objects in the first Exhibition will consist of—

I.—FINE ARTS APPLIED, OR NOT APPLIED, TO WORKS OF UTILITY.

II.—SCIENTIFIC INVENTIONS AND NEW DISCOVERIES OF ALL KINDS.

III.—MANUFACTURES.—

(a.)—Pottery.
(b.)—Woollen and worsted fabrics.
(c.)—Educational.

Under fine art, all works must be exhibited in the artist's own name; but the name of the firm for whom the object was designed will be added, or the name of the Rajah by whom the works are sent to the Exhibition. (See specimen of catalogue, page 5, under Carpets).

The exhibitors from India might exhibit paintings applied to boxes, &c., enamels and the like, ivory carving, mosaics, &c., Cashmere shawls.

The works of deceased artists are not admissible, except as copies or reproductions.

All works of art and manufactures must have been executed since 1862.

A producer may exhibit any number of reproductions or copies of ancient or mediæval art, provided he obtain a certificate for their admission.

The manufactures included in the first Exhibition will be restricted to three classes, *viz.*, pottery, woollen and worsted, and educational classes; but the exhibition of scientific inventions and discoveries will in no way be restricted, but will embrace all kinds of inventions and discoveries in physics, mechanics, and chemistry, which may be deemed worthy of admission.

A producer in each of the classes may submit a specimen of each kind of object he manufactures, although such specimen may form only a part of a complete object.

The aim of the Exhibition being to bring prominently into notice specimens remarkable for excellence, novelty of invention, &c., it is desirable to have the fewest number of specimens from each producer, and only those which are absolutely necessary, consequently no duplicate of any object can be admitted.

Thus it is desirable that exhibitors should send only one specimen of the same kind of object. In the woollen and worsted and educational classes, the specimens should be kept within moderate limits as to size. But producers may send several specimens, each belonging to a different series or pattern, and if a different pattern be put upon the same shaped cup, the cup may be sent. In woollen and worsted manufactures, the same design may be shown in different combinations of colors.

The exhibition of woollen and worsted fabrics will be limited to such specimens as are necessary to show the different fabrics and their patterns in a satisfactory manner, and the specimens will be restricted to goods made entirely of wool, worsted or hair, or of wool, worsted or hair, combined with cotton, silk, or other textile materials. It would be desirable to obtain a specimen of all the different modern woollen fabrics made in each district of India with the prices at which they are sold. India could make a capital collection of toys, games, perhaps apparatus for teaching.

New machinery and apparatus, newly discovered materials, and new combinations of old materials, used in the manufacture of objects comprised in the three classes, will be admitted, and recent inventions relating to the different parts of the various machines and appliances used in such manufactures may be shown either as complete machines, or separately in parts. Machinery in motion and processes of manufactures may be shown.

Appendix B.

FINE ARTS.

PAINTING IN OIL.

Painting in Oil.		Exhibitors' Names.
1	THE BATTLE OF COLIN, 1757 ... ... VIENNA. Born at ; pupil of ; Second Prize, 1867.	*S. ALLEMAND, Jun.*
2	THE MUMMY ... ... HOLLAND. Born at Dronryp, Friesland; pupil of Baron Leys: Medal, 1864; Second Prize, 1867; Knight of the Order of Leopold.	*ALMA-TADEMA.*
3	SWEDISH LANDSCAPE; NIGHT SCENE ... ... SWEDEN. Born at ; pupil of	*E. BERGH.*
4	SHEEP ON THE SEA-SHORE ... ... FRANCE. *By, Commune de Thomery, Seine et Marne.* Born at Bordeaux; pupil of R. Bonheur, her father: 3rd Class Medal, 1845; 1st Class Medal, 1848; 'Exempt from the jury of admission by special decision' ('Moniteur' of the 27th July 1853); 1st Class Medal, 1855; Chevalier of the Legion of Honour, 1865; Second Prize, 1867.	*Mddle. M. R. BONHEUR.*
5	CATTLE	*Mddle. M. R. BONHEUR.*
6	A SHOEMAKER'S WIFE, WITH HER CHILD AND AN APPRENTICE, WATCHING A MOUSE IN A TRAP ... ... WIESBADEN. Born at ; pupil of ; 1st Class Medal, 1855; Grand Prize, 1867.	*Prof. L. KNAUS.*
7	PORTRAIT OF A LADY ... ... LONDON. Born at ; pupil of	*Sir F. GRANT, P. R. A.*
8	THE BATTLE OF POLTAWA ... ... RUSSIA. Born at ; pupil of ; 3rd Prize, 1867.	*A. KOTZEBUE.*
9	THE SHREW TAMED ... ... LONDON. 1 *St. John's Wood Road.* Born at ; pupil of ; Grand Medal of Honour, 1855.	*Sir E. LANDSEER, R.A.*
10	EXPECTATION ... ... FRANCE. *Poissy, Seine et Oise.* Born at Lyons; pupil of L. Coignet: 3rd Class Medal, 1840; 2nd Class Medal, 1841; 1st Class Medal, 1843; Chevalier of the Legion of Honour, 1849; 1st Class Medal, 1855; Grand Medal of Honour, 1855; Officer of the Legion of Honour, 1856; Member of the Institute, 1861; Grand Prize, 1867.	*J. L. E. MEISSONIER.*
11	THE FARRIER	*J. L. E. MEISSONIER.*
12	SERMON IN THE SISTINE CHAPEL ... ... MADRID. Born at ; pupil of ; Second Prize, 1867.	*V. PALMORALI.*
13	THE VISIT ... ... BELGIUM. Born at ; Medal, 1851; Second Class Medal, 1855; First Prize, 1867.	*Chevalier A. STEVENS.*
14	COURTIERS AND PEASANTS, WÜRTTEMBERG ... ... SWITZERLAND. *Lausanne, Vaud.* Born at ; pupil of ; Second Prize, 1867.	*B. VAUTIER.*

PAINTING IN WATER COLOURS.

Painting in Water Colours.		
1	STAG HUNT ... ... LONDON. *President of the Society of Painters in Water Colours.* Born at	*FREDERICK TAYLOR, R.W.S.*
2	FIRST NOTES OF THE CUCKOO ... ... LONDON. 29, *Upper Phillimore Place, Kensington.* Born at ; pupil of	*E. G. WARREN.*
3	LANDSCAPE, ABINGER COMMON ... ... LONDON. *Hyde Park Gate.* Born at ; Royal Academician; Surveyor of Her Majesty's Pictures; Inspector-General for Art of the Science and Art Department; author of various Reports on Design in International Exhibitions, &c. Chevalier of the Legion d'Honneur.	*R. REDGRAVE, R.A.*

PAINTING IN ENAMEL.

1	PORTRAIT OF RENÉE OF FRANCE, DUCHESS FERRARA ... francs ... ... PARIS. Born at ; pupil of	Painted in enamel. Price 1,000 *A. MEYER*

PAINTING ON EARTHENWARE.

Painting on Earthenware.		
1	THE GENIUS OF PAINTING, and the GENIUS OF SCULPTURE. Painting on earthenware. Executed at the Imperial Manufactory, Sèvres ... ... PARIS (near), 152, *Rue de la Tour, Passy.* Born at Eschwiller, Moselle; pupil of P. Delaroche: 1st Class Medal, 1843; 2nd Class Medal, 1855; Chevalier of the Legion of Honour, 1853; Grand Medal of Honour, 1867; Second Prize, 1867.	*A. YVON.*
2	A VASE IN MAJOLICA—JUPITER AND EUROPA, after Guido, painted for Minton and Co., Stoke-on-Trent ... ... STOKE-ON-TRENT. Medal, 1867.	*W. ALLEN.*

PAINTING APPLIED TO DECORATION.

Painting applied to Decoration.		
1	PORCELAIN PLAQUE. Copy of Mulready's "Crossing the Brook." Adapted to a Cabinet and Stand designed by Professor Semper ... ... ENGLAND. Born at ; pupil of Central School of Design.	*G. GRAY.*
2	FAN. Ivory, richly carved and gilt. The front of the fan is painted with three medallions representing—1.—Before the Tournament; 2.—The Tournament; 3.—After the Tournament. Painted and designed for M. Alexandre ... ... FRANCE. Born at ; pupil of	*E. MOREAU.*
3	PAINTINGS for a Cabinet designed by W. J. Burgess, Esq., Architect... LONDON, 106, *Gower Street.* Born at Paris; pupil of the Royal Academy, London, and M. Gleyre, Paris; Associate Royal Academician.	*E. J. POYNTER, A.R.A.*

MOSAICS.

Mosaics. — **Exhibitors' Names.**

1 A TABLE IN ROMAN MOSAIC ... ... *The Cavaliere BARBERI.*
ROME. Born at ; pupil of : Council Medal, 1851.

2 MOSAIC WALL PICTURE, in coloured marbles, black inlaid outlines ... *Baron H. De TRIQUETI.*
PARIS. Born at ; pupil of .

3 MOSAIC—OPUS ANGLICANUM. Figure of Leonardo da Vinci, designed by J. Tenniel; worked by Miss Florence Cole and other Students of the School of Art, South Kensington.

4 MOSAIC PICTURE IN VENETIAN GLASS ENAMEL OF SIR JOSHUA REYNOLDS, P. R. A., executed from the design of Mr. H. Phillips for the South Kensington Museum *SALVIATI & Co.*
LONDON. Established .

5 MURAL MOSAIC WORK, Monumental or Byzantine style, in Venetian Enamel, representing Christ on the Judgment Throne, from the design of Gambier Parry, Esq. ... *SALVIATI & Co.*

CARTOONS.

Cartoons.

1 THE EPOCH OF THE REFORMATION ... ... *G. De KAULBACH.*
MUNICH. *Director of the Academy of Fine Arts.* Born at : 1st Class Medal, 1855; Grand Prize, 1867.

SCULPTURE.

SCULPTURE IN MARBLE AND STONE.

Sculpture.

1 EQUESTRIAN STATUE OF H. M. KING WILLIAM, erected for the eastern portal of the Bridge of the Rhine at Cologne, by the Administration of the Cologne Minden Railway ... ... *PROFESSOR F. DRAKE.*
BERLIN. Born at ; pupil of : Prize Medal, 1851; Honourable Mention, 1855; Grand Prize, 1867.

2 PIETY—Marble Group ... ... *J. DUPRE.*
FLORENCE. Born at ; pupil of : 1st Class Medal, 1855; Grand Prize 1867.

3 NAPOLEON, FIRST CONSUL—Marble Bust ... ... *E. C. J. B. GUILLAUME.*
PARIS. *Imperial School of Fine Arts.* Born at Montbard, Cote d'Or; pupil of Pradier: Prize of Rome, 1845; 2nd Class Medal, 1852; 1st Class Medal, 1855; Chevalier of the Legion of Honour, 1855; Member of the Institute, 1862; Grand Prize, 1867.

4 EPISODE OF THE DELUGE, with bas-relief representing the Wrath of God, the Building of the Ark, the End of the Deluge, and the First Sacrifice of Noah. Two children quarrelling for a dove ... ... *V. LUCCARDI.*
ROME. *Professor of the Academy of St. Luke.* Born at ; pupil of : Second Prize, 1867.

5 SAUL UNDER THE INFLUENCE OF THE EVIL SPIRIT—Colossal Statue in Marble *W. W. STORY.*
Born at ; pupil of

6 CHRISTOPHER COLUMBUS AND AMERICA—Plaster Group ... ... *A. VELA.*
TURIN. Born at ; pupil of : Honourable Mention, 1855; 1st Prize, 1867.

SCULPTURE IN WOOD.

Sculpture in Wood.

1 CABINET richly carved and inlaid in ebony and stained woods. French Renaissance style. Executed by M. Fourdinois. Price 2,750*l.* ... ... *M. NIVILLER.*
FRANCE. Born at ; pupil of : 2nd Class Medal, 1855; Silver Medal, 1867.

2 PORTRAIT OF THE PRINCESS MARIA PIA. In carved boxwood. Price 300 francs *L. FRULLINI.*
ITALY. Born at ; pupil of : Silver Medal, 1867.

3 CABINET. Marquetry of variously coloured woods, ornamented with figures, festoons of flowers, &c., in full relief in bronze gilt; in the front and sides are oval plaques of porcelain; the whole surmounted by a mirror in a frame of carved and gilt wood. The top cabinet is composed of inlaid marbles. English, modern. Manufactured by Messrs. Jackson and Graham ... ... *E. PRIGNO.*
PARIS. 70 *Rue Rochechouart.* Born at ; pupil of : Gold Medal, 1867.

WORKS IN METAL.

Sculpture in Metal.

1 CLOCK. Female figure "Contemplation" seated on a black marble base. Imitation bronze. Manufactured by J. Boy, 106 Rue Turenne, Paris .. ... *A. CARRIER-BELLEUSE.*
PARIS. Born at ; pupil of : 1st Class Medal, 1855; Gold Medal, 1867; Practised Modelling in the Staffordshire Potteries for Messrs. Minton and Co. and others, about 1851 and following years.

2 A BRONZE CUP encrusted with Gold and Silver. Executed for M. F. Barbedienne, 30 Boulevard Poissonnière, Paris. Price 320*l.* ... ... *S. CONSTANT.*
PARIS. Born at ; pupil of : Honourable Mention, 1855; Gold Medal, 1867.

3 TWO MEDALS, designed by ... ... *E. FERNANDEZ PESCADOR.*
MADRID. Born at ; pupil of : Second Prize, 1867.

4 SHIELD. Silver and damascened iron. Executed for Messrs. Elkington and Co. ... *M. LADUIL.*
Born at ; pupil of : Gold Medal, 1867.

5 CUP WITH TWO HANDLES. Silver repoussé work. The design consists of fruits, corn, and foliage. Executed by M. Desiré Attarge for M. F. Barbedienne, 30 Boulevard Poissonnière, Paris. Price 3,000 francs ... ... *C. LEONIN.*
Born at ; pupil of

6 A SILVER COFFEE POT. Executed for Messrs. Christofle and Co., 56 Rue de Bondy, Paris ... ... *M. MADROUX.*
PARIS. Born at ; pupil of : Silver Medal, 1867.

7 FRAME. Double in Spanish niello work. Price 260 francs ... ... *E. ZULOAGA.*
Born at ; pupil of : Silver Medal, 1867.

SCULPTURE IN IVORY.

Sculpture in Ivory. — **Exhibitors' Names.**

1 CHRIST ON THE CROSS ... ... *J. L. MOREAU.*
PARIS. 15 *Rue Tiquetonne.* Born at ; pupil of : Silver Medal, 1867.

2 FEMALE FIGURE ... ... *J. L. MOREAU.*

ENGRAVINGS, LITHOGRAPHY, PHOTOGRAPHY, ETC.

ENGRAVINGS.

Engravings.

1 THE DISPUTE, after Raphael (line engraving). 1,200 francs ... ... *J. KELLER.*
Professor in the Academy of DUSSELDORF. Born at ; pupil of : Grand Prize, 1867.

2 THE COUNTESS OF BEDFORD, after Vandyke ... ... *J. H. ROBINSON, A. R. A.*
PETWORTH. *New Grove.* Born at ; pupil of : 1st Class Medal, 1855.

LITHOGRAPHY.

Lithography.

1 THE CROWNING OF THE VIRGIN, after the Picture by Fra Angelico, in the Louvre *A. FRANCOIS.*
PARIS. 50 *Avenue de Breteuil.* Born in Paris; pupil of M. Hewisquel; 1st Class Medal, 1851; 1st Class Medal, 1857; Grand Prize, 1867.

PHOTOGRAPHY.

Photography.

1 PHOTOGRAPHS AND REPRODUCTIONS in a frame ... ... *R. J. BINGHAM.*
PARIS. 58 *Rue de la Rochefoucauld.* Born at ; pupil of : Medal, 1862; Grand Prize, 1867.

2 PHOTOGRAPHS in one frame ... ... *A. BRAUN.*
FRANCE. *Dornach, Haut Rhin.* Born at ; pupil of : 1st Class Medal, 1855; Medal, 1862; Silver Medal, 1867.

3 PHOTOGRAPHIC PLATES for Engraving and Printing; Engraving on Glass; Photographic Enamels and Stained Glass; Photographs by the Carbon Process in one frame *H. GARNIER.*
PARIS. 8 *Rue du Pourtour de l'Eglise-Grenelle.* Born at ; pupil of : Medal, 1862; Grand Prize, 1867.

4 PHOTOGRAPHICALLY ENGRAVED PLATES and PRINTS from the same ... *J. W. SWAN.*
NEWCASTLE-ON-TYNE. 21 *Leazes Terrace.* Born at ; pupil of ; Silver Medal, 1867.

ARCHITECTURAL DESIGNS AND MODELS.

Architectural Designs, &c.

1 RESTORATION OF THE APPIAN WAY. Five Drawings ... ... *G. A. ANCELET.*
FRANCE, *Biarritz.* Born in Paris; pupil of M. Baltard: Prize of Rome, 1851; Chevalier of the Legion of Honour, 1866; Grand Prize, 1867.

2 PROJECTED BUILDINGS for Vienna, Brunn, and Pesth ... ... *Chevalier H. FERSTL.*
VIENNA. *Councillor of the Academy, Member of the Imperial Museum of Art and Trade.* Born at ; pupil of : Grand Prize, 1867.

3 PROJECT FOR THE DECORATION OF THE INTERIOR OF A CHURCH, taken in part from the Apocalypse of St. John; nine sheets of drawings ... ... *C. J. LAMEIRE.*
PARIS. 44, *Rue Barbet de Jouy.* Born in Paris; pupil of M. Dennelle: Medal, 1866; First Prize, 1867.

4 VIEW OF THE EXTERIOR OF MANCHESTER ASSIZE COURTS ... ... *A. WATERHOUSE.*
LONDON. 8, *New Cavendish Square.* Born at ; pupil of : Grand Prize, 1867.

TAPESTRIES.

Tapestries.

1 TAPESTRY: subject, Still Life, after Desportes, executed at the Imperial Manufactory of Beauvais ... ... *P. A. CHABAL-DUSSURGEY.*
PARIS. Born at Charlieu, Loire; pupil of the School of Lyons: Gold Medal, 1867.

2 THE ASSUMPTION, after Titian, executed at the Imperial Manufactory of the Gobelins ... *M*****
FRANCE. Born at ; pupil of .

CARPETS.

Carpets.

1 A CARPET executed at the Imperial Manufactory of the Gobelins ... ... *M*****
FRANCE. Born at ; pupil of .

2 A CARPET, made of Cashmere wool, sent for exhibition by His Highness Dewan Singh, Chief Minister of Cashmere, designed by ... ... *M*****
Born at ; pupil of .

EMBROIDERIES.

Embroideries.

1 SILK BANNER, embroidered by hand, with Gold and Silver ... ... *M. G. BRANGWYN.*
BELGIUM. Born at ; pupil of .

SHAWLS.

Shawls.

1 AN INDIAN SHAWL, sent for exhibition by His Highness Dewan Singh, Chief Minister of Cashmere ... ... *M*****
Born at ; pupil of .

LACE.

Lace.

1 LACE SHAWL, worked for Messrs. A. Lefebure and Son, Bayeux, Calvados ... *A. ROUSSELLE.*
FRANCE. Born at ; pupil of : Silver Medal, 1867.

DESIGNS FOR ALL KINDS OF DECORATIVE MANUFACTURES.

Designs, &c.

1 DESIGNS FOR SHAWLS ... ... *BERRUS.*
PARIS. 65, *Rue Montmartre.* Born at ; pupil of : Gold Medal, 1867.

2 DESIGNS FOR PLAYING CARDS AND LINEN ORNAMENTS ... ... *O. JONES.*
LONDON. 9, *Argyll Place, Regent Street.* Born at ; pupil of : Prize Medal, 1851; 2nd Class Medal, 1855; Medal 1862; Gold Medal, 1867.

3 MODELS FOR JEWELLERY, PLATE, AND ARTISTIC BRONZES ... ... *E. PHILLIPE.*
PARIS. 8, *Rue du Renard, St Sauveur.* Born at ; pupil of : Gold Medal, 1867.

4 NEW COMBINATION of forms and colours for encaustic paving ... *Sir M. D. WYATT.*
LONDON. 37, *Tavistock Place.* Born at ; pupil of : Prize Medal, 1851; Honourable Mention, 1855; Chevalier of the Legion of Honour; Knight of the United Kingdom; Medal, 1862.

COPIES AND REPRODUCTIONS.

COPIES OF PICTURES.

Copies of Pictures. — Exhibitors' Names.

1 COPY OF THE TRANSFIGURATION, by Raphael ... ... *S. ZERI.*
ROME. Born at ; pupil of .

COPIES OF TAPESTRIES.

Copies of Tapestries.

1 COPIES OF GOBELINS AND BEAUVAIS TAPESTRIES ... ... *M. GUICHARD.*
FRANCE. Born at ; pupil of : 1st Class Medal, 1855.

REPRODUCTIONS IN GALVANO-PLASTIC AND ELECTROTYPE.

Reproductions, &c.

1 FAC-SIMILE IN GALVANO-PLASTIC OF THE CUP OF MINERVA, forming part of the Treasure of Hildesheim, lately discovered in Hanover ... ... *CHRISTOFLE & Co.*
PARIS. *56, Rue de Bondy.* Established : Prize Medal, 1851; Grand Medal of Honour, 1855; Medal, 1862.

2 FAC-SIMILE IN GILT ELECTROTYPE OF ROUMANIAN TREASURES, lately discovered at Petrossa ... ... *J. W. FRANCHI & SON.*
LONDON. 26, *Myddleton Street.* Established : Honourable Mention, 1855.

3 ELECTROTYPE SUIT OF ARMOUR from the original in the Louvre, Paris *FRERES LIONNET.*
FRANCE. Established : Honourable Mention, 1862; Silver Medal, 1867.

SCIENTIFIC INVENTIONS.

Scientific Inventions.

1 SPECIMEN OF CAST STEEL, manufactured by the process invented by ... *H. BESSEMER.*
LONDON. Born at : Prize Medal, 1851; Medal, 1862; Grand Prize, 1867.

2 A DYNAMOMETER, invented by ... ... *General MORIN.*
PARIS. Born at : pupil of the Polytechnic School. Medal 1862.

3 A SCREW WITH PLUS THREAD, invented by ... ... *Major PALLISER.*
LONDON. Born at .

4 SPECIMENS OF ANILINE COLOURS, invented by ... ... *W. H. PERKIN.*
LONDON. Born at : Prize Medal, 1862.

5 A METEOROGRAPHIC MACHINE FOR REGISTERING THE PRINCIPAL METEOROLOGICAL PHENOMENA, invented by ... ... *Father SECCHI.*
ROME. Born at : Grand Prize, 1867.

6 A REGENERATIVE GAS FURNACE, invented by ... ... *C. W. SIEMENS.*
LONDON. Born at : Prize Medal, 1851; 1st Class Medal, 1855; Medal, 1862; Grand Prize 1867.

7 AN ELECTRIC TELEGRAPH, invented by ... ... *Sir C. WHEATSTONE.*
LONDON. Born at .

8 A SPECIMEN OF HOMOGENEOUS STEEL, manufactured by the process invented by *Sir J. WHITWORTH, Bart.*
MANCHESTER. Born at : Council Medal, 1851; Grand Medal of Honour, 1855; Medal, 1862; Grand Prize and Silver Medal, 1867; created a Baronet, 1869.

9. A MAGNETO-ELECTRIC MACHINE. Invented by ... ... *H. WILDE.*
MANCHESTER.

MANUFACTURES.

POTTERY.

Pottery.

1 VASE AND COVER; porcelain; pale-green ground, painted with flowers in natural colours. Statuette of a child forms knob of cover; gilt handles ... *W. T. COPELAND & SONS.*
LONDON, AND STOKE-UPON-TRENT. Established : Prize Medal, 1851; 2nd Class Medal, 1855; Prize Medal, 1862; Gold Medal, 1867.

2 VASE; porcelain; amphora shaped; pale-green ground, with gilt ornaments and handles. Painted on one side with Italian landscape after Turner ... *W. T. COPELAND & SONS.*

3 A CIRCULAR FAIENCE DISH; light-blue ground; lilies and passion-flowers. Manufactured by ... ... *T. DECK.*
PARIS. 46, *Boulevard St Jacques.* Established : Silver Medal, 1867.

4 A FLAT EARTHENWARE DISH ON FOOT. Designed by Mons. E. Reiber. In the centre a half-length female figure, holding a daisy or marguerite in her hand. On a scroll the words, "A la belle Marguerite." Round the base of the foot, "O Marguerite sois toujours la confidente de nos amours." Executed by a new process by ... ... *T. DECK.*

5 AN ARCHITECTURAL ORNAMENT IN TERRA COTTA. Manufactured by ... *H. DRASCHE.*
VIENNA. *Elizabeth Strasse.* Established : Gold Medal, 1867.

6 A PORCELAIN VASE; white ground painted with a design of flowers and foliage. Manufactured by ... ... *MINTON & Co.*
STOKE-UPON-TRENT. Established : Council Medal, 1851; Grand Medal of Honour, 1855; Medal, 1862; Gold Medal, 1867.

7 A PORCELAIN PLATE, ornamented by printing and gold. A new process ... *MINTON & Co.*

8 A STATUETTE IN PARIAN—FLORA. A new design, by John Bell ... ... *MINTON & Co.*

9 AN EARTHENWARE TOILETTE BASIN AND JUG: new form and new pattern. Printed by surface printing ... ... *MINTON & Co.*

10 A VEGETABLE DISH AND COVER; porcelain; painted with flowers, foliage, and animals. Manufactured by... ... ... *C. PILLIVUYT & Co.*
PARIS. 46, *Rue de Paradis Poissonnière.* Established : Prize Medal, 1851; 1st Class Medal, 1855; Medal, 1862; Gold Medal, 1867.

11 A PARIAN VASE. Manufactured by ... ... *VILLEROY & BOCH.*
PRUSSIA. *Mettlach.* Established : Prize Medal, 1855; Medal, 1862; Gold Medal, 1867.

WOOLLEN FABRICS.

Woollen Fabrics. — Exhibitors' Names.

1 A SPECIMEN of CHIPPING NORTON DOESKIN for riding trousers. Exhibited for its superior fineness, and manufactured by ... ... *W. BLISS & SON.*
CHIPPING NORTON. Established : Prize Medal, 1851; Medal, 1862; Silver Medal, 1867.

2 SPECIMEN OF SCARLET CLOTH, shown for its superior finish. Manufactured by *CHARLES HOOPER & Co.*
EASTINGTON, *near* STROUD. Established : Prize Medal, 1851; Medal, 1862.

3 A SPECIMEN OF LIVERY CLOTH, shown for stoutness and colour. Manufactured by *B. GOTT & SONS.*
LEEDS. Established : Prize Medal, 1851; Medal, 1862.

4 A SPECIMEN OF BLACK CLOTH of superior finish. Manufactured by ... *J. SIMONIS.*
BELGIUM. *Verviers.* Established : (Jury, 1851); First Class Medal, 1855; Medal, 1862; Silver Medal, 1867.

5 SPECIMENS OF WHITE CLOTH, remarkable for purity of colour. Manufactured by *MORO BROTHERS.*
AUSTRIA. *Klagenfurt, Carinthia.* Established : Honourable Mention, 1851; 1st Class Medal, 1855; Medal, 1862; Silver Medal, 1867.

CARPETS.

Carpets.

1 A BORDERED TAPESTRY VELVET CARPET. Manufactured by ... *J. CROSSLEY & SONS.*
HALIFAX. Established : Prize Medal, 1851; Medal of Honour, 1855; Medal, 1862.

2 AN IMITATION SAVONNERIE CARPET. Manufactured by *SALLANDROUZE DE LA MORNAIX & Co.*
FRANCE. *Aubusson, Creuse.* Established : Commissioner for France in 1851; Juror in 1855; Juror in 1867.

SHAWLS.

Shawls.

1. A SHAWL, woven from Indian wool yarn, the finest ever spun. Manufactured by *F. DUCHE & Co.*
PARIS. 1, *Rue des Petits Peres.* Established : Prize Medal, 1851; 1st Class Medal, 1855; Medal, 1862; Silver Medal, 1867.

WORSTED FABRICS.

Worsted Fabrics.

1 SPECIMEN of FANCY FABRIC. Manufactured from yarn dyed alpaca wool *TITUS SALT, SONS, & Co.*
BRADFORD. *Saltaire.* Established : Grand Medal of Honour, 1855.

2 WHITE ALPACA. Exhibited for its fineness and delicacy of fabric. Sold wholesale at 2*s.* a yard; to be had through all retail dealers at an increased price. Manufactured by *TITUS SALT & Co,*

3 A SPECIMEN of DAMASK, of original design. Manufactured by ... ... *AKROYD & SONS.*
HALIFAX. Established : Prize Medal, 1851; Medal of Honour, 1855; Medal, 1862; Gold Medal, 1867.

4 A SPECIMEN OF FANCY REP, showing excellency in make, colour, and finish. Manufactured by ... ... *P. HAAS & SONS.*
VIENNA. Established : Prize Medal, 1851; 1st Class Medal, 1855; Medal, 1862; Gold Medal, 1867.

EDUCATIONAL.

Educational.

1 ATLAS OF PHYSICAL GEOGRAPHY ... ... *ARTARIA & C.*
VIENNA. *Kohlmarkt.* Established : Medal, 1862.

2 ANATOMICAL MODEL, showing the structure of the human frame. Constructed by *L. AUZOUX.*
2, *Rue Antoine Dubois.* Established : Prize Medal, 1851; Grand Medal of Honour, 1855; Medal, 1862; Gold Medal, 1867.

3 SET OF MATHEMATICAL INSTRUMENTS. Manufactured by ... ... *G. BRUER.*
RUSSIA. *St. Petersburgh.* Established : Gold Medal, 1867.

4 TREATISE on method of teaching the Classical Languages ... ... *Prof. C. BRAUN.*
BELGIUM. *Rivelles, Brabant.* Established : Medal, 1862.

5 TREATISE on the method of teaching Music ... ... *Prof. ERMEL.*
FRANCE. : Medal, 1862.

6 BLACK-LEAD PENCILS; manufactured by an improved process ... ... *A. W. FABER.*
BAVARIA. *Stein, near Nuremberg.* Established : Prize Medal, 1851; 1st Class Medal, 1855; Medal 1862; Gold Medal, 1867.

7 PAPER TOYS; consisting of separate pictures of men, animals, carts, trees, &c., painted on stiff cardboard, with a block of wood glued to the foot of each, in order to enable it to stand easily. The position of the figures, &c., can be moved as desired, to form different views, and give scope to the imagination and ingenuity of the child. Manufactured by ... ... *HUTH & HOFFMAN.*
BAVARIA. *Nuremberg.* Established

8 TREATISE on the System of Superficial Muscles of the Human Body ... ... *A. LAMI.*
FRANCE. Established : Medal, 1862.

9 METHODICAL CLASSIFICATION of Botanical Specimens ... ... *P. PARLATORE.*
ITALY. *Royal Natural Museum, Florence.* Medal, 1862.

10 CHEAP GLOBES for the use of Schools ... ... *T. REIMER.*
BERLIN. Established : 2nd Class Medal, 1855; Medal, 1862; Silver Medal, 1867.

11 COLLECTION OF CHEMICAL PRODUCTS illustrative of crystallography ... *Prof. SCACCHI.*
ITALY. *Naples.* : Medal, 1862; Silver Medal, 1867.

12 PLAN OF SCHOOL BUILDINGS; programme and results of instruction at the School of ... ... *SCHNEIDER & Co.*
FRANCE. *Creusot.* Established : Gold Medal, 1867.

13 COLLECTION OF MODELS for the teaching of geometry and stereotomy ... *J. SCHRODER.*
HESSEN. *Polytechnic Establishment, Darmstadt.* Established : Prize Medal, 1851; Medal, 1862; Silver Medal 1867.

GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 18th February 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding*.
His Excellency the Commander-in-Chief, K. C. B., G. C. S. I.
The Hon'ble G. Noble Taylor.
Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey, C. S. I.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
The Hon'ble F. R. Cockerell.

COURT FEES BILL.

The Hon'ble MR. COCKERELL moved that the Report of the Select Committee on the Bill to provide for the better regulation of Court Fees be taken into consideration. He said that the Bill as amended by the Select Committee was published in the official Gazettes immediately after the presentation of this report to the Council, and had been before the public for some weeks.

Having regard also to the extreme inconvenience of any considerable delay in the disposal of a measure of this kind, which must necessarily, so long as it remained in abeyance, disturb and unsettle the entire litigation of the country, he thought they were clearly justified in proceeding now to the final consideration of the matter.

The amendments proposed by the Select Committee comprised several additions and alterations, chiefly directed to the removal of all ambiguity in regard to the proper valuation of suits and the more complete consolidation of the various provisions of the existing law, now scattered over several enactments, relative to Court fees.

The main provisions of the original Bill, namely, the rates of fees prescribed by its schedules, had undergone no material alteration. The contemplated distinction between probates and letters or certificates of administration, which followed the English law on this subject, had been abandoned; and it was now proposed to substitute an uniform two per cent. rate on both classes of instruments, for the rates, varying from two to one and a quarter per cent. on probates, and ranging between three and one and three-quarters per cent. in the case of letters and certificates of administration, propounded by the Bill as introduced. But the rates of fees chargeable on the institution of suits and appeals remained unchanged, save as regarded the maximum limit, which it was thought should be reduced from rupees 5,000 to 3,000.

From the general absence of hostile criticism it was to be inferred that public opinion was in favour of the proposed scale.

In two quarters only had the rates been objected to. In one of these, the objections raised went to the extent of condemning the principle of any special tax or charge upon the administration of justice. Now, he was not going to attempt to defend that principle. It seemed to him quite unnecessary to enter

into any discussion on that point at the present time. They were not considering a proposal to impose any new tax in this direction, or even to increase any existing charge. The present measure was one of absolute concession. It embraced a reduction, to some extent, of the fees hitherto levied in every case. They had also to consider the facts that a tax not substantially different in amount from that prescribed by this Bill had been in operation for upwards of half a century, and that the State could by no means afford at the present juncture to part with the revenue derived from it.

There was one statement, however, put forward amongst the objections just referred to, which appeared to him to misrepresent the facts of the case on such an important point as to call for some notice. It implied that the rates of fees in operation in the Mofussil Courts were much higher than those levied on the original side of the High Courts and in the Presidency Small Cause Courts; and that, consequently, the suitors in the former were thus placed at a disadvantage with the latter. He believed this assumption to be wholly incorrect.

In 1862, shortly after the constitution of the High Courts by the amalgamation of the late Supreme and Sadr Courts, it was proposed to substitute *ad valorem* rates for the fixed fees which had theretofore been in force in the late Supreme Court, in order that there might be an uniform system on both sides of the new Courts; but the project was abandoned in consequence of the Government being advised, on the most competent authority, that the change would most probably be attended by a considerable loss of revenue. And as regarded the fees levied in the Presidency Small Cause Courts, he (MR. COCKERELL) thought he was correct in stating that the charge amounted to two annas per rupee, or twelve and a half per cent. on every suit, which considerably exceeded even the highest percentage obtaining under Act XXVI of 1867.

The other objections urged against the proposed rates rested on a comparison which had been instituted between the scale of fees laid down in Act X of 1862 and that contained in the Bill. For the purpose of this comparison, the amounts had been selected on which the incidence of the rates chargeable under Act X was lightest; and the fees chargeable under the Bill on such amounts had been compared with the fees imposed by Act X, to the manifest disadvantage of the former. The radical objection to the scale of fees which obtained under Act X of 1862 was, as he had before stated, the extreme irregularity of its incidence. For example, under that law, the same fee—that is, one rupee—was charged on a suit for one rupee as on a suit for sixteen rupees; so also an uniform institution-fee was levied on every suit the amount or value of which ranged between rupees sixteen and rupees thirty-two.

Under the Bill, the fee was adjusted in gradual proportion to the amount of the suit; so that, in the case of suits of amount ranging between one rupee and sixteen rupees, the fee varied from six annas to one rupee and eight annas; and in respect of suits for any amount between sixteen and thirty-two rupees, from one rupee and eight annas to two rupees and ten annas.

The selection, therefore, of suits of sixteen rupees and thirty-two rupees' amount or value, on which the incidence of the tax imposed by the former law was lightest, as points of comparison, was obviously a fallacious test of the relative effects of the two scales. If the mean or average rates chargeable under either scale were compared, the charges contemplated by the Bill would be found, in the case of suits of small amount, to be more favourable to the suitor than the fees prescribed by the former law; *e. g.*, on a suit for eight rupees the fee prescribed by Act X of 1862 was one rupee; under the Bill it was only twelve annas. In respect of a suit for rupees twenty-four, the fee formerly was two rupees; when the Bill became law it would be one rupee and fourteen annas.

He would not take up the time of the Council with further illustrations of the relative effects of the two scales. It was sufficient to state that a detailed comparison of the average rates in force previous to 1867 with those of the

Bill would show that, as regarded the great mass of the litigation of this country—*i. e.*, suits the amount or value of which did not exceed one thousand rupees—the latter were not materially in excess of the former, and that a substantial concession was made in regard to claims for amounts under ten rupees.

The most important amongst the additions and alterations proposed by the Select Committee were the provisions relating to the valuation of suits, contained in section 7 of the amended Bill.

An attempt had been made to supply an omission common to all previous enactments, regarding fees leviable on the institution of suits. Hitherto, it had been the practice to provide only for the valuation of the property to which the suit had reference, leaving out of account altogether the various litigated claims to something less than the full interest or title in such property.

In the several descriptions of suits specified in clauses iv, vi and vii of section 7, the litigated matter was not the right to the possession of the property to which the suit related. Such possession was not disputed, and the question at issue involved merely some minor interest; yet, in the absence of any provision of the law applicable to such claims, it was probable that they were very generally valued by the parties instituting them as though they involved the entire interest in the property with which they were connected.

The Bill aimed at providing rules for the valuation of every known class of suits, as far as possible according to the interest actually in dispute in each case, by which the suitor would be relieved from his present liability to a self-imposed excess charge; and the uncertainty and want of uniformity of practice on the part of the Courts in determining the proper valuation of suits of this kind would be avoided.

To remove any doubt as to the intended application of the word "estate," which occurred frequently in the 7th section of the Bill, it had been defined to include every description of land-tenure subject to the payment of revenue to the Government. It was doubted whether, in the absence of this explanation, the term could be properly held to include the ryotwárí tenures in the Madras Presidency. It was thought that the valuation of Inám lands should follow the rule applied to land exempt from payment of Government revenue.

The revenue paid to Government on account of Inám land was a mere quit-rent; the market-value of such land was therefore in inverse ratio to the amount of such payment, *i. e.*, in the proportion in which the rent was less, the greater was the margin of profit to the holder, and the consequent market-value of the land. In such cases the amount of the revenue paid to Government obviously formed no proper criterion as to the true value of the property.

A rather important verbal alteration was proposed in section 8. This section, as originally drawn, followed the provision of the existing law on this subject; but the Committee were strongly of opinion that local investigations for the purpose of valuing a suit should be discouraged as much as possible, as, in effect, they entailed on the parties to the suit all the trouble and expense of an extra suit, merely to determine the question of the amount due to the revenue. They proposed, therefore, to substitute words the effect of which would be to require the Court to determine, in each case, whether such local investigation was necessary or expedient, instead of directing the enquiry to be made as a matter of course on the mere requisition of a party to the suit.

The original Bill contained no effectual provision as to the consequence of the non-payment of the additional fee discovered to be due by the results of the local enquiry as to the market-value of the litigated property. The amended Bill empowered the Court to fix the time within which such additional fee must be paid and to dismiss the suit in default of such payment.

In section 10 an omission of the original Bill and of the existing law had been supplied by the suggested provision for cases in which the amount of the mesne profits claimed was left to be determined in the course of the execution of the decree. It was proposed to apply the same consequence, as in the case just stated, to the non-payment of the additional fee which was found to be due.

In amendment of the existing law, it was proposed to make the decision of the Court in which any suit or appeal was instituted, in regard to the valuation of such suit or appeal, final as between the parties thereto, reserving to the Appellate Court, for the protection of the interests of the revenue, a power of interference of its own motion where the valuation admitted by the lower Court was clearly wrong and had occasioned loss to the revenue. It was thought that the interests of the parties to the cause should in no way be allowed to be affected by the question as to whether the just demands of the revenue had or had not been satisfied, and that the present practice, under which litigation might be protracted on grounds which had no connection with the question on which the parties to such litigation were at issue, was most objectionable, and should be discontinued.

Section 13 was in modification of section 377 of the Code of Civil Procedure. By the latter, on an application for review of judgment presented after ninety days from the date of such judgment, the same fee was levied as if it were a plaint in a suit; whilst an application made within the ninety days was subject only to the fee chargeable on ordinary applications. In many cases, where the delay had occurred through no laches on the part of the applicant, this rule had been found to entail hardship; and the measure of relief provided by this section, under which a refund of the difference between the amount paid and that which would have been payable had the application been presented within the ninety days might be obtained in such cases, was thought to be called for.

The amended Bill provided for the levy of *ad valorem* fees on applications for a review of judgment, in substitution for the fixed fee now chargeable thereon. This enhanced charge was recommended to discourage the practice, which was said to have become prevalent, of seeking to obtain the rehearing of a suit through an application for review of judgment on the most frivolous grounds, by which the time of the Courts was needlessly wasted.

It was proposed, through the provisions of section 14, to guard against the increased fee working harshly, by allowing a refund of the enhanced amount payable under its operation, where the result of the application was the reversal or modification of the previous judgment, on such grounds as amounted to an admission of the Court's error.

To section 18 it was proposed to add some additional exemptions. In England, the duties on probates and letters of administration relating to property of small amount were remitted. It seemed right that a similar exception should be made in this country, and that the limit within which such duties should not be made chargeable should be one thousand rupees.

Having regard to the relations subsisting between the Government and the agriculturists of this country in the matter of irrigation, it was clearly inexpedient to impose a fee which might operate as a restriction to free communication between the people and the officers of Government in regard to the irrigation of their land. The conditions of the ryotwárí settlement in Madras were also considered to call for the exemption, from any fee, of petitions or applications to extend cultivation or relinquish land.

Applications for compensation made under any law relating to the acquisition of property for public purposes were rendered necessary by the acts of the Government, and, consequently, could not justly be subjected to any fee.

The uniform fixed rates of fees chargeable for the service of processes, contemplated by the Bill as introduced, had been abandoned, and it was pro-

posed at present simply to transfer to this Bill, with some slight modification, the provisions of Act XI of 1863, and the Bengal Act V of 1863; the effect of which would be to extend the operation of those provisions to the whole of India and to make process-serving charges payable by means of stamps.

The statistics obtained from the several Local Governments, as to the charges for the service of processes now in force, showed a very striking diversity of practice, and the Committee, though recognizing the soundness of the principle of an uniform rate, were forced to the conclusion that the time for the general adoption of such rate had not yet arrived; that further local enquiry was needed, and a longer notice of the proposed change must be given ere its operation could be safely extended to the whole country.

By section 30 provision was made for compelling the repayment, to the complainant, of the amount of the fee paid by him on the institution of a complaint in the Criminal Court, when such complaint was substantiated and resulted in the conviction of the offender. In the opinion of the Committee where a complaint resulted in the conviction of the accused person, and the complainant was thereby shown to have sustained a *bonâ fide* injury, he was entitled to be re- [illegible] the amount which he had been compelled to pay to obtain the Magistrate's interference in his behalf. The policy of levying any fee in cases of [illegible] by the parties instituting them as though [illegible] applicable to such cases, [illegible] that [illegible] Nevertheless, this kind was strongly impugned in some parts of the country. reduced amount fixed by the Bill, subject to the provision for repayment in certain cases of the pro[illegible]. The fact that this result might be obtained by the operation of the Committee were agreed that it should be retained at the overlooked [illegible]visions of the Criminal Procedure Code (section 44) had not been was pure[illegible]. But, under that provision of the law, the action of the Magistrate plainan[illegible]ly discretionary, whereas, in these cases, it was thought that the complainant matter should recover his disbursement in the prosecution of his charge as a [illegible]of right.

suits; was proposed to reduce the maximum fee leviable on the institution of to r[illegible]nd appeals from rupees five thousand, the amount fixed by the original Bill, the [illegible]pees three thousand. It had been urged in some quarters that, although of return to the principle of a maximum limit conceded a substantial measure of relief, as compared with the unlimited and consequently prohibitory rates t[illegible] the present law, even rupees five thousand was a heavy sum to be paid ere [illegible]e Court could be put in motion in regard to claims of very large amount. The limit under Act X of 1862 was rupees two thousand, and the propriety of recurring to that limit was strongly urged. As a sort of compromise, rupees three thousand had been fixed as the maximum fee in the amended Bill. For his own part he could not say that he concurred as to the propriety or expediency of this conclusion. Its effect was to place all claims, the amount or value of which exceeded rupees 4,05,000, on the same footing, which was inconsistent with the principle of making suits of large amount bear their fair share of taxation.

He had already adverted cursorily to the change proposed in the case of probates and letters of administration. The rates fixed by the Bill as introduced were in general accordance with the provisions of the English law. It was thought, however, that the distinction there made between these two classes of instruments was not only unsupported by, but was altogether opposed to, equitable considerations. The levy of a higher rate of duty upon letters of administration than upon probates, was equivalent to the imposition of a heavier tax upon the property of a person who had died intestate, than was leviable on the property of a person who had left a will; and this, in effect, constituted the infliction of a penalty upon the innocent inheritor of the former class of property for the negligence of his predecessor, although, presumably, such heir had already suffered to some extent through this neglect. On these considerations the Committee rejected the English scale as a model for the adjustment of these duties, and proposed the substitution of an

even rate of two per cent. on the amount of the property affected by the probate or letters or certificates of administration. That rate represented, approximately, the average of the sliding scale projected in the original Bill, and was moreover the same as the present income-tax rate. A tax upon instruments of this description was in fact of the nature of an income-tax, and one moreover of the least objectionable kind.

The third or repealing schedule of the amended Bill had been greatly enlarged, the provisions of the enactments or portions of enactments which it was proposed to repeal being transferred to the Bill, so as to bring the entire law regarding fees leviable in judicial proceedings into one Act. The Bill, with the further amendments which he was about to propose, would effect a thorough consolidation of the law on this subject.

The original Bill provided for the entire repeal of Act XXVI of 1867. That Act exempted, by a special rule, any person who had been enrolled as an advocate of a High Court from the obligation of presenting a written authority empowering him to act in any Court. He stated, as the reason for discontinuing that rule, that such a provision, relating as it did to procedure and constituting in fact a modification of the provisions of the Code of Civil Procedure, was quite out of place in, and foreign to, an enactment on the subject of Court fees. The Committee, whilst entirely recognizing the correctness of that view, held that, although that consideration justified the ommission of such a provision from the Bill, as there was no reason for disallowing the exemption on other grounds, the existing law on this matter should be retained; and that so much of Act XXVI of 1867 as related to this subject should continue in force. The effect of this proposal was to constitute the provision referred to a special enactment for continuing the exemption in favour of the enrolled advocates of any High Court.

He had now explained all the material changes and additions that had been suggested. On the report being taken into consideration, he would proceed to move the adoption of the further amendments of which he had given notice.

The Hon'ble SIR RICHARD TEMPLE said that section 7, in respect to the valuation of land forming the subject of suits, provided that, in permanently settled estates, the value of the land should be assumed at ten times that of the Government revenue; that in estates not permanently settled, the value of the land should be assumed at five times the revenue; and, thirdly, that in estates which were not settled at all, where the ryot did not pay revenue at all, the value should be assumed at fifteen times the nett profits. He thought that the operation of these clauses of section 7 would lead to under-valuation, and sometimes to unjust valuation, of certain classes of estates which existed more or less in every province of India; for there were some estates which, though not exactly Inám, or free from the payment of revenue, nevertheless were subject, either to the payment of a lump-sum in the nature of a quit-rent, or to the payment of rates very much lower than the ordinary rates of revenue. Such estates would, under the Bill, be valued at fifteen times the nett profits. That would be found objectionable. He proposed to remedy it by adding to clause 5, paragraph *(c)*, of this section, the following words:—

"or is otherwise exempt from the ordinary rates of revenue."

That, he believed, would rectify the defect which had been brought to his notice.

The Hon'ble MR. TAYLOR said that what had just been stated by Sir Richard Temple merely confirmed the explanation which Mr. Cockerell had given of the meaning of the word "Inám" in the Madras and Bombay Presidencies: it merely explained in greater detail the meaning of that term. An Inámdár paid a quit-rent, which constituted a certain proportion of the ordinary assessment.

The Hon'ble SIR RICHARD TEMPLE said that, in many parts of India, the signification of the word 'Inám' would be doubtful; in some places it would mean land altogether exempt from the payment of revenue.

The Hon'ble MR. COCKERELL said that it seemed to him that there was some inconvenience in considering amendments of which the Council had had no notice. It struck him that the words employed by the Hon'ble Mover of the amendment were so vague as to convey no definite idea of the description of land to which they were intended to apply.

The term Inám was very generally understood and had an extensive application in the Madras and Bombay Presidencies, but it was by no means clear in his (MR. COCKERELL's) opinion to what class of tenures his hon'ble friend's proposed amendment was intended to apply.

His Excellency THE COMMANDER-IN-CHIEF said that he would bring to the notice of His Excellency the President that this Bill, as now presented to the Council, came before it in a very inconvenient shape. There were several amendments, which involved not only matters of detail of considerable importance, but also matters of principle. The amendment just moved also seemed to present considerable difficulty. Sir Richard Temple attributed great importance to the amendment, and Mr. Cockerell, who was in charge of the Bill, said that the words appeared so vague, that he could not accept it. Under these circumstances, it was almost impossible for the Council to proceed with the consideration of the Bill in its present shape, and it would be very convenient if the Bill and the amendments proposed were referred back to the Select Committee with the view of their presenting a further report.

The Hon'ble SIR RICHARD TEMPLE supported the suggestion of His Excellency the Commander-in-Chief.

The Hon'ble MR. STEPHEN said that, owing to the temporary absence of Sir Richard Temple, he was not appointed a member of the Select Committee, and the Committee had therefore lost the advantage of the valuable suggestions which they would no doubt have received if the Financial Member had been present. It would be convenient that the Bill should be recommitted, and that Sir Richard Temple should be added to the Select Committee.

His Excellency THE PRESIDENT said that he thought that it would further the convenience of the Council if the Bill was recommitted. It would be better that the Select Committee should take the proposed amendments into consideration, and submit a further report for the consideration of the Council.

His Excellency THE COMMANDER-IN-CHIEF then moved that the Bill be referred back to the Select Committee with instructions to submit a further report within a week.

The Motion was put and agreed to.

The Hon'ble MR. STEPHEN moved that the Hon'ble Sir Richard Temple be added to the Select Committee.

The Motion was put and agreed to.

PRISONS BILL.

The Hon'ble MR. STEPHEN introduced the Bill to amend the law relating to prisons in the Panjáb and the Provinces under the immediate administration of the Government of India, and moved that it be referred to a Select Committee with instructions to report in six weeks. He said that he thought that he need not occupy the Council to any extent in introducing this

Bill, but he would state generally what its nature was. The operation of the Bill in the first place was confined to the Panjáb, Oudh, the Central Provinces and British Burma. He thought that, when the matter was referred to a Select Committee, they would probably take into consideration whether or not it might not, with considerable advantage, be made to apply to some of the other Provinces, especially the North-Western Provinces. The occasion on which the Bill was brought in was, that it was found that, in carrying out proper discipline in some of the prisons in the Panjáb, there was considerable difficulty arising from the absence of any law enabling the Lieutenant Governor of the Panjáb to issue rules for the maintenance of discipline, and to provide penalties for their breach. The Bengal Regulation II of 1834, section 7, authorised the Governor General in Council to introduce a system of prison-discipline, but there was no power to prescribe penalties for its infraction, and the Penal Code did not provide for such offences as the abetment, by prison-officers, of violations of prison-rules. Moreover, the power in question clearly did not apply to the Panjáb: there was some doubt as to its application to Oudh and the Central Provinces; and, as regards Burma, it seemed to extend only to the Arakan Division. The difficulties experienced in the Panjáb would apply equally to other Provinces in India, and it would be for the Select Committee to say whether the local extent of the Bill should not be considerably enlarged. The Lieutenant Governor of the North-Western Provinces had expressed an opinion that in his Province no change was required. MR. STEPHEN, however, felt considerable doubt whether this opinion was not founded upon a misapprehension as to the state of the law. With regard to the substance of the Bill he need not at the present moment say much; it was principally taken from the Prison Rules actually in force in different parts of the country, and from the Act of Parliament (28 and 29 Vic., cap. 126) relating to the subject. The Bill consisted of twelve chapters, the provisions of which were not such as to require any statement from him, and he might observe that all of them referred to matters which must necessarily arise in the administration of all Prisons, wherever they might be situated. Local experience would add considerably to the knowledge of the subject, and he hoped that the Committee would obtain full information from the local authorities. The measure was essentially one of detail.

The Motion was put and agreed to.

EMIGRANTS' REGISTRATION FEE BILL.

The Hon'ble MR. CHAPMAN moved that the Bill to enable the Governor General in Council to increase the fees payable under section 31 of Act No. XIII of 1864 (to consolidate and amend the law relating to the Emigration of Native Labourers) be passed.

The Motion was put and agreed to.

NORTHERN INDIA CANALS AND DRAINAGE BILL.

Colonel the Hon'ble R. STRACHEY moved that the Bill to regulate the construction and maintenance of Public Works for Irrigation, Navigation and Drainage be referred to a Select Committee with instructions to report in a month. He said that the proposal to refer the present Bill to a Select Committee, which he was about to make to the Council, implied that they were asked to accept the principle of the measure.

In the present case it was, he thought, the more necessary to give some explanation of the principles that had governed the measure now before the Council, because it, in fact, for the first time proposed to declare and fix in an authoritative manner many very important matters relating to the practice of irrigation in Upper India. These had, till now, been left to be dealt with in a discretionary way, in accordance with certain customs that had grown up and

had been generally recognized as proper, but in many cases not under any legislative sanction.

The first point to which he would refer was the declaration contained in the preamble of the Bill, that the property of the water, &c., in India was vested in the State, but subject to rights acquired by usage or grant. This was the view that had been, he thought he might say universally, accepted by the best authorities on such subjects; and, as Mr. Maine stated, it was in conformity with the custom of Europe in those countries in which irrigation was practised. There could be no question, however, that private rights had in many cases been acquired, and there was nothing in the Bill that tended to question or disturb them, excepting under those circumstances in which private rights must always give way; that was, when the public advantage rendered it necessary to extinguish them. In such a case, of course, it was quite essential that full compensation should be given to any individual who suffered from the deprivation of an established private right in a water-supply, and one portion of the Bill was specially designed to deal with these cases.

The Bill, so far as it related to irrigation-works, proceeded, then, on the presumption that the water appropriated was the exclusive property of the State; it being understood that, when any previous private rights had existed in the water-supply, they had been extinguished, proper compensation having at the same time been given. The canals referred to were consequently only those constructed by the Government at the public expense, and the water-courses were only those fed by such canals; that was, with water which was exclusively the property of the State.

Before proceeding further to comment on the details of the measure, it would be convenient if he (COLONEL STRACHEY) said a few words as to the general position which the Government accepted, in carrying out irrigation-works, in relation both to the general community of tax-payers and the particular community for the special benefit of which the works were constructed. The water, as already said, had become the exclusive property of the State. But, in the nature of the case, this property could only be utilized in one way, and in a special locality. It was apparent, therefore, that the State could only act in the management of the property as a trustee for the community residing in this locality, and that this community in fact possessed, in its collective form, the right to enjoy whatever advantages could be obtained from the water. This indicated the first obligation on the Government in relation to canal-management, that the water should be, as far as was practicable, so distributed as to give the greatest general benefit to the agricultural population in the districts to which it could be taken. This distribution, however, should be so regulated as to produce on the whole the best results in the aggregate; and it might quite possibly be necessary to limit the sub-division of the water, or the extension of its use, so as to avoid waste, which, otherwise, must arise to an objectionable amount. Further, it was to all persons who might benefit by the use of the land that could be irrigated, that attention must be paid, whether they were proprietors or only occupiers.

Next, it appeared that the Government undertook the works either with funds supplied from the general revenues of the country, or with money borrowed on the general credit of the country. For the use of these funds, it was clear that the particular part of the community that benefited by the works should make a suitable contribution, in the shape of interest and profit, to the general revenues. The precise amount of this contribution it would not be easy to define, but it should apparently be sufficient to cover the direct outlay of the State, in connexion with any loan specially entered into to admit of the works being carried out, and should not be in excess of the sum which could be paid without placing the locality benefited by the works in a worse position, as regarded the aggregate demands

made upon it by the State, than that in which other districts were placed. The State might properly assist any section of the community in obtaining special advantages, subject to the condition that the ultimate burdens on all classes of the tax-paying community might as nearly as possible be equalized.

He (COLONEL STRACHEY) was aware that this did not give a very valuable practical criterion of the limits that should be placed to the charges made by the State for the use of irrigation-works constructed at the public cost and risk. But it at all events indicated that the idea of working such undertakings so as to give the greatest possible mercantile profit, was not to be accepted without many large reservations. On the whole, however, there was no great risk of the Government ever attempting to strain its powers of extracting too large profits from irrigation-works. Moderate charges, with a wide diffusion of the benefits of irrigation, would certainly give the results which would be most satisfactory to the Government and the people, and be most conducive to such financial success as the conditions of the undertakings required.

He would now pass on to consider some of the principal provisions of the Bill, on which comments seemed to be desirable.

The first point that might be noticed was the system under which the powers given by the Bill were to be exercised. On this, there had been some misapprehension, arising, no doubt, from the assumption that, in many cases, these powers would be vested in Engineers who had not the sort of qualification that fitted them for dealing with questions requiring a judicial or quasi-judicial method of treatment. The reply to such an objection was simple. There was no part of the law of this country the administration of which was not left to the officers to be selected for the purpose by the Executive Government. The power and responsibility of appointing proper officers was left to the Government, and there was no greater reason for fettering this responsibility in the case with which the Council was now concerned than in any other. The powers under this Bill, if it became law, would be entrusted only to such persons as the Local Government thought qualified to exercise them; and it would be an obvious duty of those Governments to take all needful precautions in making the selection. It would naturally become a part of a properly regulated system of canal-management, as of the administration of civil or criminal justice, to prescribe certain qualifications as essential before officers were vested with certain powers. The exercise of all powers under this Bill would be subject to suitable control by superior authority; and whatever precautions were deemed necessary to secure regularity and prevent oppressive action of individuals might, and no doubt would, be applied. So far as the Bill extended the criminal law, the rules of criminal procedure would still apply to the administration of such law, and in this respect the Bill would not in any way alter or diminish the checks against the improper exercise of authority.

The objection taken in some quarters to giving canal engineers any administrative functions or powers was one to which he (COLONEL STRACHEY) need not refer at much length.

It was natural that there should be differences of opinion on the subject of canal-administration, and this was one of the moot points. The fact, however, remained, that the experience of the past thirty or forty years had developed the existing system, which the responsible Executive Governments were not at all disposed to set aside in a summary way. The tendency of late years had been to make the canal-management more, and not less, separate from that of the ordinary land-revenues, and it seemed to him that this was a necessary consequence of improved administration, which, in all branches of the public service, tended to develop more completely the distribution of labour and the formation of special services. He had little doubt that the remedy for the evils, which to some extent, no doubt, were real, seen by the opponents of the present system of canal-administration, was to be found in strengthening and improving

the existing administration, and not in destroying it and handing over the duties to the district officers. Personally, he (COLONEL STRACHEY) was inclined to think that a greater separation of the engineering and fiscal and administrative duties of the canal-administration would be beneficial, and would hereafter be adopted; but it would be quite impossible to introduce any sudden changes of system without very great inconvenience. So far as the present Bill was concerned, it sufficed to say that it did not enter upon questions of this sort at all. It merely contemplated the necessity for certain things being done, and gave powers for their being done by the proper officers, leaving it entirely to the Executive Government to determine who those officers should be.

The second chapter of the Bill dealt with the procedure under which private rights in a water-supply might be taken possession of. The whole of the proceedings were to be taken by the Collector, an appeal being allowed to the higher Revenue-authorities, and the compensation would be given partly by a revision of the revenue of land deprived of the means of irrigation, to be made by the Collector in the ordinary manner, and partly by a money-payment, all money-compensation being settled in the way in which compensation was given when land was taken for public purposes. The proposed provisions had been generally assented to, the objections being confined to matters of detail.

The third chapter of the Bill dealt with the administrative powers of Canal-officers. In respect to these, the differences of opinion were also almost entirely confined to points of detail. On one subject only of any special importance had objections been raised, and this was the power of stopping the admission of water into water-courses. There had, he (COLONEL STRACHEY) thought, been some misconception as to the precise scope of the provisions of the Bill that referred to this. All that the Bill declared was that, in certain cases, the Canal-officer might stop the supply of water in water-courses without giving rise to any claim for reduction of the charges that would otherwise have been made. It was, as it seemed to him, essential for the canal-administration to have the most complete discretion in dealing with the water-supply in Government canals, as was deemed most suitable, whether for the proper distribution of the water, or to secure the works against accident. This must be an implied condition when water was supplied to any individual, and it was specially provided for in a subsequent part of the Bill (section 66), in which it was declared that no claim for compensation would be admitted against the Government for what might be termed unavoidable stoppages of the water; and that all that would be done in such cases was to remit the water-rate that would otherwise have been chargeable.

Section 43, which authorized the stoppage of water in case of certain breaches of discipline as they might be termed, waste of water, and refusal to allow water-courses to be dealt with in conformity with the law, merely said that, in those cases, the claims of Government for payment of water-rates might be enforced as though the stoppage had not taken place. It was not intended to relinquish in any way the full power of control over the water, which, as he had said, must be kept intact; but merely to declare what would be the result of a stoppage of water made under certain circumstances. The result of this section (43), which gave power to stop the water in certain cases, and of the other section (66), which declared that no compensation should be claimable in certain other cases, would be to leave it open to a person who was deprived of his water, otherwise than under those sections, to claim compensation for any injury he received by such stoppage. This appeared to give quite a sufficient safeguard against the arbitrary exercise of a power which it was certainly necessary to retain, and which would remain even if section 43 were removed from the Bill.

A desire had been expressed by the Government of the North-Western Provinces that power should be given to the Government to obtain possession of water-courses supplied from Government canals which are the property of private persons, when it is considered desirable for the general advantages of

the irrigating community that this should be done. The experience of the canals in those provinces had shown that such a power might be necessary. It might happen that a water-course was constructed by a person who had only a temporary interest in the land which it was intended to supply, or that such person had parted with his interest in the land, and thus only kept the water-course as a middleman between the Government which supplied the water and the cultivator who used it. This state of things was inconvenient in many ways. The remedy that was proposed was to extend the power given under the Bill, as it now stands, for taking land for the construction of new private water-courses—a power evidently necessary and proper—so as to make it include the taking of an existing water-course. In such a case compensation would, of course, have to be given to the former possessor of the water-course at the expense of the person to whom the water-course was transferred. This modification of the Bill would be submitted for the consideration of the Committee.

The next chapter of the Bill, the fourth, was that which had led to the most discussion, and which had a special interest to the general community, as it declared the manner in which payment was to be made for the use of canal-water. There were two important alterations of the existing practice proposed in this chapter, to which it would be right that he should direct the special attention of the Council.

The system of charging for canal-water, at the present time in force in the Government canals of Upper India, was entirely one of voluntary sale. Certain acreage rates were fixed for the ordinary crops raised, which a cultivator had to pay if he used the water, it being left entirely optional whether he did this or not. The Canal-officer only dealt with the occupier of the land, and he alone was responsible for the payment of the water-rate.

The result of this system, combined with the fact that the water-rates had been fixed at a very low rate, was, that the rents of canal-irrigated land were found to have risen considerably above those of unirrigated lands, showing that, in truth, the proprietor had, to an important extent, benefited by the increased production due to the irrigation. Speaking in general terms, it might be said that the average water-rate charged to the cultivator by the Canal Department being about two rupees per acre, the rents, after meeting this charge, had risen about two rupees per acre. This advantage was, of course, obtained by the owner of irrigated land altogether in consequence of the outlay of the State funds on the canals. In some cases the owner would, no doubt, have assisted in the construction of the water-courses which brought the water from the Government distributing channels to the land. But this was not always the case, and, anyhow, the largest part of the increase of the rents of irrigated land might be safely said to be an increment not due to any outlay or exertion on the part of the owner, but to the application of Government capital to the construction of the canals.

Under the present system, the owner was left in possession of the whole of this increase of his rents until a revision of the land-revenue took place, if, indeed, it was subject to revision; then, the Government, under the ordinary revenue-law, took a share of the rents, and thus indirectly took a part of the advantage due to the irrigation.

The first change in this system which the Bill contemplated was, that the Government would be authorized to charge directly a water-rate, not only on the occupier of irrigated land, but also on the owner of it. The Government would do this in its position of canal-proprietor, which it was intended hereafter to distinguish clearly from the position in virtue of which it shared in the rents of land in the form of land-revenue. A little reflection would, he (COLONEL STRACHEY) thought, show that there was exactly the same justification for the Government charging a water-rate on the owner of land, as there was for charging it on the occupier. He who benefited should pay. If both tenant and landlord benefited, both should pay.

The propriety of some such general plan as this was admitted by all the authorities that were consulted, and, in the revision of the land-revenue which was now going on in the Panjáb, a system had been actually adopted on the recommendation of Mr. Prinsep, which was very little different from what he had just explained. A somewhat different plan, leading, however, to very similar results, had been suggested some years ago by Sir William Muir. Where difference of opinion had arisen, it was entirely in respect to the manner of dealing with what he had spoken of as the landlord's water-rate in relation to the land-revenue, which, under the existing system, had become to some extent confounded; the distinction between the position of the Government as canal-owner, and as sharer in the rents of the land, not having been properly kept in view, under the practice that had arisen in the Upper Provinces, in making charges for canal-water.

The object of the Bill had in this respect been to provide that a canal water-rate should be assessed on the owner of irrigated land at a fairly moderate amount, in such a manner as to avoid all interference with the practice under which the land-revenue was now assessed and realized, so that the land-revenue should continue to be regulated in accordance with existing custom. The necessity for providing for the case of lands on which the land-revenue assessment now virtually included what would be a landlord's water-rate, would require attention, but there was nothing to indicate that the intention he had above stated might not be carried out with perfect facility.

Before passing on from this part of the subject, he (COLONEL STRACHEY) would explain that it was no doubt true that the Government could secure all the return it could properly desire to obtain from its irrigation-canals, by a single water-rate charged either on the occupier alone, or the owner of the land alone. But there were great practical objections to either of these courses. *First*, the charge was now virtually divided, and the system under which it was so divided had continued for many years, and had grown up and become the established custom of the irrigated districts of Upper India. *Second*, if the whole charge were placed on the owner of the land, and the entire responsibility of payment rested on him, it would necessarily follow that he must have a control over the water and its distribution. This would involve a power of interference with the cultivator in the crops grown by him, for the nature of the crop would depend on the supply of water. Such an interference was clearly objectionable, to say the least of it; and, in the case of tenants having occupancy-rights, it could not be tolerated. *Third*, if the whole charge were placed on the occupier, it would force the party least able to do so to advance the whole sum payable to the Government for the water-rates, and the occupier of the land would commonly be in a position in which he would not be able to pass on to the owner of the land the full and proper proportion of the charge which the owner should in equity bear.

On the whole, in this, as in many other matters of administrative practice, the safest and best course to follow was to work on the existing system as far as practicable, introducing such modifications as were necessary to remove defects as they arose. The Bill in these respects was permissive, and left a full power of selection to the Executive Government, among several plans of charging for the water, that were all equitable and might be found suitable, one in one place and one in another.

He (COLONEL STRACHEY) should not omit to notice that the existing system of charging for irrigation in the North-Western Provinces and the Panjáb virtually gave the advantages of irrigation to the proprietors of estates on which the land-revenue was fixed permanently, or in which the land-revenue was alienated, without any charge. In these cases the power of adding to the land-revenue on the revision of the settlement could not operate, and this class of proprietors might often be placed in the position of having their rents doubled or still further increased, without any corresponding contribution on their parts, by the results of works for which the general body of tax-payers had paid originally, and for the maintenance of which they continued to pay year by year. It was manifestly monstrous that the result of a permanent settlement, or of an alienation of the land-revenue of an estate, should indirectly be that the proprietor should receive, at the entire expense of the general body of tax-payers, the great advantages of irrigation. The Bill, as framed, would give a complete remedy for this anomaly.

The second important change which the Bill proposed was to permit of a compulsory rating of land which was irrigable from a canal, but not irrigated, if, after the lapse of a certain period, the nett income was not sufficient to cover the charge for interest on the capital expended on the works.

The object of this part of the Bill was evident, and all that he need say on the subject was to explain more fully the considerations which had appeared to justify the proposal and to meet the objections that had been made to it.

The events of the last few months would, he should imagine, have satisfied every one in the Council that the greatest caution would be necessary in carrying out the extensive systems of public works on which the Government had recently embarked. The financial consequences depending on the expenditure of the very large sums of borrowed money that would be applied to the irrigation-works and railways which the Government was about to undertake, were extremely serious, and financial disaster and collapse of a very alarming character might readily follow an inconsiderate line of action in such operations. The necessity for giving attention to these financial considerations could not be too strongly insisted on.

The character of the public administration in India tended, he ventured to think, to exalt unduly administrative requirements at the expense of financial possibilities. It was the natural, and almost the necessary, result of a Government like that of the British in India, to be oppressed, if he might use the word, with a sense of the obligation to carry out moral and material improvements, and it was to this really healthy tendency that the excellence of our rule—for it was in all essentials excellent—was to be attributed. But the great body of administrative officers was not concerned in any important degree with the duty of finding the means for meeting the necessary cost of the measures they proposed; nor was there, in the form of our administration, any corrective or compensating check to this. The great body of the tax-payers was not able to influence in any way the financial arrangements of the Government. But more than this, there was hardly any real or effectual criticism brought to bear on those arrangements from without, and the financial administration had been left to contend with a pressure for supplying the means of improvement which it had too often found difficult to resist, though the consequences should be serious ultimate embarrassment.

Perhaps he (COLONEL STRACHEY) might feel rather more than others the weight of such a responsibility as that of which he had spoken. He had for many years past advocated the policy of extending, within the bounds of prudence, the means of irrigation to all parts of India where there was danger from drought, and there were very few parts of the country to which this description would not apply. He had strongly supported the proposal that the needful funds for the construction of these works should be obtained by borrowing, and he had affirmed that, with due care, there need be no cause for anxiety as to the financial consequences of following this course. He felt, therefore, that, so far as his own voice had had any influence in bringing about the acceptance of the policy that he had advocated, he specially shared in the responsibility that rested on the administration of the Irrigation Department, that the great operations which they had in hand should be carried out to completion without detriment to the credit of the Government. It was in this sense that he personally claimed attention to the important aspect of the question of the extension of irrigation to which he had just been alluding, and it was in this

sense that the Government of India had deemed it necessary to take special precautions to provide against possible future difficulties arising from the obligations it accepted in applying these very large sums to the protection and improvement of the country by means of irrigation-works.

If the outlay on the works to which he had referred on a former occasion, as now contemplated in the Panjáb, North-Western Provinces and Oudh, were completed in eight or ten years, the Government would, at the end of that period, be liable to a yearly charge for interest of not less than £600,000, and a yearly charge of at least equal amount for maintenance and management; in all, nearly one and a quarter millions sterling. And this, it must be remembered, represented the liabilities on a part only of the undertakings on which the Government had embarked. Very large works were in progress in Bengal, and very large projects had been prepared, and only awaited a final removal of financial doubts to admit of their immediate commencement. In Bombay the position was the same, and Madras also would, without doubt, add to the drain in an important degree. He need not attempt to estimate in precise figures the full extent of the whole of the liabilities which were thus being permitted to arise, but it was certain that they would amount to an annual charge of several millions sterling.

The Goverment of India had accepted the responsibility of carrying out to its legitimate end the policy of providing this country with the best, nay the only, security that could be obtained against the recurrence of those terrific calamities in the form of general famine, produced by general drought. But in doing this it was bound so to take its measures as to prevent the contemplated benefits turning out causes of injury by reason of financial disorder arising from them.

In thus dwelling on the necessity for caution in prosecuting these works, he would distinctly guard himself against being understood to suggest that there was reason to think that they were likely to prove financially unsuccessful. He had no such fear. But as a prudent banker required certain forms to be complied with, and certain securities to be given, in dealing with his most trusted customer, and as, in the great majority of cases, such forms and securities might not be found to have been really important causes of the final satisfactory settlement of accounts; so the State, in entering on great financial operations, would do well to satisfy the community from which it derived the funds to be laid out, that there was in fact a substantial source from which the liabilities of the State in respect to its loans could without doubt be made good, however firm its own convictions might be of the prudence of its investments.

When considering the probable consequences of the works they were now about to undertake, it was proper to expect that the same general results would ensue that had been shown by actual experience to follow the prosecution of like works in past time. The main feature in the financial working of these undertakings had always been that a certain length of time had been required to develop the irrigation to an extent which made it properly remunerative. As to the end, there was no cause for anxiety; but an intermediate period would almost certainly occur, in which a heavy charge would have to be met from the general resources of the State on account of any new works. It was hoped that, under the improved system of management which they might now hope to secure, and in the light of the strict financial returns which would be an essential part of any satisfactory system, the financial operation of the works would receive closer attention than before, and causes of delay in the extension of the irrigation, or of failure in realizing a proper income, which were removable, might be ascertained and removed. But, after all possible precautions were taken, it could not be at all certainly hoped that a serious charge might not fall on the revenues in consequence of the new works, and it was necessary to consider thoroughly how such charges, if they arose, were to be dealt with.

It was impossible to overrate the importance to the Government of maintaining its credit on an indisputable footing, when it entered on the course of borrowing which was necessarily involved in the operations which it had been recently determined to carry out with a view to the extension of irrigation-works and railways in India. The power of the Government to continue in the course of improvement on which it had embarked, was directly and essentially dependent on the solidity of its credit. If money could not be got cheap, the Government must soon check its operations. Everything which depressed the credit of the Government acted directly as an obstruction to progress; everything that raised its credit facilitated progress. The Government considered that, among the methods by which its credit might be sustained, a very important one was to place a direct liability on those interests which benefited by irrigation-works, to provide any sum which might, after a reasonable period had elapsed, be found to be required to supply the funds necessary to discharge the interest on the capital by means of which the works were carried out, if not to pay off the capital-debt itself. The precise measures by which this end was to be attained would of course require careful consideration, and the proposals that had been made in the present Bill were designed to give the Executive Government the powers which it might be necessary to exercise to secure the object that had just been explained.

The first remark that suggested itself in connection with this discussion—and it was a very obvious one—was that, if the Government carried out works such as these with borrowed money, the burden that might arise must be borne somehow. The real question at issue, therefore, was, should this burden be left to fall on the whole community, and should the form of its incidence be left to be determined, from time to time, as the financial circumstances of the day required, or should it be placed specifically on that section of the community in whose behalf the works were constructed, in a shape now to be settled once for all? Should we, in short, postpone, till the necessity for action arose, all consideration of the means which we should take for meeting the obligations that were incurred, or should we now assign a specific security equitably adjusted?

The Government of India came to the conclusion that the last was, without doubt, the proper course to follow, if it were possible; and the general plan that was proposed in the Bill would, it was believed, give a satisfactory solution of the problem, when it was properly guarded and explained.

It was always a somewhat dangerous thing to argue from analogies which were necessarily more or less incomplete. In the present case, when we sought an analogy in English practice, we were met by the wide difference of the conditions under which public works for the general improvement of a district were undertaken there and in India. The common argument, that engagements entered into with the consent of the majority of the class interested should be held to bind the minority, could have no operation in India in relation to works such as we now were speaking of. The consent of the persons interested could not in reality be obtained in a form that would give it the slightest real value.

On the other hand, the mere fact that a given numerical majority of the persons for whose benefit works were undertaken had not specifically consented to their execution, could not at all affect the real equity of any arrangement under which such works might be paid for. So long as the essential considerations were respected, which would have guided an intelligent community thoroughly understanding its own interests and able to protect them, the circumstance that the State had acted authoritatively in behalf of a backward community could not make unjust that which otherwise would have been just. The Government in this country had extraordinary responsibilities placed upon it, arising from its extraordinary relation to the people of the country. Very frequently it was forced to act in behalf of the people, or of a section of the

people, guiding itself as best it might, by considerations of what was due to interests which the people themselves appreciated very imperfectly, or perhaps not at all.

From such considerations, he (COLONEL STRACHEY) concluded that, if the Government took all those precautions that should and would be taken by an advanced community acting in its own behalf, it might, circumstanced as the British Government in India was, without objection, regulate the management of works of public improvement in a manner that it was reasonable to suppose might have been agreed to by such an advanced community. And, hence, he concluded that the principle of establishing a local financial responsibility for works which were in their nature exclusively of local interest and value, was perfectly equitable in India as elsewhere.

In proceeding to apply this principle, the main point to attend to was that the burden which was to be imposed should only fall on those who really could benefit by the works. When, therefore, it was proposed that all lands irrigable from a canal should be liable to pay a rate towards the expenses of such a work, it should be seen that the lands were those which could, in fact, receive substantial benefit, and not those which might perhaps be benefited. It would be easy to guard the power proposed to be taken under the Bill so as to secure this object completely, and it would be his duty to propose to the Committee, if his present motion was carried, such amendments and additions to the clauses as they now stood in the Bill as would effect this in an unmistakable way. He might add that the first intention of the section was what he had stated; but it had been thought that the needful definition of the lands to be charged as irrigable might be left to the Executive Government.

It would further be for consideration whether it might not be desirable to prescribe some form of preliminary enquiry by which the Executive Government might satisfy itself, in a special manner, that all those measures had been taken by the canal-administration, for facilitating the extension of the usefulness of a canal, which should have been taken before recourse was had to a general and compulsory rate on lands irrigable but not irrigated. He might add that the Government contemplated giving additional facilities for the execution of agricultural improvements, by means of what were commonly known in India as tuccavy advances, and one of the classes of work to which such advances might most properly be applied would be the minor water-courses requisite for the introduction of irrigation.

Another point which would be suggested to the Committee for consideration was, whether it might not be expedient, in the event of a compulsory rate being charged on account of any new irrigation-work, to declare that a certain fixed maximum rate of profit should thereafter be prescribed, beyond which the Government charge for that work should not go; so that, if the locality benefited by the works was held to give a practical guarantee for the financial safety of the operations involved, it should, on the other hand, be secured against any charges in excess of what was necessary to cover all obligatory expenditure for maintenance and interest. As it might be argued that, if no guarantee was given against loss, no pledge should be given against raising the charges to any amount that the real value of the water would justify; so it might be said that, if the general tax-paying community were protected from all loss, they should be ready to waive their claims to all extraordinary profits, and the charges should be fixed so as just to cover the actual outlay, including a fair rate of interest on capital, and no more.

The sole intention of the Government was to place the future of these most important works on a thoroughly satisfactory footing, both as regards the interests of the agricultural community for which they were primarily designed, and the general financial interests of the State, which could not be endangered or injured without immediately affecting injuriously the interests of all classes.

The Government would hope that a satisfactory conclusion might be arrived at on the various points which arose in relation to this proposal, and that the objections that had been made to it might be removed by the consideration it would receive from the Committee.

The fifth chapter of the Bill, regarding navigation, called for no special remark.

The chapter which followed, on Drainage, was new. Its provisions were moulded on the same general principles that had been adopted in the preceding parts of the Bill relating to irrigation-works. Compensation would be given when any operation was undertaken for improving the drainage of any district, which involved the diminution of any advantage which had been enjoyed by any one for a period of twelve years, which had been generally agreed to as a suitable term to establish a right that should be respected. It might be said, generally, that all interruptions of the natural drainage of the country were made to the detriment of the community at large, and that any right to maintain such an interruption should not be too easily recognized. Where the public health or advantage required the drainage of land, it appeared to be no more than reasonable that the proprietors of the land should be primarily held responsible for removing the evils, whatever they were. A limit of charge was proposed to be fixed by the Bill, so as to prevent undue burdens being placed on the land for these purposes. Also, a proviso was made that the removal of artificial obstructions to natural drainage should be made at the cost of the persons who caused such obstructions. This met objections that had been made, that the Government should not be able to charge upon landholders the cost of drainage-works, the necessity for which had been caused by the neglect of the Government itself. On such a point there could be no difference of opinion.

The chapter relating to obtaining labour for canal and drainage-works had been generally accepted as suitable and sufficient. It enacted nearly what was the existing practice in the Panjáb. Under its provisions, an obligation was placed on all landholders to supply labourers according to a certain scale to be fixed by the Collector, and on all labourers to give their labour, when required so to do, in accordance with certain rules to be made by the Local Government, payment being made at the full rates in force in the locality. If these obligations were not complied with, the persons concerned might be fined. There was no power given of direct coercion.

The necessity and equity of provisions such as these seemed to him quite beyond dispute. Good government did not consist in breaking down human society into the individual elements of which it was composed, and removing from all men all obligations that might interfere with their personal advantages. A man, whether he were a labourer or a landholder, was a member of a community which could only satisfactorily exist by the mutual co-operation of all its members; and when an agricultural community had become dependent on works of irrigation or drainage or embankments for its very existence, the necessity for providing for the immediate carrying out of works of a certain class in connexion with the main canals or embankments was one which was absolutely paramount.

The eighth chapter only called for notice as containing provisions by which the jurisdiction of the ordinary courts was barred in respect of matters the cognizance of which was specially provided for under the Bill. These matters might be classed as questions relating to the supply of water, the use of canals and the charges of various sorts made by canal-officers, the use of water-courses, and claims for remissions of charges, or for compensation in the cases which were specifically described in the Bill. In all cases provision was made for appeals, and the reserved matters referred to questions of an administrative nature in relation to the canal-water which was exclusively the property of the State, or to those which were so related to the revenue-administration of the canals or the land as to make it desirable that

they should be dealt with by the special Revenue Courts or officers. In this, the analogy of other branches of the revenue-administration had been followed, and he might, he believed, add that the experience of European countries where irrigation was largely practised—Spain and Italy—showed that the propriety of maintaining special tribunals for the cognizance of questions relating to the irrigation of land had been universally recognized.

His Excellency THE COMMANDER-IN-CHIEF said that it was now many years, perhaps indeed more than he cared to count, since, as a member of Government on the other side of India, he was one of what might be called the official minority which pressed on the Government of India and on the Secretary of State the necessity of constructing reproductive works by recourse to other means than those presented by the ordinary resources of the country.

The struggle was a long one, but it was at length pressed to a successful conclusion. Finally the argument prevailed by which the notion was borne home to the Government in this country, to the Council at home, and to the public at large, that for this purpose of reproductive works in India we must lean on the public credit. But while the minority impressed the value of this policy till at length it came to be triumphant in all quarters, it was not forgotten by them that the public credit would suffer, as so ably explained by his hon'ble friend the mover of the Bill, if means were not taken carefully at the same time to insure financial safety; in short, to extinguish the loans by means of which the reproductive works were to be constructed. Some of the clauses in the Bill before the Council had been designed for such a purpose. This he (SIR W. MANSFIELD) saw with great pleasure. It was evident that, according to the provisions set out for their consideration, Local Governments and Administrations would be required to consider well the necessities of their provinces and districts, with a view to the responsibility imposed on the latter for the expenditure on account of the improvements and works by which they were to profit.

It was but too true that there was a sort of feeling among certain classes of the public, this including not only the ryots and the petty landholders, but even some of our own officers in responsible situations, that there was a kind of bottomless purse, into which all were free to dip their hands at pleasure for local objects, without any local responsibility of reimbursement, this unlimited treasury being what was called the Government.

We could understand the ryot or the petty landholder having this notion of the Sarkár; but it was difficult to comprehend how responsible officers charged with the care of administration, who were aware of the almost infinite demands on the Government, should fall into such errors of reasoning.

Well, this matter seemed to be fairly set right by certain clauses in the Bill. Some alteration in the wording, some modifications, might be required; but the principle according to which these works must be carried out henceforth was described in a manner admitting of no mistake in future.

It could not be too clearly declared that the provinces, the districts, the populations which benefited by the reproductive works must be responsible for the expenditure incurred on account of them, and that this must not be thrown on the country at large or the system of general taxation.

He (SIR W. MANSFIELD) congratulated His Excellency very heartily on the progress made by the policy of reproductive works in India,—a policy which, more than anything else, would tend to great development and prosperity. It was to him a matter of real satisfaction that, at the close of his career in India, he saw that policy triumphant for which in former times he had struggled, and that he was permitted to take a share in affording completeness to it by voting for the measure now submitted to the consideration of the Council.

Major General the Hon'ble SIR HENRY DURAND said that, when permission was asked to bring in this Bill, he adverted briefly to the fact that they had not before them the opinions of the Local Governments upon it, and he would have preferred that the Council should not have entertained the Bill until after those opinions had been laid before it. The Council had since obtained the views of the Local Governments, and he must say that some of them were very hostile to a particular clause of the Bill, which had been made the subject of discussion. He referred to section 56. We had some of the leading men, amongst others Sir William Muir, giving their opinions on that section. Sir William Muir said:—

"*Section* 56 *et seq.*—I earnestly dissent from these sections. The imposition of a rate on lands that might be held open to the benefits of canal-irrigation, but which do not actually share in them, is based on no principle which I can recognize as just and equitable, or (even if practicable) as expedient. If a canal will not prove remunerative by the assessment of those who directly profit thereby, it should not be undertaken at all. If Government makes a mistake, I fail to perceive why third parties, having no special concern or responsibility in the matter, should, any more than their neighbours, be subjected to a cess in order to make good the loss. The demand would create so much discontent, and would be so evidently inequitable, that, even if legalized, I much doubt whether it would ever be put in force: and its effect, if any, would probably be to make the canal advisers of Government less careful in sifting the financial prospects of their designs, because they would have, in the back-ground, the fallacious guarantee of an eventual rating on all the area which they might hold to be open to irrigation from their works."

We had others expressing equally strong opinions hostile to this particular section. The Board of Revenue, composed of able men of the North-Western Provinces, said regarding it:—

"But section 56 is open to very grave objections. It compels the owners of lands adjacent to, but actually deriving no benefit from, a canal to pay water-rate on such land, in order to bring up the proceeds of the water-rate to seven per cent. on the capital expended on the canal, and charges for maintenance, management and working not properly debitable to the revenue-account of the canal. It is notorious that the existing canals run through tracts where they are not wanted.

"Before the canal was made, the land now adjacent to the canal was easily and cheaply irrigated from *kacha* wells, and the advent of the canal has been anything but a boon. The proprietor of such land does not derive any benefit from the neighbourhood of the canal, any more than his neighbour whose land is not irrigable from the canal. Yet he is to be made to pay, when the other is exempted. The canal may have been constructed at an extravagant outlay. It may have failed to yield a profit to Government from mismanagement, or the entertainment of too expensive a supervising establishment. For all this the proprietor, who is in no way responsible for such results, and who derives no benefit from the canal, is *fined*, for the payment would be simply a fine. The Canal Department must look to economy in construction, management and maintenance, and to a judiciously adjusted scale of water-rates, and careful administration, to secure a fair profit to Government. We contend that it is most unjust to make the agriculturist pay towards the expenses of a canal from which he positively derives no benefit. The mere fact of his land being irrigable from the canal is immaterial, where it is irrigable by other existing means. If it is not so irrigable, he will irrigate from the canal, especially where his land is close to the canal.

"We think that section 56 should be struck out of the Bill, and with it sections 57 to 60."

There were others, again, equally hostile to it; but he (SIR HENRY DURAND) would not take up the time of the Council by reading their opinions, though some of them were very ably and forcibly expressed. We had also the views of the Panjáb Government, which at one time were extremely adverse to the section; and the Lieutenant Governor of the Panjáb, though he had himself modified his opinion to the following extent, now sent the opinion of the Financial Commissioner, which was extremely opposed to sections 56 to 62 inclusive:—

"The Officiating Financial Commissioner further objects to the provisions of sections 56 to 62, regarding compulsory irrigation-rates: the Lieutenant Governor formerly objected to these provisions; but he has recently, in a letter addressed to the Supreme Government, in the Irrigation Department, withdrawn his opposition, with reference to a proposed modification of the Bill, by which it is ruled the amount leviable from those who do not use canal-water shall never exceed half the full water-rates. His Honour is fully aware of the great advantage which would result from all irrigable lands taking water, but he desires me to state that the adoption of these compulsory provisions renders it all the more necessary, in his opinion, for the Government to be chary of extending canals to tracts largely irrigated from wells."

We had, again, the views of the Chief Commissioner of Oudh, who expressed an opinion as hostile to this particular section of the Bill as did the Financial Commissioner of the Panjáb. He said—

"In an abstract point of view, and apart from the complications of particular provinces, the Chief Commissioner can see no reason for the gratuitous sacrifice of revenue involved in the concession to the proprietor of 'a right to a large share of the increased profits due to the introduction of irrigation by expenditure of public money.' But if it be the pleasure of the Government to make this concession, then the Chief Commissioner thinks it a good reason for adjusting the canal-rates so as to prevent the deficiency which it is proposed to supply by the taxation of irrigable lands. Admitting the necessity for obtaining seven per cent. profit on the outlay on canals, the Chief Commissioner has as yet had no data before him showing that, if the canal-rates are fully assessed, the required amount of profit cannot be raised. The Chief Commissioner would cite the late revision of rates for the Bárí Doáb Canal, as exhibiting the considerations indispensable to the full realization of the revenue due from canals. There is no doubt about a full rate being the form of taxation to which the cultivators of Upper India will most readily assent. The Chief Commissioner feels quite sure that they will not understand a supplementary rate on irrigable land. He holds that the analogy of English circumstances spoken of has no existence. It is a very different thing, getting the intelligent assent of English proprietors to the payment of rates in defrayal of the cost of a local improvement; and persuading thousands, or rather millions, of disconnected cultivators, living on a line of country hundreds of miles in length, that it is to their advantage, contrary to old custom, to pay for water which has never reached their fields. There will always be the risk of causing general discontent by the sudden exaction of such an addition to the ordinary fiscal demands. The insertion, therefore, of such a provision into a legislative Act, not professedly a measure of taxation, and not easily repealable, may, the Chief Commissioner fears, lead to practical difficulties, and he ventures to recommend that the subject be further considered, and the necessity for the cess be clearly made out. This will allow of time to test the feeling of parties interested. If this be favourable, no harm will be done; if unfavourable, the degree of its intensity should then be ascertained. The subject would seem to be easily separable from a Bill to amend the administration of the existing canal-law, and to call for the attentive consideration of the revenue-officers."

In the Central Provinces alone, where there was not much experience in these matters, we had an opinion favourable to the principle of the section. SIR HENRY DURAND could not help thinking that the opposition to the policy of this particular clause had been due to the peculiar wording, in this matter, both of the Statement of Objects and Reasons appended to the Bill, and also of the somewhat arbitrary terms in which the section itself was worded. He found that, in the Statement of Objects and Reasons, where it laid down the principle on which the section was based, the principle so laid down was good, and that it could in itself hardly be objected to. It was there stated that—

"The Government constructs irrigation-works out of the funds or on the credit of the general tax-paying community, and, as trustee for that community, it must take the best possible security for the payment, by the districts which are benefited by any canal, of the actual charges to which the State is put by its construction and maintenance. It might be argued that the liability to meet such charges should be extended to the whole tract of country which receives any benefit from the irrigation-works. But it is believed that, under a satisfactory system of management, the needful returns to cover the charges may be obtained from the land which will directly benefit, and it is therefore considered sufficient to limit this liability to the irrigable lands only."

It was rather remarkable that, when you read section 56, you did not find any allusion to what was contained in the Statement of Objects and Reasons, confining the water-rate to lands which will directly benefit:

"56. If, at any time not less than five years after the commencement of irrigation from any canal, the average nett revenue in the three next preceding years, realized by the Government from the use of the water thereof, and including all sources of income dependent on such canal, and deducting all charges for maintenance and management and working properly debitable to the revenue-account of the same, shall not amount to a sum equal to seven per cent. on the capital expended on the said canal, the Local Government may charge on the lands irrigable by the water of such canal, but not paying any water-rate therefor, such a yearly rate or rates as shall, when added to the nett yearly estimated income, reckoned as aforesaid, produce a total amount, as nearly as may be, equal to seven per cent. on the capital aforesaid."

so that, at the first blush, he (SIR HENRY DURAND) could understand the Local Governments going against this particular section of the Bill; because, whilst there was no uncertainty as to the principle laid down in the Statement of Objects and Reasons, there was nothing to show that, in the section there was a corresponding condition affecting the application of the principle: he could quite understand the alarm of the Local Governments at the section. Then, again, in the Statement of Objects and Reasons the word "district" was used. A district was only an aggregation of villages. It did not always follow that the canal-districts and civil districts were of the same demarcation; nor did it at all follow that the villages which composed either canal or civil districts would all benefit from the construction of a canal. Some might benefit from it; others might benefit partially; some might not benefit at all, and some might even suffer detriment. So that, from the indefinite words used, the Local Governments might well be startled; but he did not think that, after a careful consideration of what the Local Governments had said, they really went against the principle involved. He thought that the financial policy was one which, stated generally, was a principle which would be accepted by every one: the difficulty, and it was the real difficulty, was as to its application. While he was not prepared to say, admitting, as he did, the soundness of the general principle, that that principle was in itself obnoxious to criticism: he was not prepared to say that this Bill, supposing the principle applied as it ought to be, and with some modifications of section 56 as it now stood in the Bill, might not be made a good Bill. If it were not for section 56, hardly any one would deny that the Bill itself was a good Bill: it really did very little more than bring into an improved shape what was now embodied in two or three old Acts and Regulations, and it invested the present practice with legal form. Therefore, excluding that section and some others connected with it, all of which the Hon'ble Mover of the Bill would, he was certain, amend, he thought the Bill was one that should be regarded as unobjectionable. At the same time, there were points in it which he should like the Select Committee carefully to take into consideration, for he was convinced that a good deal of the opposition that had been raised might very easily be remedied. With His Excellency's permission, he would take up those points *seriatim*.

There had been a great deal said as to the powers proposed to be conferred on canal-officers. Now, as to the particular part of the Bill in which certain powers were conferred on the canal-officers, he did not entertain any objection to its provisions; he thought that they were a body of men who would act carefully and well, both in the interests of the country and of the Government; but there were particular sections which might well be brought under the ordinary action of the civil courts. He could see no harm in their complying with the views expressed by some of the Local Governments and their officers who commented on the Bill, so as to alter the venue in proceedings under certain sections: he particularly alluded to sections 19, 21, 53 and 54. Now, all those sections had reference to rents, and he was not quite sure that they were not out of place in a Canal Act. He did not see that there would be any harm in leaving jurisdiction in this respect unshackled to the Revenue Courts. Such a course would not only prove a very great safeguard to the people, but would also operate as a real check on the canal-officers. It was very natural that the civil officers should entertain such a feeling, and he could see no objection to these sections being treated as he proposed, thus giving the canal-officers the assistance of the decisions of independent courts. It was entirely a rent-question. He was informed that, in the re-settlement of rents, which usually followed the settlement of the land-revenue of a district, there was no provision requiring that the rent should bear any proportion to the revenue-rates fixed by a revised settlement. We were, therefore, introducing a new element, and a new element in questions of rent in a Canal Act. He thought that the Revenue Courts should

be required to adjudicate on all claims to enhancement of rent, and to settle them as they did similar claims under the Acts which guided them. This was a point which he ventured to recommend to the consideration of the Committee as likely to remove objections to the Bill.

Section 56 was, as previously observed, a more difficult subject for consideration; but if the Council had paid attention to the somewhat lengthy extracts which he had read from the reports of the Local Governments, they would observe that the gist of their objections was founded on the fact of the powers conferred by this Bill for the levy of the water-rate on people who derived no benefit at all. If the rate was limited to lands in no other way irrigable, and which were within the sphere actually irrigated by the canal, there would be less ground for objections on the part of the Local Governments. But, as the Bill was worded, a village might find itself compelled to pay for no advantage received, or it might be required to discard its wells from which its lands were irrigated, and which were sunk at great cost, in order that it might contribute to the financial success of some undertaking of which it was wholly independent. Although there was a discretion left to the Local Governments as to the compulsory rate, and the action upon that discretion was subject to the control of the Governor General in Council, yet he thought that this point was one which, though guarded in this manner, had moved the Local Governments very much, and which admitted of an easy remedy in Committee; and he was under the impression that it would, coupled with other financial adjuncts which the Hon'ble Mover of the Bill would be able to add, in a great measure remove the objections entertained to the Bill. If he understood the section rightly, taken in connection with section 61, there was nothing to prevent very considerable practical injustice being done to a village, the lands of which were irrigable but not irrigated by, or requiring irrigation from, a canal which might run twenty-five or thirty miles off, and that village might be made to pay towards the general deficit of the work. That he thought should be carefully looked into.

As connected with this subject, he confessed he entertained great doubts as to the policy of section 62, to which he very earnestly asked the attention of the Council. It would be remembered by his Hon'ble colleagues that, with regard to reproductive works, he had urgently recommended that there should be a strict account kept of each separate work, and that its cost and the revenue and profits derived from such works should be laid periodically before the public at the time of the preparation of the Budget. Now, this section appeared to him really to militate against that which he held to be most important; for, although he himself was not of the opinion which he had heard advanced in that room against the construction of public works by loans, on the ground that loans necessarily led to extravagance—an opinion which he thought rather unworthy of a Government to bring against its own prudence and power of control—still he did think that the credit of the Government and of the country was involved in the results of its reproductive works being laid before the public without any jumbling or mixing up of one work with another.

The accounts rendered of separate works should be so clear and clean, that if any capitalist wished to know the outlay on, and the returns and profits from, such works as the Ganges or Jumna Canals, the Soane Canals, the works taken over lately from the Irrigation Company, the Godavery works, or any other reproductive work in any part of India, he should find no difficulty in ascertaining exactly how the account stood. There should be no blending of successful with unsuccessful reproductive works. Therefore he rather thought that these two sections, if they led to anything of the kind, were open to objection; and he recommended them to the consideration of the Committee, both in a financial and practical point of view.

Then, again, section 67 was to his mind one which required very careful consideration, for it appeared to him that it struck somewhat at the principles which ruled our settlements. The section provided that—

"67. Whenever any land, the owner of which is charged with a water-rate as aforesaid, or the land-revenue payable in respect of which includes an addition on account of the increase of rents or profits due to irrigation from any canal, shall from any cause be deprived of the use of canal-water, such owner shall be entitled to no compensation on account of such deprivation, other than a remission of such water-rate or reduction of such land-revenue.

"No such remission or reduction shall be allowed, unless it be established to the satisfaction of the Collector that the rents or profits receivable by the owner from the said land have been or will probably be reduced, in consequence of such deprivation, by an amount exceeding one-tenth part of the increase of rents or profits, in consideration whereof the said owner shall have been charged with water-rate, or his said land shall have been charged with additional land-revenue."

The question which arose on this was, Why should any revision be made of revenue, because the profits derived from the land were less than at the time of the settlement? If he (SIR HENRY DURAND) understood the principle of our settlement properly, it was that the people took their chance of loss in one direction, by balancing it with the chance of gain in another. A village might lose a certain proportion, say one-fifth, of its settlement-rate by loss of canal-water, but it did not at all follow that everything else might not increase in value; that prices of all kinds, demands for particular produce, the effect of railways, and a great many things might happen to make that settlement not only very just but profitable. That was a sort of section which should be left to the operation of the Revenue Courts, and it need not come into this Bill at all.

In section 68 there was a very considerable power conferred on the ordinary canal-officers, with the view of levying the water-rate where, by percolation of the water from a canal, benefit was conferred on the whole of the land. He was not sure that that was not right. But suppose there was any mischief committed by the percolation? He adverted to this particularly, because, in the sections headed "Drainage," he did not find in the Bill as it stood that, if a village suffered from damage caused by the canal, there was any provision to exempt the agriculturist from the payment of the rate, and the Bill, as it was generally read, proposed to make villages pay for drainage-works rendered necessary by the canal. We were aware that, in some districts, canals had done injury. Districts had been named to him of which he had no doubt the Hon'ble Mover of the Bill knew—he would instance Muzaffarnagar—in which the effect of the canal running through it was represented to him as having caused serious injury to the soil; it had raised the spring-level of water very much and had produced an immense deal of fever, so that literally, in those parts, the people had suffered most severely; so severely that, sometimes, in a bad year, the greater number of the people of whole villages were on their backs with fever, and the mortality was great. He thought that the drainage-works necessary for remedying these evils did not form a proper charge on those who suffered the injury. The people had derived no benefit, but were involved in lamentable losses and injury, caused by the construction of canals, and to make them pay for drainage under such circumstances appeared to him not right. He thought that the cost of such works was a fair charge against the profits of the work.

He had no objection to the chapter, which had been a good deal discussed, regarding compulsory labour; he had no more objection to that than he had to the powers proposed to be conferred on canal-officers. Compulsory labour was occasionally absolutely necessary for the welfare of the people, and although it might appear a rather arbitrary and harsh measure, yet he was confident that any one who had had experience of canals, the banks of which were, at particular points, liable to be easily broken through, swamping and desolating the country around in a way from which it took months to recover, could not for a moment doubt the advisability of these sections. Consequently, he entirely agreed with them, and, practically, he thought that, provided the Hon'ble

Mover of the Bill and his Committee could effect a modification with reference to section 56, such as he (SIR HENRY DURAND) had suggested, the Bill was on the whole a good and necessary Bill, but it required the amendments which he had ventured to recommend to the consideration of the Committee.

The Hon'ble MR. CHAPMAN said that, as at present advised, he objected to the principle of section 56. It seemed to him to contain an ingenious provision for guarding against the effects of errors of construction or of calculation. Now, the estimates of the Department with which Colonel Strachey was connected were not immaculate. The tendency undoubtedly was to under-estimate the cost of construction and over-estimate the probable receipts. He (MR. CHAPMAN) did not see why the public, who derived no direct benefit from the works, should be made to pay for these errors. As well might they call upon the inhabitants of a district through which an unproductive Railway passed to make good the deficit. You said to them "A beneficent Government has constructed this great work by which you will secure an outlet for your labour and your produce." Their answer would be, "We are the best judges of our own interests, and we consider your Railway a mistake, and leads to no place in which we have any interest."

His (MR. CHAPMAN'S) belief was, that if irrigation-works were only well conceived and executed, there need be no fear about their financial success.

His Excellency THE PRESIDENT said—"I intend to reserve the greater part of what I have to say upon this very important Bill for its future stage, when, after being amended in Committee, it comes up for final consideration in this Council. I will therefore content myself today with expressing an opinion similar to that which is entertained by my honourable friend, Sir Henry Durand, to the effect that a great deal of the objection that has been taken to some of its clauses can be removed by the amendments that will be proposed in Committee.

"Now, the most formidable objection taken to clause 56 is that stated in the remarks of Mr. Reid and Mr. Inglis of the North-Western Provinces.

"They say that 'it compels the owners of lands adjacent to, but actually deriving no benefit from, a canal to pay water-rate on such land, in order to bring up the proceeds of the water-rate to seven per cent. on the capital expended on the canal, and charges for maintenance, management, and working not properly debitable to the revenue-account of the canal.'

"I believe that, by the insertion in the Bill of a proper definition of the word '*irrigable*,' that objection can be entirely swept away.

"I am informed that it is intended to define the word 'irrigable' in this way; that the land irrigable is not irrigated from a canal; that it is cultivated and situated within such a distance of the canal as permits the irrigation of it by natural flow; that the profits of such irrigation shall increase the annual rent and value of the land to an amount equal to the charge that is placed upon it; and that, not only shall all these precautions be taken, but that the canal-officer shall have offered to construct the minor works necessary for 'conveying the water to the said land under section 29, or (if the said occupier or owner shall so prefer) to permit their construction under section 32 or 33, or shall have tendered an advance of money sufficient to provide for the construction of the said works, such advance to be made and to be repayable in conformity with the rules then in force for making and recovering advances of takkavi, or advances for making improvements in land.'

"I am in hopes that, if these definitions are inserted by the Committee in the Bill and adopted by this Council, many of the objections taken will entirely fall to the ground. I believe also that it will be possible to give to all these definitions practical effect.

"It might be said, and I think with truth, that irrigation-works in India cannot be constructed without conferring great benefits upon the whole

population of a district, and, speaking generally, without adding increased value to all the lands in the neighbourhood of those works.

"I believe that to be a sound axiom; but it is not the principle that is acted on in this Bill, which is more limited.

"The principle upon which the legislature in England has acted in respect to the prosecution of works of local utility is this—it has always considered it right to charge upon a certain district the repayment of capital and interest, and the cost of maintenance, because it is held that the construction of such works confers extensive advantages upon the whole neighbourhood. But this principle is only found to a limited extent in the Bill now before us, and it will be so guarded, that no people can be made to pay for this water who are not directly benefited thereby, unless their land is actually increased in value, and unless the water is actually brought upon the farm. And, here I think it right to say that, unless such a principle as this guides the future of our great operations of improvement in India, we are likely, at no distant time, to find ourselves in serious difficulty; and I believe that, unless the principle is adopted which was so well described by His Excellency the Commander-in-Chief, unless the whole of our loan-finance—the whole expenditure of a remunerative character for improvements to the land and other like objects in India—is removed from the ordinary finance of the country, you will find that it will be difficult to continue these most necessary works on a scale at all commensurate with the requirements of the country.

"I therefore think that those who argue against this principle argue against that upon which all security for the continuance and certain completion of these works is actually based.

"I will not now take up the time of the Council to go into details in proof of this axiom. On some future occasion it will probably be my duty to do so; but when we see that the cost of the ordinary administration of this country is such as can hardly be defrayed out of ordinary revenue, and, when we look to the increased cost of that administration which improvement must necessarily bring, I say that it must be plain that it is impossible to add indefinitely to our payments of interest in regard to these reproductive works without dangerously crippling our power in respect to military defence, the administration of justice, the spread of education, and many other objects which are so essential to the safety and progress of the country.

"I hope that these truths are now beginning to be recognized throughout this land, and it behoves us to look upon these questions, not from a provincial or a local point of view, but to ask ourselves the simple question, if these works are to go on, who is to pay for them; and can they go on if their cost is to be defrayed from the ordinary revenue of the country?

"This consideration has certainly not presented itself to the minds of those who object to this Bill.

"It is said that it is unfair that certain persons should pay for certain works; but if they are not to pay, who is to pay?

"There is no unlimited fund at the disposal of the Government of India which is available for such a purpose.

"If a work is not sustained by local resources, it can only be sustained by the contribution of the general tax-payer, and I ask, is it fair or right that works constructed for the exclusive benefit of the people in the Panjáb or the North-West should be paid for out of the pockets of the people of Madras or Bombay?

"It was the early adoption of the principle to which I have been referring that has led to the successful expenditure of the enormous sums which have been borrowed from the State or from private sources, for agricultural, municipal,

maritime, and other objects at home; and I do believe that, had it been attempted thirty or forty years ago in England to carry into effect the principle that has hitherto been adopted in India, that is, that the general revenues of the country were to be made liable for works of improvement of a limited and local character, not only would the expenditure on those works have been most extravagant (being conducted without that local control which is so necessary), but that the charge thrown upon the revenues would have been so enormous, that the construction of all such works would have long ago been arrested.

"When it is also said that, because engineers make mistakes, and that errors may be committed in the construction of these works, therefore, the loss occasioned by these errors, and the result of these mistakes, are to be thrown upon the general tax-payers of the country, it seems to me to be an objection that is wholly unsustainable.

"These works are not undertaken on the understanding that mistakes are not to be made; mistakes will occur, but to say that a great principle of this kind is unjust, because occasional mistakes, blunders, and errors may be made by persons occupied in the construction of these works, is, to my mind, an argument that can hardly be deemed serious.

"I believe that, in the interests of the thousands whose life (I may almost say), and certainly whose welfare, depend upon the early completion and construction of these works, this principle ought to be adopted; and I do believe that, when it does come to be thoroughly understood that those localities which are to be most benefited undertake to bear the other tax-payers of the Empire free from burden and cost; when the inhabitants come to understand what the object really is, and that in return they are to be guaranteed by Government that the profit of those works—above that which is absolutely necessary to defray the cost of payment of interest, repayment of capital and maintenance—is to be all their own, they will find that, so far from the present Bill being likely to throw unfair, unnecessary and burdensome charges upon them, it will cause these works to be constructed and completed with far more economy and care than they have been hitherto; that in their construction they will be subjected to much more accurate criticism than they have been before; that the whole claim of the Government in their respect will be greatly limited. I believe that, when people come to consider all these points, they can arrive at no other conclusion than that the principle of the Bill is just and fair, and calculated to secure the speedy completion of the works, and at the same time leave to the proprietors and occupiers of the land a larger portion of the profit.

"I am not surprised that objections are taken to this Bill. Everything that is new is liable to suspicion; but I think that the solid objections which have been made can be removed, and that, on further consideration, it will be found that this Bill, if it be properly worked, will confer lasting and immediate benefit on thousands, by securing to them, at the least possible cost, all the blessings of irrigation."

Colonel the Hon'ble R. STRACHEY said that he wished in reply to offer a every few remarks on some of the comments that had been made by Sir Henry Durand on certain sections of the Bill, which he (COLONEL STRACHEY) thought had been somewhat misunderstood. As to the general questions that had been discussed, he had no wish to add anything, as he considered that the servations of His Excellency had so completely met all the points that had been raised as to make further comment unnecessary.

The first point to which Sir Henry Durand had referred, was the extent of the powers to be given to the canal-officers. His Hon'ble friend had said that the matters proposed to be dealt with under sections 19 and 21, and 53 and 54 of the Bill would have been better left to the ordinary Civil or Revenue Courts, and that it was doubtful whether questions relating to the rent of land

should find a place in this Bill. But sections 19 and 21 could not possibly be dealt with except by the Revenue Courts, and the Bill distinctly provided that the whole of the proceedings taken under Part II, in which sections 19 and 21 were, should be before the Collector, whose orders would be liable to appeal in the manner prescribed by the Local Government. The canal-officers would have no share whatever in such proceedings. As to sections 53 and 54, the same general remarks would apply.

As to the propriety of referring in this Bill to questions relating to the rent of irrigated land, the sections 19 and 21 had been specifically approved by the Board of Revenue of the North-Western Provinces. Section 54 was open to more discussion, but the propriety of it was strongly advocated by Mr. Elliott, one of the most able Civil officers employed in settlement-operations in the North-West Provinces.

Next, section 61 was objected to as giving an arbitrary power to group together several canals in reckoning the nett profits which would determine whether a rate might be levied in certain cases on irrigable land not irrigated. But some such power was essential, because the term 'canal' was necessarily very aribitrary, and, in many cases, the irrigation of a district was provided from a number of small works, which might, in fact, be little more than large water-courses, to keep separate accounts of which might be inconvenient or even impracticable.

Section 62 was also noticed as naming the accounts of the local Public Works Department, as affording the standard from which the profits before referred to should be ascertained, and a remark was made by Sir Henry Durand to the effect that the proper standard would be the accounts as audited by the Government of India or its officers. But, as a fact, the local Public Works accounts were drawn up and corrected under the orders of the Governor General in Council, and the system to be followed in keeping the accounts of all irrigation-works would be entirely within the control of the Government of India, so that there would, in fact, be no difference between the local accounts and those of the Government of India.

Objection was taken to section 67 as interfering with the system under which remissions of land-revenue were allowed, which, it was said, should not be changed by this Bill. But, in fact, the remissions referred to in this section were not remissions of land-revenue, properly so called, but of canal water-rates charged on the owner of land, which, under the existing practice, had become confused with, or combined with, the land-revenue. If an owner's water-rate was to be charged, provision must be made for remitting it in case of failure of the canals. To what extent, if any, modifications of the precise terms of the section as it now stood might be desirable, was a question that might be properly dealt with in Committee; but some such provisions as those which it contained were essential.

The power given under section 68 to rate land not actually irrigated, but situate within a certain distance of the canal, and benefiting by percolation, was noticed as excessive. But the section plainly said that, to admit of the land being charged, the advantage to be derived from the canal must be equivalent to that which would be given by a direct supply of canal-water. This seemed quite sufficient.

The next point noticed had reference to the drainage of lands, and objection was taken that, under the Bill, a proprietor might be required to pay for the removal of evils which were caused by the errors of the Government Engineers, and were directly due to defects in the construction of the canal-works. COLONEL STRACHEY pointed out that the proviso at the end of section 84 distinctly stated that no charge should be made under the Bill for removing obstructions to drainage due to artificial causes, and that the persons who had caused such obstructions should be responsible for their remedy or removal.

He added that, although no doubt there were many instances in which the Government works had caused evils of this sort, the main cause of the worst cases was the neglect of the small water-courses, which, not being properly maintained, allowed the escape of water into hollows where it formed swamps of a most objectionable nature.

As to the means of obtaining compensation for injuries done by Government canal-works to adjacent lands, to which allusion had also been made, COLONEL STRACHEY observed, that he supposed that any proprietor placed in such circumstances could bring an action for damages against the Government, though he did not remember ever to have heard that such a thing had been done. But however this was, the present Bill provided a distinct remedy for all such cases. Section 24, read with section 106, provided that, in all cases in which injury was done to land by the escape of water from a canal or drainage-work, or from the failure of any drainage-work, or from the interruption of the drainage of lands, by canals or drainage-works, should be compensated, as though the loss had been caused by the interruption of a water-supply. Thus, in fact, the present Bill, so far from placing proprietors or occupiers in a worse position than before in these respects, for the first time prescribed a specific remedy for such cases.

The Hon'ble SIR HENRY DURAND asked permission to say that the explanations offered had not satisfied him, and that he would leave the Select Committee to deal with the objections he had raised.

The Motion was put and agreed to.

The following Select Committees were named :—

On the Bill to amend the law relating to prisons in the Panjáb and the Provinces under the immediate administration of the Government of India—The Hon'ble Messrs. Chapman and Cockerell and the Mover.

On the Bill to regulate the consolidation and maintenance of Public Works for Irrigation, Navigation and Drainage—The Hon'ble Mr. Strachey, the Hon'ble Sir R. Temple, and the Hon'ble Messrs. Stephen, Forbes, Chapman and Cockerell and the Mover.

The Council adjourned to Friday, the 25th February 1870.

WHITLEY STOKES,
Secy. to the Council of the Governor General for making Laws and Regulations.

CALCUTTA,
The 18th February 1870.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 10 of 1870.

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, MARCH 5, 1870.

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GOVERNMENT OF INDIA.

HOME DEPARTMENT.

COTTON CROPS IN THE CENTRAL PROVINCES AND THE BERARS.

No. 572, dated 10th February, 1870.

From—H. RIVETT-CARNAC, ESQ., *Cotton Commr. for the Central Provinces and the Berars,*
To—*The Secretary to the Chamber of Commerce, Bombay.*

In continuation of former correspondence, I have now the honor to submit, for the information of your Chamber, the usual report on the state of the weather in the Central Provinces and the Berars during the month of January last.

2. Advices sent to your Chamber early in the month by letter and by telegraph, will have shown you that the New Year was ushered in with damp, gloomy, unseasonable weather, accompanied by heavy showers of rain.

3. By the 8th of the month, the clouds had cleared away, and the cotton plants began to revive with the help of the clear, bright days that followed. But on the 17th, the rain again returned, the bad weather extending from Khangaon to Hingunghât, and telling heavily on the crop which had already suffered severely. During the last week of the month, the weather was again clear, and, up to date, there has been no return of the damaging rain, and the equally disastrous close, cloudy weather which accompanies it.

4. *The Wurdah Valley* (*Hingunghât*).—You have received in a former communication a detailed account of the damage done to the crop in this quarter. Since the date of that report no material change had taken place. The more recent bad weather has not done much more damage there, as most of

the crop was off the ground before the rain returned, but the damp has delayed cotton-cleaning, and to this cause the comparatively small arrivals in the markets may partly be attributed.

5. The Assistant to the Cotton Commissioner in the Wurdah Valley reports, under date the 4th instant, as follows:—

"During the week, I have visited Wurdah and Arvee. Cotton is now coming into these places in greater quantities. The Hingunghât supplies also have much increased, and I hope that the real cause of the cotton not coming in earlier may have been more from the fact, that the Natives have been keeping it back than that the crops have been so bad that there is not the cotton to bring in. Captain Ricketts, the Deputy Commissioner of Wurdah, is also of opinion that the Natives are, to a great extent, keeping back the cotton."

6. The rain-fall registered at Hingunghât during the month was as follows:—

January 17th ...	... ...	Inches ·40
„ 18th ...	... ...	„ ·09
„ 19th ...	... ...	„ 1·63
„ 20th ...	... ...	„ ·10
„ 21st ...	... ...	„ ·90
	Inches ...	3·12
Registered previously from commencement of monsoon ...	... ...	39·61
	Total Inches ...	42·73

7. *East Berar* (*Oomraotee*).—The Assistant to the Cotton Commissioner, who, in accordance with my instructions, has been on tour through the districts, reports that the plants have suffered very severely from the rain and worm. Most of the cotton had been picked. Owing to the damp, the plants were beginning to flower again. It was not, however, expected that the bolls would come to maturity. The cultivators and small dealers, the Assistant reports, are inclined to put the loss down at "eight annas in the rupee" (50 per cent.), or even more of the crop, but then these classes are not, as a rule, remarkable for expressing the most cheerful opinions regarding the out-turn, and some of them perhaps realise that if the story that the crop is a short one can be well supported, prices may be affected. It would be well, therefore, to accept such accounts with caution, and although the damage has doubtless been considerable, still I am inclined to believe that the estimate noticed above is exaggerated, and the Commissioner of East Berar, who has been good enough to cause enquiries to be made through the District Officers, confirms this view. Writing on the 14th ultimo, Colonel Nembhard stated:—

"The result of enquiries made by me, first through the Deputy Commissioners, and secondly by myself, throughout a large portion of my division, is that the cotton has not suffered so much by the recent rain as articles published in the daily papers would lead one to suppose.

"The present crop was certainly not equal to that of last year, but then last year's crop was an exceptionally large one.

"I estimate the loss in the present crop caused by the recent rain as follows:—

Oomraotee District	...	... 2 annas.
Woon Districts	...	... 2 „
Ellichpore District	...	... 4 „ out of 16 annas."

Since the above was written, the plants have again suffered from the rain and the worm.

8. The Government Seed Garden at Oomraotee has not escaped; Mr. Pillans, one of the gardeners recently sent from England, reports:—

"I stated in my last report that I hoped to get nearly as much cotton from the garden as had already been picked, but, on examination of the plants, I found they were covered with worms and with a red fly, which were completely destroying the bolls."

9. Cotton is now coming into the Oomraotee market in larger quantities than before, as the accompanying extract from a letter just received from the Assistant to the Cotton Commissioner, and dated the 6th instant, will show:—

"During the last three days, cotton has been coming into the market in larger quantities than usual. This morning (the 6th) was the 'Busunth Punchmee,' when about 1,000 *Bhojahs** were in the market. On the 'Busunth Punchmee' the brokers and cultivators have to fulfil the contracts entered into with the merchants of Oomraotee for the delivery of cotton. Every cultivator, who had not made a contract, hoped, therefore, that on this day cotton would fetch a higher price than usual, and tried his best to keep back his cotton till then. On the 'Busunth Punchmee,' however, the price was only Rs. 90 per *Bhojah*, whereas on the preceding day, it was as high as Rs. 94 and 95."

10. *West Berar* (*Khangaon and Akote country.*)—The Assistant to the Cotton Commissioner, under date the 28th of January, writes as follows:—

"The weather has been cloudy and unsettled-looking, but there has been no rain, and the Natives have been busily employed in picking and cleaning. The most of the first picking is now secured, and the villages are full of cotton; but unfortunately there is a scarcity of labour to clean the *Kuppas* (cotton in the seed), and the receipts at the cotton marts are consequently small.

"The greater portion of the cotton that has been brought in up to date is stained and full of black leaf, but, as anticipated, some small lots from the Jurree country have been found to be very fair, and I hope, in the course of the season, to see a considerable quantity of this cotton.

"I still hear great complaints about the raid of the cotton worm, and the damage it has done is so great, that I fear, notwithstanding the increased area under cotton cultivation this season, the crop will not be so large as last year's."

Under date the 5th instant, he adds:—

"The general opinion appears to be that the crop this season is a very short one. Some say it is not more than an eight anna one, others put it down at equal to twelve annas. I think the latter calculation is likely to be correct, but it is very difficult to form an opinion. The worm has done immense damage, and in some beautiful fields which have come under my observation, fully one-half of the produce was destroyed by them. But some villages have been affected less than others, and, on the whole, considering the increased area under cultivation, I would venture to say the crop will not be less than a twelve or thirteen anna one.

"Merchants are alarmed at seeing the small receipts at the markets, but the villages are full of *Kuppas* (cotton in the seed), and the only reason of delay in bringing it in is the difficulty in getting it cleaned. The Khangaon market is, however, gradually assuming its usual appearance. The imports into the market up to date are 19,742 Bhojahs of cotton, 2,704 Kandies of Kuppas, and today as many as 2,500 Bhojahs were registered. Prices varied this morning from Rs. 87 to Rs. 92 per Bhojah according to quality.

11. This worm, which has caused so much anxiety this season, is, so far as I ascertain, identical with the "Boll-worm" of America, a description of which is contained in some papers, which the Minister of Agriculture of the

* The *Bhojah* is about ⅓rd of the Bombay Kandy of 7 cwt.

United States has recently been so good as to send me.* The non-appearance of the worm during a fine season is explained by the fact, that dry, hot days destroy the eggs of this cotton enemy, whilst the damp weather is favorable to them. Unfortunately it does not appear that any inexpensive artificial measures can be adopted to stop the ravages of this blight, which is equally destructive to the *thoor* (*Cytisus Cajan*) and other crops. It is to be noticed that the cotton plant, when in a healthy condition, resists the attacks of this worm. In an ordinary fine season, the exotic plants, which do not like bright, warm days, suffer from it, and the indigenous cotton escapes. During a damp season, the reverse is the case. In fact, the damp, unseasonable weather, so fatal to the indigenous plant, seems to suit the exotic cotton excellently, and the New Orleans and other varieties are now in far better condition than they have ever been before, and have suffered less severely from the worm than the indigenous cotton. Recently, I have visited several experimental fields of exotic cotton in the neighbourhood of Calcutta. Here the weather has been clear and fine, just what our Berar cotton would have liked. But the worm had attacked nearly every single boll on the foreign plants.

12. Your Chamber will realize that it is extremely difficult to estimate with any accuracy the effect of the damage done to the crop. My former reports, and the extracts from letters given above, will assist you in forming an opinion on the subject, and of judging roughly of the prospects of the supplies from the Central Provinces and the Berars during the present season. You will have seen that the crop of the Wurdah valley has suffered severely. As regards the Oomraotee country, the bad weather of the middle of January was subsequent to the date of the estimate of the crop, with which Colonel Nembhard was so good as to furnish me, and which has been quoted above, and that estimate consequently requires some emendation. The damage in East Berar has not been less than in Oomraotee, and I have also the authority of Mr. James Melville, who, early in the month, made a careful examination of much of the cotton country, for saying that the rain and worm have undoubtedly destroyed many of the plants and bolls; and my own inquiries and observation confirm this view. That the crop has suffered much in quality, there can be no doubt. On the other hand, in estimating the out-turn, and comparing it with last year's supplies, the extension of the cultivation which this season has witnessed, and the details of which have already been supplied to you, must be taken into account. It is also, I think, correct, as has been more than once noticed to me, that if the rain and damp weather have brought out the worm, they have also had the effect of bringing out many new flowers and pods, which would, to some small degree, balance the damage done. With the facts and figures which have already been communicated to you before your Chamber, you will be able to judge, nearly as well as I can, of the number of bales, which our cotton country is likely to be able to supply this season. My own view, such as it is, is as follows. Early in the year, when the fine weather returned, although I knew that the damage to the crop had been considerable, I was in hopes that the plants would recover, and that the extension of cultivation would nearly balance the damage done, and that there would consequently be hardly any appreciable falling-off in the exports. Since then, the return of the bad weather has not only prevented the recovery of the weak plants, but has also done much further damage. I fear, then, we must look for a smaller out-turn than usual. Any prediction of the number of bales that will be supplied by these Provinces this season, must, at the best, be a not-very-reliable guess. But the majority of well-informed persons, whom I have consulted on the subject, think that we must expect a falling-off of about one-fifth in this season's exports; and I believe this to be as correct an estimate as can at present be formed. I return to the Berars immediately, and I shall not fail to communicate without delay to your Chamber any further information that I may receive on this important subject.

* See Appendix.

13. This much at least is certain that as yet, this season's exports of cotton to Bombay have been very small as compared with the figures of last year. The usual statement in detail is given on the next page, and from this it will be seen that, taking the full-pressed bale and half-pressed bale to represent, on an average, the Bombay bale of half a Kandy, or 392 lbs., and the Dokra as representing ⅓rd of the above bale, the exports up to the end of last month amounted to but 23,391 bales, against 70,175, the figures up to the same date of the preceding year. This great falling-off is, to some extent, to be accounted for. The season was exceptionally late. The jowaree (millet) harvest was one of the fullest that has been known in the Berars for years, and the cutting and storing of this large crop delayed the picking of the cotton. Then the cleaning of the cotton has been, time after time, put a stop to by the rainy weather, for as you are aware, cotton, when damp, will not pass through the "churka." The extract given above from the report of the Assistant Cotton Commissioner at Oomraotee gives an example of one of the many causes that tend to keep back the cotton crop. Many of the cultivators and middlemen are now so well off that they can afford to hold their cotton for some favorable turn in the market, and as the price of cotton often rises as the season progresses, the cultivators have no great inducement to dispose of their crop before February.

14. The branch line of railway to Khangaon, in which your Chamber has evinced so much interest, is very nearly finished, and will yet, it is hoped, carry a large proportion of this season's cotton crop.

15. I have recently received, through the courtesy of the Board of Revenue, a copy of the report on the prospects of the cotton trade in the North-Western Provinces for the season 1869-70. As hereafter some portion of the cotton crop of Northern India may find its way across, by the main line of the Great Indian Peninsular Railway, to Bombay, the accompanying figures, taken from the report, may not be without interest to your Chamber. The following table shows the area under cultivation in the several divisions, or groups of Collectorates of the North-Western Provinces, during the present season, as compared with 1868-69:—

Divisions of the North-Western Provinces.	Area in Acres. Out-turn in Cleaned Cotton of Maunds of 40 Sheers or 80 Lbs.			
	1868-69.		1869-70.	
	Area in Acres.	Out-turn in Mds.	Area in Acres.	Out-turn in Mds.
Meerut	1,51,222	1,61,744	1,74,715	2,26,463
Rohilcund	1,27,540	69,330	1,74,681	1,46,811
Agra	2,60,296	1,61,659	3,52,132	3,07,351
Jhansie	49,379	9,550	75,829	40,567
Allahabad	2,58,179	95,974	3,18,553	2,31,176
Benares	18,667	14,390	22,649	14,547
Total ...	8,65,283	5,12,647	11,18,559	9,66,915

16. In regard to the season, it is stated that "the prospects of the crop are everywhere reported to be most promising, and there is apparently no question that the yield will be singularly good compared with last year." With reference to the out-turn, it is added:—

"The returns supplied to the Board can only be taken to indicate the breadth of land relatively under cotton in the years to which they refer. The estimated yield is far too rough to be of value."

STATEMENT showing in detail the quantity of Cotton exported from the Stations of G. I. P. Railway, in the Central Provinces and the Berars, from the 1st October 1869 up to 30th January 1870, as compared with the quantity exported up to the same date in the season of 1868-69.

Stations.	1868-69.			1869-70.		
	Full-pressed Bales.	Half-pressed Bales.	Dokras.	Full-pressed Bales.	Half-pressed Bales.	Dokras.
Nagpore	...	...	450	...	...	136
Boree	...	...	...	...	...	...
Sindee	...	...	295	...	...	...
Wurdah	3,754	10,985	1,099	1,671	5,282	20
Poolgaon	...	1,708	1,845	...	1,187	153
Chandoor	...	1,384	285	...	140	...
Badnaira	4,608	10,136	883	3,651	1,065	122
Moortizapore ...	...	974	1,039	...	424	237
Akolah	...	903	1,842	...	917	693
Sheogaon	3,602	9,130	1,550	1,116	851	3,595
Nandoorah	5,000	10,431	10,310	4,333	470	727
Mulkapore ...	...	...	691	...	...	134
Khundwa	...	...	1,406	...	...	615
Booranpore ...	...	...	985	...	...	420
Total ...	16,964	45,651	22,680	10,771	10,336	6,852

ABSTRACT of Exports in Bales of half a Kandy.

Season 1868-69.		Season 1869-70.		Decrease this Season.
Full-pressed Bales	16,964		10,771	6,193
Half-pressed Bales	46,651		10,336	35,315
22,680		6,852		
Dokras ... ... 3 ...	7,560	3	2,284	5,276
Total Bales...	70,175		23,391	46,784

17. The latest figures represent the area under cotton cultivation in the several divisions of the Punjab to be as follows:—

Rawul Pindee	(4 districts)	1,29,230	Acres.
Delhi	3	„	87,166	„
Lahore	3	„	86,926	„
Umritsur	3	„	82,827	„
Mooltan	4	„	81,338	„
Jullundur	3	„	67,071	„
Umballa	3	„	41,269	„
Derajat	3	„	40,467	„
Peshawur	3	„	33,010	„
Hissar	3	„	30,490	„
Total	679,294	Acres.		

As you are aware, a portion of this crop finds its way to Kurrachee. I have recently seen in Calcutta some fine parcels of Umritsur cotton, which have come down nearly the whole distance by rail.

18. Oude, so far as I can at present learn, exports no cotton, but draws away some portion of the North-Western Provinces crop; and at Ghazeepore and other marts in the North-Western Provinces, large quantities of cotton are bought up for local consumption, and for export beyond our eastern frontier

19. The accompanying table, with which the Agent of the East Indian Railway has been kind enough to furnish me, shows the chief cotton-exporting stations on this line of railway. The large exports of Delhi may, I imagine, be partly accounted for by the fact that, during a portion of the period to which this return refers, the railway line was not open to Umballa, and much of the cotton from the North-West was taken to Delhi by cart along the Grand Trunk Road. I have not as yet been able to procure reliable returns of the quantities of cotton carried down the river by country boats.

STATEMENT showing the quantity of Cotton exported from the Stations on the E. I. Railway from the 8th November 1868 to 30th October 1869.

[The Bale here contains about 300 lbs. of Cotton.]

	Total No. of Bales.		Total No. of Bales.
Delhi	26,754	Allahabad	94
Gazeeabad	45	Fort	112
Meerut	4,780	Mirzapore	29,531
Khoorjah	22,782	Jubbulpore	2,926
Allyghur	12,044	Zumaneah	164
Hattras	11,094	Patna	265
Agra	64,995	Bhaugulpore	122
Ferozabad	776	Cynthea	28
Etawah	2,587	Raneegunge	560
Cawnpore	41,193	Burdwan	85
Total ...	187,060	Total ...	2,20,887

20. The following figures received, within the last few days, from the Secretary to the Board of Trade, showing the total imports of cotton into the United Kingdom during the past year, will be of interest to your Chamber. It will be seen that India heads the list, 780,000 cwt., or about 200,000 bales of 400 lbs. more of Indian cotton having been imported during the year than American cotton, which stands next on the list. A very large proportion of the Indian cotton was however re-exported.

	American.		Brazilian.		East Indian.		Egyptian.		Miscellaneous.		Total.	
	Bales.	Cwts.	Bales.	Cwts.	Bales.	Cwts.	Bales.	Cwts.	Bales.	Cwts.	Bales.	Cwts.
Cotton in stock on the 31st day of December 1869 ...	81,779	333,567	48,768	74,182	370,330	1,069,813	28,675	113,695	6,364	65,461	536,116	1,646,727
Total Imports during the year 1869 ...	1,055,811	4,027,028	499,779	739,343	1,496,674	4,767,611	134,091	661,001	166,768	453,914	3,353,121	10,638,899
Total Exports during the year 1869 ...	136,719	599,606	69,723	108,493	560,107	1,764,483	8,966	42,073	13,176	50,359	796,710	2,565,302

APPENDIX.

The following account of the American "BOLL-WORM" is taken from a paper by Mr. Joseph B. Lyman, of Louisiana, sent me by the Hon'ble Horace Capron, Minister of Agriculture of the United States of America. I fear the modes of expelling the pest herein suggested could not be undertaken in this country.

Enquiries are now being made to ascertain whether the boll-worm of Berar is identical with the species described in this paper.

Besides the "boll-worm," other destructive insects have been found on the cotton plants in Central India and in the neighbourhood of Calcutta, and specimens have been submitted for examination to Mr. Wood Mason, the Assistant Curator of the Indian Museum, who has very kindly consented to report on them.

H. RIVETT-CARNAC.

"THE BOLL-WORM."

"Unlike the caterpillar and the army-worm, the boll-worm is an annual pest of the cotton plant, hybernating in the ground, and commencing depredations as soon as the young forms begin to swell. He never destroys a crop as they do, but pierces three, four or sometimes ten, bolls, nearly or quite killing them, at length penetrating to the centre of a full-grown boll, where he lies concealed till near the time of his transformation.

"The peculiarity of this worm is that his natural food is corn, which he always prefers, but will attack cotton if the other plant is not at hand. The moth which produces the worm is thus described by a planter in Jackson, Mississippi, who has evidently made the subject a study:—'Of a pale yellow or shining ash color; length of body and wings, an inch and one-eighth; the wings expanded two inches, the upper covering the lower; below the centre, and near the border of the upper wings are two dark spots, with two or three indistinct ones on each upper wing: end of the wing whitish, having a wavy dark band near the border. Throat a little convex, downy: abdomen, color of wings, and downy: proboscis folded spirally underneath, double, half an inch long; eyes large, clear, yellowish-green. Six legs, antennæ fusiform: lies concealed in the day in fence corners and around stumps, flies only late in the evening, and at night near the ground, and rapidly.'

"In the early part of July, this moth pairs, and in four days lays about seven hundred and fifty eggs, soon after which it dies.

"These eggs are deposited on the silks of corn. In three days they hatch, and the young worms commence feeding on the green corn and the silk. Remaining here about two weeks, the worm then goes down into the ground to the depth of three inches, where it is transformed into a chrysalis of bright mahogany color and conical shape, and about an inch in length. In sixteen days the moth above described bursts from the chrysalis. The moth of the second generation finds, at this time of the year, little or no corn in the silk in the cotton latitudes, and in the absence of its favorite plant, lays its eggs on the top bud, or on the ends of the side buds, of the cotton plant.

"At the time of this deposit, if the weather is dry and the sun very hot, most of the eggs perish or become abortive. *This is the reason why moist wheather in August forebodes an attack of the boll-worm.* But no season is so hot and dry but some worms will be hatched, and they commence to spread downward upon the plant and commit depredations on the boll.

"The Boll-worm is thus accurately described by Mr. Boddie, of Jackson:—

"'The Larva or Caterpillar, when full grown, will measure from an inch and a half to an inch and three quarters in length: it looks, to a superficial observer, brown, pale yellow, and light green, though it has eight longitudinal

streaks of white, brown, and green, with one or two dots on each segment of the body along the lowest streak. It is smooth, shining, naked, with a few hairs on each segment of the body. It is of a cylindrical form, tapering a little at each end: rather thick in proportion to its length, and has six legs in the fore part of its body, eight at the middle, and two near the tail. The head is brown, smaller than the body, and oval in shape.'

"After thus destroying from one to eight or ten bolls, the reptile descends and rolls himself into a cocoon or egg, in which to get through the coming winter and spring, for nature prepares no food for him during nine months of the year. The eggs or cocoons that hybernate must be hidden in the neighbourhood where the perfect insect lived, that is, in the cotton-fields or near them. It is doubtful whether any are hidden in the soil of the corn-field where there is cotton any where near, for after July, the animal entirely deserts corn, and goes to the cotton-fields. This is the case, at least, in the district where cotton flourishes best, for there the corn nearly all hardens late in July, or early in August. Thus in the northern part of the cotton belt, as Tennessee and North Carolina, the boll-worm does little injury to cotton, for there he can find green corn till quite late in the season.

"These preferences and habits of the boll-worm understood, it is not so difficult to prescribe a course of treatment that will rid the cotton-fields of his presence.

"There are two modes, and, so far as now known, but two modes, of expelling this pest: starving or killing the moth, the other by drawing it to corn, its natural food, and keeping it there.

"Rotation of crops managed so as to place the corn at some distance from cotton, and throwing out the cotton-field to lie fallow a year, will destroy almost all the eggs of the boll-worm.

"Suppose that a cotton farm is so far remote from others as to enable the planter to interpose a mile of woodland or pasturage between the cultivated fields of each. In September, the worms descend from the bolls and enter the ground. Let the ground lie fallow, or be sowed with oats the following year. In August, when the moth emerges from the ground, she may find neither corn nor cotton within a mile upon which to deposit eggs. Her flight is low, and her days are brief. The chances are that she will perish before reaching either of the plants upon which she and her young feed.

"The exposure of a mixture of molasses and cobalt, with a little vinegar, at the edge of a cotton-field, and nearest the corn from which they migrate in the latter part of July and first of August, would probably attract and poison large numbers of them. By carefully noting the time of their moving upon the cotton, it might be effective to send out early in the morning the whole force with paddles or little hand-nets, to walk abreast down the rows next the corn, and catch and kill them as they fly up. Where corn and cotton are adjacent, the moth settles in the first rows of cotton as soon as she leaves the other plant, and by patrolling these rows every morning, the most of the invaders might be destroyed.

"Another mode of overcoming the difficulty would be to provide other and more attractive pasturage for them than the cotton boll. This could be done by having a small field of late corn next the cotton, that would be in silk as late as the latter part of August or the first of September. The worm would not be likely to leave the corn for the cotton, until it was too late for him to work much injury.

"The same might perhaps be better attained by having rows of late corn, at intervals of twenty or thirty feet, through the cotton-field. This arrangement would be sure to draw all the moths late in the season to that field. Their cocoons would be buried in the soil, and by turning out that field to rest for a year or two, and transferring the crops to some distance, the race of boll-worms on that place might be exterminated."

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

PROPOSED FLOATING BRIDGE ACROSS THE HOOGHLY BETWEEN CALCUTTA AND HOWRAH.

No. 108 B—C, dated 24th February, 1870.

From—COLONEL R. STRACHEY, R. E., *Offg. Secy. to the Govt. of India*, P. W. DEPT.,

To—*The Secretary to the Government of Bengal, in the P. W. Dept.*

I am directed to acknowledge the receipt of Major Taylor's letter No. 46 G, dated 8th ultimo, relative to the construction of the proposed floating bridge across the Hooghly, and Mr. Leslie's superintendence of the work.

2. Premising that the recent orders of the Secretary of State have finally settled that the floating bridge shall be carried out in preference to a permanent fixed bridge, the first point that calls for remark is the agency under which the work is to be executed. The Hon'ble the Lieutenant Governor, in the letter now under reply, repeats the conclusions stated in his Minute of the 30th June 1869, that the Government should construct the bridge, and that it should neither be given to a Company, nor entrusted to the Calcutta Municipality, as suggested by the Secretary of State in reference to the fixed bridge. The Lieutenant Governor, while expressing his concurrence in the opinion to the above effect given by the Commission on the bridge, does not state the specific grounds that have led him to the conclusion beyond saying, as regards the Municipality, that the work is one which should be undertaken by the State rather than by a local body, who have no special interest in the matter, and whose general functions and constitution do not point them out as being particularly well adapted to undertake such a work.

3. Referring to the Report of the Commission, it is seen that no specific reasons are given for the conclusions arrived at, that the Government should construct it, and that it should not be given over to a Company.

4. On the best consideration that the Governor General in Council has been able to give to the matter, the conclusion of the Hon'ble the Lieutenant Governor and the Commission on this point appear to be sound. The grounds on which this is arrived at may be stated.

5. First, the Government of India agree with the Commission that if it be practicable, the bridge should be toll-free. The precise manner in which it is thought such a result might be secured will be mentioned hereafter, but under no circumstances does this seem compatible with the construction of the work by a private Company. Further, the Government of India fears that the risk of unforeseen claims for compensation, arising from the possible necessity for removing the bridge, or from any of the arrangements made with a Company, proving in practice to be incompatible with the proper navigation of the river, or (as in the case of the levy of tolls) with the convenience of the traffic passing over the bridge, is such as to render the intervention of a Company inexpedient if other equally satisfactory means of carrying out the work can be obtained.

6. The suggestions that have been made for removing objections of the sort last mentioned do not seem to the Governor General in Council to be satisfactory. His Excellency in Council by no means affirms that such a bridge as is now proposed will lead to any serious difficulties in its construction or maintenance, or interfere objectionably with the navigation of the river. But it is impossible to avoid the conclusion that if public inconvenience be caused in any way by the bridge, and if its construction be permitted by the Government, the Government will be so far responsible that they would be bound to see that immediate measures were taken for remedying such inconveniences; and doing

this might readily involve heavy pecuniary liabilities. The suggestions of Mr. Leslie as to the terms on which the bridge, if made by a Company, could be taken possession of by the Government, do not appear to meet the point in a sufficient way.

7. The Government of India would have been glad if the requirements of the case had been compatible with the acceptance of the offers of private capitalists to carry out the undertaking without Government interference. But in the nature of the case, it seems impossible to accomplish such a result, and on a full consideration of the circumstances, the conclusion seems unavoidable, that the Government should construct the bridge itself.

8. The Governor General in Council continues to be of opinion that the general management of the bridge during its construction, as well as after it is opened, may best be handed over to a Trust, something of the nature of that about to be constituted for the improvement of the Port of Calcutta. It appears to His Excellency in Council, indeed, that there is no reason why the same body of Commissioners should not manage the bridge and the port improvements; it being understood that an entirely separate account would be kept for the bridge, which should financially be considered as altogether a distinct undertaking, a special Commissioner being perhaps added in the case of the bridge, in the interest of Howrah. The Office establishments and subordinate establishments, &c., of the Commissioners would be perfectly suited for the purposes of the bridge, and the engineering operations would, to a great extent, be alike in the two cases.

9. Such an arrangement would not, it appears to His Excellency in Council, at all interfere with the proposed employment of Mr. Leslie as Engineer for the bridge. Under any circumstances he must communicate with the Lieutenant Governor through some established Office, and the intervention of the Commissioners would not seem to be likely to lead to inconvenience, and would have some positive advantages.

10. It has already been explained to the Lieutenant Governor that the Government of India is not in a position at the present moment to offer continued employment to Mr. Leslie. It would consequently appear to be the best plan to make an arrangement with him, by which his remuneration should be fixed for the completion of the whole work in a lump sum. The Government of India would not object to the time during which he might be employed on the bridge being eventually reckoned as service under Government, should it be found possible to take Mr. Leslie into the service of the Government permanently on the completion of this work. Any arrangement that may be suggested by the Government of Bengal for giving effect to the above suggestion will receive immediate attention.

11. The Governor General in Council would have been unable to enter upon any question of specially allowing time to Mr. Leslie for pension, had he entered the service of the Government, for reasons which have been explained in reference to the claims of like nature made by officers of the East India Irrigation Company.

12. As to the amount of salary to be proposed to Mr. Leslie, the Government of India thinks that a sum equivalent say to 2 years' salary on a liberal scale might be named, a portion to be paid as the work went on, and the balance on completion. In this sense a total sum of £4,000 might be now suggested as suitable, it being left to the Hon'ble the Lieutenant Governor to modify the offer as he thinks fit, the final approval of the Governor General in Council being reserved to anything in excess of that amount.

13. It will no doubt be necessary to communicate with the Board of the Eastern Bengal Railway as to Mr. Leslie's undertaking the work of the bridge. Any plan that is agreed to by the Board, and supported by His Honour, is likely to receive the assent of the Government of India, and the further steps to be taken in this matter are left to the Hon'ble the Lieutenant Governor.

14. When an arrangement has been come to with Mr. Leslie, his advice might properly be taken as to the precise mode of proceeding further in respect to the preparation of designs and estimates, and setting about the execution of the works by contract or otherwise.

15. It only remains for me to refer to the financial part of the question. The Government of India, on a further consideration of the matter, is disposed to think that the needful security for the payment of Interest on the capital required, which would be advanced by the Government of India, and the necessary contributions to a Sinking Fund may be very conveniently obtained by placing a charge on the passengers and goods traffic of the East Indian Railway leaving and arriving at Howrah. A suggestion of this sort, it is understood, has been made by Mr. Leonard in an unofficial form, and there is reason to believe that the plan would be agreed to by the Railway Company.

16. The Governor General in Council is informed that a very small terminal charge on the Railway passengers and goods, which would fully meet all probable requirements for the bridge, would be less onerous than the actual existing cost of crossing the river by the East Indian Railway Company's steam ferry. The convenience of a free bridge to the passengers and goods seeking or leaving the Howrah Station would be very great, and the advantage would be felt alike by the Railway Company and its customers. The Railway Company might properly be paid a moderate percentage on the terminal rate which they received for the Bridge Trust.

17. It would, however, be right to consider at the same time whether a charge should not be put on carriages and carts crossing the bridge, not going to or from the Railway Station. It is believed that by a very simple arrangement the Railway Station traffic could be led from or to the bridge on the Howrah side of the river, by a different road to that used by the Howrah town traffic, and a toll could be put on the latter at a place far enough removed from the bridge, to prevent all risk of obstruction by the stopping of carts, &c., while paying toll. The Governor General in Council would be disposed to permit the foot passengers to cross free, if on a further calculation the income was thought likely to be sufficient without making such a charge.

18. In order to be prepared for all eventualities, however, His Excellency in Council thinks it will be better to take power to put tolls on the bridge or its approaches, as well as to levy the Railway terminal charge. It might also be considered whether a power should not be taken to commute the Howrah toll for a payment to be made from the Howrah Municipal Fund. These are points left for the consideration of His Honour the Lieutenant Governor.

19. A Legislative enactment may probably be found necessary to give effect to the conclusions come to, both as to the levy of tolls, &c., and the constitution of the Special Trust, and the disposal of surplus funds. Also, perhaps, some powers may be needed in respect to the erection of the bridge, and the obstruction it will cause in the river, so as to guard against risk of claims for compensation, based on real or alleged inconveniences to individuals or damage arising from accidents. This should be considered.

20. In conclusion, I am to observe that the views of the Governor General in Council on some of the points above noticed have been now stated in detail, with the object of facilitating an early decision as to the basis on which the construction and management of the bridge is to be placed, but the Hon'ble the Lieutenant Governor is requested to understand that the Governor General in Council has no desire to prejudge the questions that have been discussed, and will be glad if His Honour will favour the Government of India with any further remarks or suggestions on any point relating to any part of the subject, which are deemed likely to lead to an early and satisfactory settlement of the matters now calling for attention.

REDUCTION OF THE ORDINARY GRANT FOR PUBLIC WORKS.

No. 1, dated 4th January, 1870.

From—The Secretary of State for India,
To—The Government of India.

I have had under consideration in Council your Excellency's Despatch No. 134 of 27th September last, wherein are detailed certain arrangements in the Public Works Department deemed advisable for bringing the revenues and expenditure of India into early and permanent equilibrium.

2. It may be almost superfluous in replying to this Despatch to premise that the general views and sentiments expressed in it have my cordial concurrence. The paramount force of the financial necessity to which your Excellency appeals in justification of the course proposed to be pursued seems to me scarcely to admit of dispute, and your Government may rely on my earnest co-operation in enforcing whatever economy that necessity may enjoin.

3. I approve, too, with little more reserve, of the particular measures which your Government have in contemplation in order to give effect to their views on this important subject, and, by means of which, what may be taken as the normal expenditure out of revenue on public works ordinary may in future be reduced from about five and three-quarter millions to about four and a half millions sterling a year. It cannot indeed be otherwise than matter for regret that the prosecution of undertakings highly conducive in various ways to the well being of the country should be sensibly delayed, but progress of any kind must be dearly purchased at the cost of serious financial embarrassment, and I am, besides, very willing to believe with your Excellency, that with regard to one of the classes of work which the proposed reductions will affect the delay will be more apparent than real, and that, with regard both to it and to another class, some diminution in the recent rate of speed may be amply compensated by improvement in the mode of carrying on the works. If there be good grounds for the conviction entertained by your Government, that the system upon which barrack building has of late proceeded is susceptible of modifications which would allow of equal substantial advantages being afforded to the troops at greatly diminished cost, not only large pecuniary saving, but much earlier completion of the work may, as you say, be expected to result.

4. If, again, the impossibility of continuing the old rate of outlay upon roads from the national treasury should cause, as your Excellency appears to expect, the charge of road construction and road maintenance to be transferred from imperial to local funds, financial pressure will have hastened the adoption of another administrative reform which has long been recognized as very desirable.

5. In connexion with barrack building, I observe with satisfaction that it is by omission of superfluous items of construction, and by changes in the geographical distribution of the army, that the chief saving in that respect is to be effected. The language uniformly used by your Excellency in discussing this part of the subject shows how strongly you feel that any diminution of the accommodation really required by the troops would be the reverse of true economy.

IRRIGATION OPERATIONS OF KUSL-RUBBEE IN THE PUNJAB UP TO 31st DECEMBER 1869.

CANAL DIVISIONS.	WATER DISTRIBUTED DURING DECEMBER. Depth in Canal as Regulating Gauge. Full Supply.	Actual throughout December.	Gross Consumption C. Ft. per Second. Estimated Full Supply.	Actual Average throughout December.	NAVIGATION. Principal Traffic. Up.	Down.	LAND IRRIGATED (APPROXIMATE). Zillah.	Acres.	RAIN-FALL. Average.	During Month.	CHIEF CROPS (APPROXIMATION). Name.	Area.	REMARKS.
1st Division ...	4·9	2·9	...	628·24	...	...	Goordaspoor	14,381	0·2	0·1	Barley ...	4,643	258·22 C. ft. per second escaped.
2nd " M. B. Lower ...	4·6	1·54	307·6	344·15	...	...	Umritsur ...	33,791	...	0·0	Mixed grain	8,118	
" Lahore Branch ...	3·3	2·55	...	477·31	...	...	Lahore ...	18,210	...	0·0	Wheat ...	43,830	
											Others ...	9,791	
TOTAL B. D. CANAL ...	...	...	...	...	...	...	...	66,382	...	...	...	66,382	
Kurnaul Division ...	4·33	3·59	...	252·	...	79,179 Bullies, Kurrees, Planks, &c.	Umballa ...	974	0·71	0·58	...	...	42·16 C. feet per second passed down the Boodha Khera escape.
Delhi " ...	4·4	3·94	...	684	...		Kurnaul ...	36,722	0·72	0·0	...	...	
Hansi " ...	8·8	7·8	...	694	...		Delhi ...	29,385	...	...	Barley ...	925	
" Bulls Head ...	8·4	7·6	2546	250	...		Rohtuck ...	27,039	...	...	Mixed grain	17,389	
			...		...		Hissar ...	27,270	0·58	0·0	Wheat ...	112,211	
							Jheend ...	15,145	...	...	Others ...	6,260	
							Bikaneer ...	250	...	...	...	...	
TOTAL W. J. CANAL ...	...	...	...	...	...	...	...	136,785	...	...	...	136,785	
Upper Sutlej Division ...	...	...	...	...	...	...	...	12,063	...	...	...	...	The areas entered as irrigated by Inundation Canals are very rough approximations, there being no Revenue Establishment as on Perennial Canals.
Lower Sutlej and Chenab ...	...	...	...	...	...	...	...	21,400	...	...	Wheat ...	34,000	
Indus Canals ...	...	...	...	...	...	...	...	33,900	...	...	Others ...	33,363	
TOTAL INUNDATION CANALS ...	...	...	...	...	...	...	...	67,363	...	...	...	67,363	
DELHI AND GOORGAON WORKS ...	...	...	...	...	...	...	Delhi ... Goorgaon ...	565	...	...	Barley ...	526	
								2,225	...	...	Wheat ...	1,700	
											Others ...	564	
TOTAL DELHI & GOORGAON WORKS ...	...	...	...	...	...	...	...	2,790	...	...	...	2,790	
GRAND TOTAL ...	...	...	...	...	...	79,179	...	273,320	...	...	...	273,320	

W. BROADFOOT, *Lieut., R.E.,*
Asst. Secy. to Govt., Punjab, P. W. D., Irrigation Branch.

LAHORE,
The 16th February 1870.

GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 25th February 1870.

PRESENT:

The Hon'ble G. Noble Taylor, Senior Member of the Council, *presiding.*
Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble Gordon S. Forbes.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey, C. S. I.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
The Hon'ble F. R. Cockerell.

COURT FEES BILL.

The Hon'ble MR. COCKERELL presented the second Report of the Select Committee on the Bill to provide for the better regulation of Court Fees.

OBSOLETE ENACTMENTS BILL.

The Hon'ble MR. STEPHEN, in moving for leave to introduce a Bill for the repeal of certain obsolete enactments, begged leave to make a few remarks on the principle involved in the Bill, inasmuch as it was part of a general scheme on which he should like to offer a few explanations. So long ago as the year 1797, it was enacted by the Statute 37 Geo. III, c. 142, s. 8, "that all Regulations which shall be issued and framed by the Governor General in Council at Fort William in Bengal, affecting the rights, persons, or property, of the Natives, or of any other individuals who may be amenable to the provincial courts of justice, shall be registered in the Judicial Department, and formed into a regular Code, and printed, with translations, in the country languages, and that the grounds of each Regulation shall be prefixed to it." He (MR. STEPHEN) was sorry to say that, except to a very limited extent, that provision had never been carried into effect. The exception to which he referred was the case of Bombay. The Bombay Regulations were in 1827 formed into a Code, which had many merits. There was no scheme under the consideration of the Government as ambitious as that which was suggested by the Statute to which he had referred, but the present Bill was part of a scheme for carrying into effect the more modest intention of consolidating and re-arranging the written law of India. The process of consolidation was now thoroughly understood, and had been carried to a considerable extent in England, but its importance here was, if anything, even greater than in England. It might be thought that any extensive scheme of legislation in India required an apology. A great deal had been said of late, both here and in England, on the evils of over-legislation in India, and there could be no doubt that every needless or ill-considered act of legislation was an evil; but he thought that, if the subject were carefully looked into, it would appear that the accusation made against the Indian Government of legislating too much was unjust, although there was some justification for the charge that their legislation was intricate and ill-arranged. Nothing, however, could be more natural than that persons who had not studied the subject carefully should suppose that there was too much of it. When people saw four separate Legislative Councils sitting for a great part of the year and passing a

large number of laws relating to every sort of subject, it was natural enough to speak of over-legislation, and to say that it was time that the process should be arrested. With regard to such remarks, there were several matters to be taken into consideration, which people were very likely to overlook. In the first place, it was easy to under-rate the demands of so vast a territory, and in the second place it was still more easy to confound the apparent with the real additions made by legislation to the body of law actually in force. If any one took the trouble to look closely into the matter, he would find that, so far from the whole body of law being rapidly increased by current legislation, a very large proportion of the enactments tended to diminish the number of laws. The work done was rather the adaptation of old laws to fresh circumstances, than the production of new ones. He (MR. STEPHEN) could hardly give a better illustration of this than the Court Fees Bill, the second report on which Mr. Cockerell presented this day. That Bill certainly, in one sense, was an addition to the law: it would put one new Act into the statute-book, but it repealed six Acts entirely and thirty others partially, and the consequence was that the effect would be, not to increase, but to diminish, the existing body of law on the matter. The process to which he referred, when thoroughly carried out, would result in this, that all Acts which related to the same subject, at least which related to subjects of importance, would be thrown each into one statute, and the repealed Acts and the enactments by which they were repealed would be omitted from the collection of statutes. If a distinction were made between Acts of local and Acts of general application, if the Acts which referred to British India generally were put into one collection, and if all those portions which related to separate provinces were separately published, the real extent of the law would be found to be far smaller than was supposed; the law itself would be rendered far more intelligible, and people would no longer be at a loss where to look for the information which they required. The advantages in fact of such an operation would be so great and obvious that he did not think it necessary to dwell on them.

He would now proceed to point out the reasons which made it specially desirable that the task in question should be undertaken. He did not think that the nett amount of the written law of the country was very large—it was rather, he thought, exceedingly small—when you took into consideration the number of provinces to which those laws related, their great extent, and the variety of circumstances in which they were placed. No doubt, however, the absence of an arrangement of the laws was a great evil, and few persons who had not specially directed their attention to the subject, had any idea of the extent of intricacy in which the written law of India was involved. He (MR. STEPHEN) would go into a short detail on this point, with the object of stating, for the information of the Council and of the public, what the actual state of the written law of British India was. The English Government had not enacted any written laws in India with which we need now concern ourselves before 1792, at which time began the Bengal Regulations made by the Governor General in Council. The Madras Regulations made by the Governor of Madras in Council date from 1802; the Bombay Regulations from 1827. Those Regulations applied to the Provinces in which they were made, and were the first of a series of repositories in which the written law of India was contained. They came down in each case to the year 1834. There, therefore, we had three bodies of local law, each separate and independent, affecting respectively the Presidencies of Bengal, Madras and Bombay. But the Bengal Regulations had a wider operation, because, as new Provinces, previously independent, were brought within the Empire, in some instances the Regulations themselves, and in other instances what was called the spirit of the Regulations, was extended to them; and the effect had been that those Regulations not only extended over Bengal, but also, to a somewhat indefinite extent, over the Non-Regulation Provinces.

In 1834, when the Charter of the East India Company was extended for the last time but one, power was given to the Governor General in Council

to legislate for the whole of British India, and the power to legislate, which the Governments of Madras and Bombay previously had, was taken away. The Act of 1834 was the foundation of the present Legislative Council; and from that date to this, although great modifications were introduced in 1853 and 1861, the laws affecting the whole of British India had been passed in this Council. But besides these laws, passed for the whole of British India generally, from 1834 to 1870, a large number were passed by the Legislative Council between 1834 and 1861 for the Presidencies of Bengal, Madras and Bombay, which during that period had no legislative bodies of their own; and therefore we got, besides the three bodies of law already referred to, four sets of Acts,—those relating to the whole of British India, those relating to Bengal, those relating to Madras, and those relating to Bombay, passed by the Governor General of India in Council in his legislative capacity. In 1861 was passed the Indian Councils' Act, under the authority of which legislatures were established for Bengal, Madras and Bombay. The Governor General in Council, sitting as a legislative body, continued, and had since continued, to legislate for the whole of British India; but, with some exceptions, the Governor General's Council had not legislated specially for Bengal, Madras or Bombay. On the other hand, it had legislated for the North-Western Provinces, and for the Non-Regulation Provinces, which included the Panjáb, Oudh, the Central Provinces and British Burma. In the interval between 1834 and 1861, the Regulations made for these Non-Regulation Provinces were made by the Governor General in Council acting in his executive capacity. These executive orders did not appear in any statute-book. The 25th section of the Indian Councils' Act recited doubts as to the validity of these orders, but confirmed those which were then in existence. This provision had been interpreted as prohibiting the Government from making them for the future. Since 1861, the three subordinate legislatures had legislated for their own Provinces, and the general result was this, that we had, as written law, first, the English Acts of Parliament relating to India; secondly, three sets of Regulations from 1792 to 1834; thirdly, the legislative Acts of the Governor General in Council, which might be divided into the Acts relating to British India, the Acts relating to Bengal, the Acts relating to Madras, and the Acts relating to Bombay; then the Acts relating to the Non-Regulation Provinces, namely, the North-Western Provinces, the Panjáb, Oudh, the Central Provinces, and British Burma, passed since 1861. There were, besides these, the Acts of the local legislatures of Bengal, Madras and Bombay, passed since 1861 and in force in those provinces. And in addition to all these, we had the executive orders for the five Non-Regulation Provinces, passed at various periods before 1861. The nett result of the whole was that, including the English Statutes, there were no less than twenty-one different classes of laws prevailing in different parts of British India, and these twenty-one classes of laws were made by eight different authorities.

The following statement exhibited the whole matter in a compendious form:—

There were in force in—

I.—British India—Acts of Parliament		1
	Acts of Legislative Council of Governor General since 1834	2
II.—Bengal—Bengal Regulations, 1792—1834		3
	Acts of Legislative Council, 1834—1861	4
	Acts of Bengal Legislative Council, 1861—1870	5
III.—Madras—Madras Regulations, 1802—1834		6
	Acts of Legislative Council, 1834—1861	7
	Acts of Madras Legislature, 1861—1870	8
IV.—Bombay—Bombay Regulations, 1827—1834		9
	Acts of Legislative Council, 1834—1861	10
	Acts of Bombay Legislature, 1861—1870	11
V.—N. W. Provinces—Executive Orders to 1861		12
	Acts of Legislative Council, 1861—1870	13

VI.—Panjáb—Executive Orders to 1861 14
Acts of Legislative Council, 1861—1870 15
VII.—Oudh—Executive Orders to 1861 16
Acts of Legislative Council, 1861—1870 17
VIII.—Central Provinces—Executive Orders to 1861 18
Acts of Legislative Council, 1861—1870 19
IX.—Burma—Executive Orders to 1861 20
Acts of Legislative Council, 1861—1870 21

These twenty-one classes of laws were made by the following authorities:—I—Parliament, II—The Governor General in Council (for Bengal), III—The Governor of Madras in Council, IV—The Governor of Bombay in Council, V—The Legislative Council of Governor General, VI—The Legislative Council of Bengal, VII—The Legislative Council of Madras, VIII—The Legislative Council of Bombay, IX—The Governor General in Council in his executive capacity.

That, certainly, if we regarded the whole result, was an extremely complicated state of things; but if we bore in mind the extent of the territory legislated for, the number of the provinces and the differences of every kind between their various populations, it was not a great but a small extent of written law. He might add that, if anybody thought that the amount of written law in India was too great, he might console himself with the reflection that we hardly possessed any substantive law at all, as distinguished from laws relating to procedure, applying to the whole of British India, with the exception of the Penal Code. The Indian Succession Act related only to Europeans. We had no general law relating to contracts, no law relating to torts, very little law relating to evidence, and no general law relating to insolvency. Those who thought that enough had already been done, should recollect that those immense heads of law were quite untouched by the legislature, and matters relating to them, where the English law did not prevail, were decided according to the dictates "of justice, equity and good conscience," which meant, in practice, according to the notions which the Judges formed from a few English text-books.

That was the state of things, and that being so, he thought that, on the one hand, the Government ought to be acquitted of having done too much, and, on the other hand, that it ought to be remembered that the course of events had produced a singular and exceedingly intricate state of things, which we ought to reduce as soon as possible to comparative consistency and simplicity. A great deal had already been done, though, for want of judicious arrangement, the fact was not apparent. There never was any authentic collection of the whole written law of British India. Some parts of the written law of India, and in particular the executive orders in force in the Non-Regulation Provinces, had never been collected at all. From time to time, collections had been made of large parts of it under the authority of Government, but there was no book which professed to be a complete compilation of the law, like the English statute-book. Enough had, however, been done to give a good notion of the extent to which the process of repeal and consolidation had been carried.

In 1854, there was published a collection of the Bengal Regulations and Acts, then in force, by Mr. Clarke of the Madras Civil Service, under the authority of the Government. That collection filled three quarto volumes, and contained the whole of the Bengal Regulations and the Acts of the Governor General in Council from 1834 to 1853. Of those three volumes of Acts, then in operation, MR. STEPHEN believed that not half a volume was now in force.

By Acts X of 1861, XVII of 1862 and VIII of 1868 nearly the whole of the Bengal Regulations had been repealed, except those which related to particular subjects, such as Revenue, the Management of Wards and Pensions.

The same was the case, to an even greater extent, with the Madras Regulations, a vast mass of which had been swept away by Madras Act II of 1869. The same process had been going on with respect to the Acts of the

Legislative Council. Every one who had occasion to administer the law of this country was acquainted with the collection of Acts published by Mr. Theobald. That collection consisted of five volumes, with a small additional part. He (MR. STEPHEN) had before him the first of these volumes, which contained the Acts from 1834 to 1848. He had been looking through the volume, in which the repealed Acts were struck out, and, of the Acts passed between 1834 and 1848, there were very few of any general interest or importance in force.

The whole of the Acts now in force, passed during the first forty years of English legislation in India, would go into a very small compass indeed; and it must be remembered that the process had been carried out only recently, because the volume which he held in his hand was published in 1860, and omitted the Acts which had then been repealed. All those Acts had therefore been repealed since, and a very large proportion of them within the last two years. He was not in a position to say to what extent the process had been carried out, but if all the repealed matter and repealing Acts were left out of these five volumes, they would be reduced to a very much smaller compass; and he might further add that, if the contents of that residuum were divided according to the local application of the Acts, it would be found that that comparatively small remainder of unrepealed law contained parts of nine different statute-books. It contained, on the one hand, the whole statute-law (except English Acts of Parliament) which was in force in British India generally; it contained all the laws passed since 1861 which applied to the five Non-Regulation Provinces, and it contained the laws—a very considerable number—which applied to Bengal, Madras and Bombay respectively. If, therefore, you were able to repeal the laws that were really useless, and to divide those which were of use into nine different classes, one for British India generally, one for Bengal, one for Madras, one for Bombay, one for each of the five Non-Regulation Provinces, you would see that the real written law of India was reducible to a very small compass indeed. He would add that many parts of it were arranged in as scientific a manner, and drafted in language as clear and terse, as any body of law in the world.

The present Bill was intended as a step towards the reduction of this intricate state of things to order. The Council would naturally ask, how that task was to be performed, and what part the Legislative Council would be asked to take in it? The answer to that was short and simple. Four things were necessary;—first, to repeal all useless matter; secondly, to consolidate the different Acts relating to the same subject; thirdly, to re-arrange the Acts, if possible, according to their subject-matter, certainly according to their local application; and, fourthly, to ascertain from the Non-Regulation Provinces what Acts and Orders were there in force, and to publish them in an authentic form. You would then have a complete body of written law divided according to subject and place. A considerable part of that operation would be matter of mere executive detail. As he had already said, there was no one authorised statute-book to which every one must refer; but although there was no book of that kind published under the authority of Government, books such as those prepared by Mr. Clarke and Mr. Theobald had repeatedly been published, and were indispensable to the administration of justice. It was a matter for the discretion of those who published such books how they should be arranged. The authority of the legislature would be required to repeal and consolidate, and to put on a satisfactory footing the executive orders having the force of law in the different Non-Regulation Provinces. Many considerations, one of which was the state of the finances, must influence to a considerable extent the time in which any scheme of the kind could be carried out. He held out no hopes of any rapid execution of it, but he (MR. STEPHEN) thought that we should look to the ultimate attainment of such a result, and that we should do something towards it, first by repeal, secondly by consolidation, and thirdly by obtaining an account of the different executive orders in force in the Non-Regulation Provinces. These orders had never, so far as he knew, been collected, and

there was considerable difficulty in ascertaining what they were. Government had, however, in May last, taken steps to have them collected and published; and in the Panjáb, Oudh, the North-Western Provinces, and, he believed, the Central Provinces, considerable progress had been made in the work. Many of these executive orders related to matters of the highest importance; as an instance he might refer to the Civil Code in the Panjáb: it was in point of law a mere executive order, but in point of fact it was an attempt, and by no means an unsuccessful one, to solve a problem with which the Government of India had not yet ventured to grapple. When we once had all these orders collected together, it would be possible to define the extent of their operation, and to do away with a great deal of uncertainty as to the extent to which other Regulations applied to those provinces.

That was the general scheme of which this Bill formed a part, and he hoped to be in a position, at no distant date, to lay before the Council a list of the enactments which it was necessary to repeal, as a first step towards the completion of a task which would be brought to a termination as rapidly as the state of business and other considerations would permit.

The Motion was put and agreed to.

The Council adjourned to Friday, the 4th March 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl.
for making Laws and Regulations.

CALCUTTA,
The 25th February 1870.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 11 of 1870

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, MARCH 12, 1870

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GOVERNMENT OF INDIA

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP 67

The Council met at Government House on Friday, the 4th March 1870.

PRESENT

Major General the Hon'ble Sir H M Durand, C B, K C S I, Senior Member of the Council, *presiding*
His Excellency the Commander-in Chief, K C B, G C S I
The Hon'ble John Strachey
The Hon'ble Sir Richard Temple, K C S I
The Hon'ble J Fitzjames Stephen, Q C
The Hon'ble Gordon S Forbes
The Hon'ble D Cowie
Colonel the Hon'ble R Strachey, C S. I
The Hon'ble Francis Steuart Chapman
The Hon'ble J R Bullen Smith
The Hon'ble F R Cockerell

COURT FEES BILL.

The Hon'ble MR COCKERELL moved that the second Report of the Select Committee on the Bill to provide for the better regulation of Court Fees be taken into consideration He said that the effect of the amendment which was carried when this Bill was last under discussion, was to postpone the consideration of the Select Committee's first report thereon, there were consequently two reports before the Council He did not, however, on the

present occasion, propose to make any further reference to those provisions of the Bill which were embraced in the former report, but would confine his remarks to a brief statement of the reasons for adopting the additional amendments which had been introduced into the Bill since its re-committal.

At the suggestion of his hon'ble friend, Sir Richard Temple, the provisions of section 7, clause v, paragraph (*c*), had been made more comprehensive. As was justly remarked when this subject was last before the Council, there were estates or tenures not included in the term inám, which, as regarded the principle and measure of their revenue-assessment, were not very dissimilar to 'inám' lands, and seemed to require the application of the same rule in regard to the valuation of suits relating to such property. For instance, in the Lower Provinces of Bengal, it had been the almost universal practice, on the resumption of land which had escaped assessment at the general settlement of estates in its vicinity, to admit the holder of such land to engagement for the payment of the Government-revenue at half the customary rate of assessment; and this lenient settlement had been accorded, not with any reference to the productive character of the land, but in satisfaction of such equitable rights as the holder might be considered to have in virtue of his long possession of the land free from the payment of revenue. In such cases, no less than in that of inám-land, the amount of the revenue-assessment afforded no fair criterion of the value of the land; it was therefore thought expedient to substitute, for the term 'inám,' such general words as would embrace all estates and land subject to the direct payment of Government-revenue, but assessed at rates more or less below the full normal demand.

The Bill, as first amended, imposed a fixed charge of ten rupees on suits relating to rights of pre-emption, and the specific performance of a contract. In the case of the former class of suits, the effect of that provision would be to reverse the existing practice, under which such suits were assessed according to the value of the property regarding which a right of pre-emption was claimed. Further consideration of the matter had led to the conclusion that this practice was in accordance with the principle adopted throughout the Bill, that the valuation of suits should be regulated by the value of the subject-matter actually in dispute, and should therefore be maintained. In the cases referred to, the subject-matter was in fact the possession of the property which the litigants claimed a right to purchase, and the application of the above-mentioned principle to such cases was in no way barred or affected by the circumstance that one or other of the disputing parties had to pay a certain amount to some third person as a preliminary condition to obtaining the actual possession of the property to which the suit had reference. So, also, in respect of the various descriptions of contracts forming the subject of a suit to enforce specific performance, it could not correctly be said that the litigated matter had no appreciable market-value. The fixed charge formerly proposed was therefore thought inapplicable to this class of suits, and provision was made in section 7, clause x, of the re-amended Bill for substituting an *ad valorem* rate, regulated by the estimated value of the interest involved in the contract.

There was a property, or interest in land, the owner of which was in certain parts of the territories under the Government of the Lieutenant Governor of the North-Western Provinces termed an Ubáridár, and in other parts of India was known under various designations, for the litigation of whose rights no specific provision was made in the former Bill. The person in whom this interest was vested could not be said to have possession of the land out of which the interest arose. His position was rather that of a farmer or assignee of the Government-revenue payable in respect of the land in question; hence a suit affecting his rights would not come within the provisions of section 7, clause v: and even were this not so, there would be the same objection to make the amount of the revenue paid to Government

by such person the basis of the valuation of a suit relating to his interest, as had been shown to apply to this mode of valuation in the case of inám-land; for the revenue which the Ubáridár, or other person above referred to, paid to Government bore no adequate proportion either to the value of the land to which his interest related, or to the amount which he received from the persons in possession of such land, with whom the revenue-settlement had been effected. It was proposed therefore to apply the rule of section 7, clause v, paragraph (*c*), to this class of cases.

It was considered expedient that the sanction of the Governor General in Council should be required to validate the rules to be framed, under chapter IV of the Bill, for regulating the strength and cost of establishments, as well as the amount of the fees to be levied, for serving the processes issued out of the several courts. Imperial control was deemed essential to the well-working of the new system, the effect of which was to make the cost of serving processes a charge upon the general revenues. The difficulty which at first sight seemed likely to arise out of the habitual exercise of this power of control in regard to the numerical strength of the establishments to be employed in serving processes might be obviated, it was thought, by framing the rules so as to admit of fluctuations in the number of peons entertained from time to time, without the necessity of a reference to the Supreme Government in the case of every temporary increase.

As regards the determination of the description of stamp to be used for the purposes of this Bill, it had been strongly urged that the authority of the Governor General in Council should be substituted for that of the Local Governments. The stamps in use were for the most part supplied from England, and uniformity as to the style of stamp to be adopted was essential to their economical provision. The proposed change was needed, therefore, to guard against the increased expenditure which would be not unlikely to result from a divided control in this matter.

Heretofore, summary suits to recover possession of property from which the suitor had been forcibly ejected, and applications to a civil court for the enforcement of a specially registered bond or agreement, had been subjected to one-fourth only of the rates of fees leviable on the institution of a civil suit. It was thought that this privileged rate might now be fairly raised to one-half of the ordinary rates. The scale of fees imposed by the Bill afforded, in itself, such a material concession in favour of litigants for small amounts—and suits of the classes referred to usually involved only an inconsiderable amount or value—that the further retention of the one-fourth rates was held to be unnecessary. Moreover, great practical inconvenience must be anticipated in the operation of a scale of fees which would embrace several denominations, including the fractional parts of an anna.

It was at first proposed to substitute, for the fixed fee heretofore chargeable on applications for a review of judgment, an *ad valorem* fee of one-eighth of the ordinary rates leviable on the institution of a suit. The chief object of this change was to discourage the institution of such applications on frivolous or insufficient grounds. It had been represented that the practice of seeking to obtain a re-hearing of the suit in this way, on grounds not contemplated by the law, was greatly on the increase; and that the time of the courts was needlessly wasted thereby, the mere loss of the small fee paid on such applications being altogether insufficient to check their improper presentation. The Committee had since been advised on high authority that one-eighth only of the full *ad valorem* rate was far too inconsiderable an alteration of existing charges to secure the object in view, and that the fee in such cases should certainly not be less than one-half of the ordinary rates leviable on the institution of a suit. When it was borne in mind that, under the operation of section 15 of the Bill, the ultimate incidence of this enhanced fee on the applicant was restricted

to cases in which the application for a re-hearing was not warranted by the circumstances in which it was made, the increase now proposed seemed unobjectionable.

On suits coming under the Pársí Marriage and Divorce Act, an institution fee of thirty-two rupees was levied, whilst the fee on suits brought under the later Indian Divorce Act was fixed at only five rupees. As there was no marked disparity in the circumstances of the persons affected by these enactments, and the subject-matter of the suit was the same, the distinction in the amount of fee imposed by either enactment was only to be accounted for on the supposition that these fees were determined very much at hazard, and were certainly not regulated by any fixed principle. One of the useful results of the present attempt to consolidate the law on this subject had been the bringing to notice of inequalities of this kind, and the opportunity thus afforded for their rectification. The first proposal was to equalize these fees by reducing the higher to the level of the lower rate. Since the publication of the amended Bill, however, it had been pointed out that, with regard alike to the importance of the cause, the time occupied by the courts in its adjudication, and the circumstances of the general class of persons concerned, a fee of five rupees was far too low. It was proposed therefore to substitute the mean rate of rupees twenty for the different rates now in force.

A slight alteration had been made in section 22. As originally drawn, it provided for the specific apportionment of the number of peons to be employed in each court subordinate to a District Court, for serving the processes issued out of such courts. The Committee had since learned that the local High Court had in contemplation some new scheme for the remodelling of process-serving establishments, and that the above-mentioned provision of section 22 was regarded as likely to obstruct its operation. It was not, he (MR. COCKERELL) thought, quite clear that any difficulty would have been created by the adoption of the provision referred to in its original shape; but to remove all doubt on the subject, the words which might be construed as necessitating the maintenance of distinct establishments of process-servers in each civil court had been omitted.

There were other minor alterations which did not call for special notice.

The consolidation of the law relating to court fees, which was a prominent feature of the Bill, had been matured by the transfer of several provisions of other enactments, and there was good reason to believe that, in this respect, the measure was now as complete as possible.

The Hon'ble MR. CHAPMAN desired to make some general remarks on the alterations that had been made in Chapter IV, relating to process-fees. For his own part he should have wished that these funds had been kept, as heretofore, quite separate from the imperial revenues, and maintained on a self-supporting basis. But it had been decided that these fees should merge into the imperial exchequer. Such being the case, he was prepared to admit that it was necessary the Financial Department should have the same control over all disbursements from them as they had over ordinary public charges. He (MR CHAPMAN) wished he could think this control would be exercised in a generous spirit and in a comprehensive manner. Judging from the past practice of the Department he believed there was no chance of its being so exercised. He feared that, ere long they should hear complaints from the High Courts and others charged with the administration of justice of the inefficiency of these establishments both in respect to numbers and pay. It seemed to him that it would be particularly hard on suitors who were ready to pay liberally for honest and efficient service, to have their interests jeopardized simply because the Financial Department would insist on employing an insufficiently paid agency. He considered his Hon'ble friend Sir Richard Temple to be placed in a very unenviable and even unfair position in respect of the control over establish-

ments he was called upon to exercise. He was in charge of the State caldron—a vessel of limited capacity; and he was surrounded by a clamorous crowd of hungry applicants, each of whom was pushing forward his plate and 'asking for more.' Some of these, perhaps the most diffident and not the least deserving, he silenced in a summary manner, and to others, and generally the most noisy, he doled out a spoonful. Now he (MR. CHAPMAN) ventured to think it was not the proper way to deal with this crowd in this indiscriminate manner. He would muster them in regular order, separate the honest, hard-working, able-bodied men from the idle, useless hangers-on; give the former their fill, and once for all send the latter to the right-about. In other words, what he (MR. CHAPMAN) thought was very necessary in the present day, was a thorough, independent revision of establishments. Such a revision should be conducted by competent officers, well versed in each of the separate branches of the administration, and made after full local enquiry. It was expecting too much from human nature to ask the Departments to reduce themselves. The kind of supervision that was now exercised at the head-office in Calcutta, by men necessarily ignorant of the local requirements of the different parts of this vast empire, and unacquainted with the working of the different Departments, consisted in cutting down and, if possible, negativing each separate application for an increase. He (MR. CHAPMAN) believed they were most indefatigable in their efforts in this direction, and yet, in spite of their exertions, charges were steadily increasing to an alarming extent. He entertained the belief very strongly that there was not a single branch of the administration in which vast savings might not be made, and that, too, without any sacrifice of efficiency. He believed that it was only by such thorough scrutiny as he had suggested that retrenchment could be effected and economy enforced. And entertaining this belief, he was glad to have had this opportunity of expressing it

The Hon'ble SIR RICHARD TEMPLE said—"Sir,—I am sure that the Council will excuse me if I refrain from following my hon'ble colleague (Mr. Chapman) into the points which he has just adverted to. In reference to what he has said about the unremitting efforts of the financial authorities for reduction of expenditure, and to the need of continued vigilance in this respect, I am glad to hear such independent testimony publicly borne to the exertions of the Financial Department for the due discharge of its business, and also to the necessity which exists for ceaseless economy in our public expenses. But beyond making this acknowledgment, I shall hardly be expected by the Legislative Council to enter into the purely executive details which my hon'ble colleague has mentioned. I can only say that the Government of India in the Financial Department will continue to do, as it has heretofore done, its duty in these matters to the best of its knowledge and ability.

"I desire now to advert to one point which is of some importance. Though I acknowledge that the Bill as last amended has, in some five instances, equitably raised the stamp-duties to an extent which may yield two lákhs (£20,000) or more to the State; still there is one point in which I think that full justice has hardly been done to the financial interests of Government; and that point is the valuation of land in permanently settled provinces.

"The Council will bear in mind that, in section 7 of the Bill, it is provided that the value of land shall (for purposes of this Act) be deemed to be ten times the annual land-revenue in permanently settled districts, and five times the land-revenue in districts not permanently settled. Now, in districts not permanently settled, the above valuation, though very moderate, perhaps even low, is tolerably even and uniform, and so far correct, inasmuch as the land-revenue is a sufficiently fair index of the value of land in all parts of the country. And if, as time goes on, rectification becomes necessary, it is supplied periodically by revision of settlement. But, in permanently settled districts, the case is quite different. There, the land-revenue has probably long ceased to be a fair index of the value of the land in different parts of the country; and it

will become more and more disproportionate to value as the country advances in prosperity In some cases indeed the standard of ten times the land revenue may prove to be too high a valuation But in many cases it will prove much too low and on the whole I fear that the tendency of this section will be to under value (for the purposes of this Act) the lands of the permanently settled districts And inasmuch as these rich districts are the very places where large suits regarding land are most likely to arise the under valuation for stamp purposes will be of some financial importance I admit however that the section does not make any unfavourable change but merely leaves the law as it was

But if this valuation be defective how is a better valuation to be devised? This is indeed not an easy question and as at present informed I am only able to answer it by saying that the market value of the land and the average nett profits might in each case be ascertained Some authorities of local experience are as I understand in favour of this view If an attempt were made to give effect to such a view some such amendment would have to be proposed as follows section 7 clause v in suits for the possession of land— according to the market value of the land Such value shall be deemed to be fifteen times the average amount of the nett profits obtained from the land during the three years next preceding the year in which the plaint is filed in court provided that such value shall be estimated to be not less than ten times the revenue payable for the land where the land forms an entire estate or a definite share of such estate paying annual revenue to Government or forms part of such an estate and is recorded in the Collector's register or separately assessed with such revenue and such revenue is permanently settled

Such an amendment would no doubt meet the object in view and would guard against the State losing stamp revenue by reason of imperfect valuation inasmuch as a minimum standard (ten times the land revenue) is fixed below which no valuation would be allowed to go

But to any such amendment there would be this manifest objection that in every case there would have to be an ascertainment of the market value and the nett profits In some cases it might be said that an essential preliminary to the institution of a suit regarding land would be an elaborate enquiry in order to fix the amount of the stamp to be presented

When I brought the question before the Select Committee, the above objection seemed to have such weight as to preclude the entertainment of any such proposal I myself however while sensible of the force of the objection do not consider it an insuperable obstacle For the principle of ascertaining market-value for stamp purposes is already sanctioned by the Bill for several classes of cases Still having regard to the objection raised in Committee and in the absence of complete local knowledge I refrain from pressing the matter further at present

I merely make these remarks in the hope that the point may continue to receive attention and that if hereafter a better mode of valuation for land in permanently settled districts can be found it may be embodied in our Court Fees Law

The Hon ble MR STEPHEN wished to offer one observation on the remarks made by the Hon ble Sir Richard Temple in relation to the assessment of estates No doubt the mode which had been adopted in the Bill as Sir Richard Temple had said was arbitrary but MR STEPHEN thought it followed from the fact that Sir Richard Temple did not propose any amendment that of necessity we must make a somewhat arbitrary valuation on account of the extreme difficulty of deciding upon any principle of valuation which was not arbitrary There was no doubt too that any rule which was difficult of application and which might involve nice calculations would be so very great an evil to suitors and open so wide a door to litigation that the proposed plan

was the least of two evils A rule by which the Government revenue would sometimes lose and sometimes gain was not so bad as a rule that would open the door to litigation on the question as to the sufficiency of the stamp on the plaint To introduce a question as to the market value of the land in dispute in order to decide what stamp was to be placed on the suit would lead to uncertainty and be a hardship on suitors The person who was to decide the question of the value of the land the subject of the suit was the plaintiff and it was very hard to call on him to apply a difficult rule The market value of land was a matter on which you might raise infinite discussion especially in all permanently settled provinces where land had become subject to a very intricate system of sub divisions These were considerations which weighed very much with the Select Committee in adopting the present rule of a fixed ascertainable value The question had been carefully considered by the Committee and the result had been arrived at after much discussion

The Hon ble MR STRACHEY said that but for one reason he would probably have said nothing regarding this Bill and that reason being a purely personal one he must apologize to the Council if he took up a few minutes in making an explanation which concerned nobody but himself When the measure was introduced in 1867 which the Council was now asked to repeal it was stated that the main reason for a change in the law arose from the necessity of carrying out certain propositions which he (MR STRACHEY) had made and which had been approved by the Government for making a large increase to the salaries of the subordinate Judges and to the allowances of ministerial officers in the Civil and Revenue Courts throughout India It was estimated that this increase of salaries would cost £300 000 a year and it was avowed that it was a main object of the Bill to enable the Government to obtain additional funds to meet this additional charge The Act of 1867 or at least that part of it which referred to Court fees having thus been declared to have had its origin to a great extent in the propositions made by himself, he found that he frequently got the credit of having had something to do with the preparation of that law and this had been so repeatedly said in one shape or another that he took this opportunity of correcting the mistake The fact was that there had hardly ever been an Act passed by the Indian legislature to which he more strongly objected and the disappearance of which from the statute book he would see with greater satisfaction He had always believed that of all bad taxes that existed there were none worse than high taxes on the administration of justice and the taxes imposed under the existing law were in his opinion enormous

In a paper which he had before him written by the Advocate General of Madras and circulated to the Council there was an illustration of this which was worth repeating He quoted a case which lately came before the High Court at Madras—the case of a suitor who had to pay the enormous sum of 32 000 rupees before he could even ask the Court to hear his case, whereupon the Chief Justice remarked that in no country but India could such a state of things exist MR STRACHEY agreed with the Advocate General that schedule B of Act XXVI of 1867 was as unwise and unjust a measure as ever emanated from any legislature and he thought that the remarks made by the Advocate General and which MR STRACHEY would now read to the Council were perfectly justified by the facts The Advocate General said that what was formerly foretold by him as to the Act of 1867 had admittedly come to pass He said—

> The Act has proved repressive of litigation not dishonest litigation but the *bonâ fide* pursuance of real or imagined rights and when we learn that while litigation has fallen-off twenty per cent and revenue from judicial taxes increased by thirteen lákhs I think it is hardly possible to bring forward two more damnatory statements for while twenty per cent of those seeking justice have been absolutely debarred from redress additional revenue has been squeezed out of those unfortunate suitors whose necessities compelled them to persevere in claiming their rights in the face of prohibitory and oppressive fines

MR. STRACHEY did not pretend to say that, in his opinion, the present Bill afforded a really adequate measure of relief; but, in the existing state of the finances, he thought that it must be admitted that it gave as much relief as we could reasonably expect could be given. It would now be waste of time to talk of reducing, to an extent which he himself believed would, under other circumstances, be proper, the taxes which were levied on suitors for justice. But while he certainly hoped that the time would come when we should see a much larger measure of relief than the present, this Bill was, he thought, a decided step in the right direction. He (MR. STRACHEY) believed that it would remove a very considerable amount of hardship and of injustice, and he thought that, by adopting it, the Council would get rid of an extremely bad law, which had been proved by actual experience to have been the cause of very serious denial of justice.

The Motion was put and agreed to.

The Hon'ble MR. COCKERELL then moved that the following clause be inserted after section 32:—

"And the Indian Income Tax Act, section twenty, shall be read as if, for the words 'the value of the said stamp,' the words 'the fee on the petition,' were substituted."

The Hon'ble SIR RICHARD TEMPLE expressed his concurrence.

The Motion was put and agreed to.

The Hon'ble MR. COCKERELL also moved that the Bill as amended be passed.

The Motion was put and agreed to.

WEIGHTS AND MEASURES BILL.

Colonel the Hon'ble R. STRACHEY, in moving for leave to introduce a Bill to regulate the Weights and Measures of British India, said that the Bill was designed to give effect to the conclusions lately adopted by the Governor General in Council, and concurred in by the Secretary of State, as to the steps to be taken towards reforming the weights and measures of British India.

"The proposals of the Government of India, which were entirely approved by the Secretary of State, were as follows:—

"We therefore consider that the new unit of weight should be a ser, equal to the kilogramme, or 2·205 lbs. avoirdupois, and that a system of decimal multiples and sub-divisions of the unit of weight should be accepted as a fundamental part of the new scale to be recognized by law. We are, however, of opinion, for the reasons stated by Mr. Strachey in his minute, that other multiples and sub-divisions should not be prohibited wherever their continued use appears to be demanded on considerations of present convenience and expediency, and that, while it is desirable that the new system of weights should be brought into general use as speedily as possible, it should not be forced on any class of the community until such class is to some extent prepared to accept it. The best preparation for the general adoption of the new weights will undoubtedly be their introduction and authoritative use in the public Departments of the Government, which are so widely scattered over the whole of the country. We therefore propose that the new unit of weight, with a system of decimal multiples and sub-divisions, should be authoritatively adopted in all Departments of the Government, by all municipal bodies, and on the railways, as soon as practical convenience will admit."

The discussions that had taken place on the subject of the weights and measures of India had now been prolonged over, he (COLONEL STRACHEY) thought, something like thirty years, and it might safely be affirmed that all that it was possible to know on the subject, likely to have any influence on a decision, whether they referred to the facts of the case or the opinions formed on those facts by persons worthy of attention, were before the Government when it came to the conclusion he had just stated.

At the present time, India was in the somewhat singular position of having no weights or measures recognized by any law. The only law that referred to the weights of India had recently been repealed, with a number of other old Acts considered to be obsolete, he did not know under what exact circumstances. He referred to Bengal Regulation VII of 1833, which established for the purposes of the Government Mints certain weights to be employed in dealing with the bullion brought to the Mints for assay. These weights were based on the tola or the weight of the rupee, 180 grains, which had about the same time been finally adopted as the standard of the currency of India. The ser under this system consisted of 80 tolas, the maund of 40 sers, and it was exactly equal to 100 pounds troy.

But hardly any attempt was ever made to adopt these weights authoritatively in any part of India, excepting in a limited way in some of the Government Departments, and their inconvenience in relation to commercial transactions with Great Britain, owing to their being related to the pound troy, and not to the pound avoirdupois, had long been apparent.

The adoption of these weights was moreover limited, with some few exceptions, to the Government offices in the Bengal Presidency, and they might be said to be unknown in the provinces of Madras and Bombay.

The result of the enquiries that were made after the general subject was taken up in 1863, on the motion of the Government of Madras, which, he (COLONEL STRACHEY) thought, was due to the then Governor, Sir. W. Denison, was to bring out, in a very unmistakeable manner, the fact that there were no such things as recognized weights and measures in any part of India; and of all the suggestions that were made with the object of remedying this confusion, none, he thought, were to the effect that any existing Indian weight or measure could be accepted as worthy of constituting new units for general use.

The following general description of the existing weights and measures of British India would enable the Council to appreciate the state of things that had to be dealt with:—

"Throughout India the old standard of weight seems almost universally to have been the current coin of the locality, and the multiplicity of coinages has been, and is still, accompanied by an equal or even greater multiplicity of weights. Not only do the weights vary from province to province, but from town to town, and even within the same town or rural district. Different weights are used in various trades in the sale of different commodities, and in wholesale and retail transactions.

"In Northern India, the usual unit of weight is the tola, which is the weight of the current rupee-coin. The ser is a given number of tolas, varying from 70 to 100. The *man* (by the English commonly called maund) is usually 40 sers. A weight of five sers, called pusseree, is generally recognized, and the ser is sub-divided into sixteen chittacks. The rupee of the British Government weighs 180 grains; the ser of the British Government being 80 tolas is equal to $2\frac{2}{55}$ lbs. avoirdupois, and the Government maund is $82\frac{2}{7}$ lbs. avoirdupois, or 100 lbs. troy. Local sers and maunds vary on either side of 2 lbs. avoirdupois, and 80 lbs. avoirdupois.

"In Southern India, the original unit of weight commonly used was the pagoda, a coin no longer current. The common katcha ser was 80 pagodas, and was equivalent to 24 current rupees. The maund of Southern India usually contains 40 such sers, and is commonly divided into 8 viss, or five ser weights, and forty palams. The khandi of 20 maunds is another weight in ordinary use. At Madras the Government, some years back, endeavoured to establish a local system of weights on the basis of the rupee weighing 180 grains. The ser was not acknowledged in this system, but would be 0·617 lbs. The viss was 3·086lbs., and the maund 24·686 lbs. This system, however, never came into use. In practice, the commercial maund in the town of Madras is taken at 25 lbs. avoirdupois, and the viss and khandi are modified accordingly; but beyond the municipal limits, other weights are employed. The weight in common use in Burma is called viss also; it is 3·65 lbs., and is sub-divided into 100 ticals each of 252 grains.

"In Guzerat, a ser of 40 local rupees weight, a maund of 40 such sers, and a khandi of 20 maunds, are the common weights. These maunds vary from 37 to 44 lbs, and the sers are about 1 lb.

"In Malwa, a ser of 80 local rupees weight, and a maund of 20 such sers, are common. This maund is approximately the same as the Guzerat maund, the ser being about 2 lbs, as in Northern India.

"At Bombay, the old ser was about 10 or 12 oz. avoirdupois, being reckoned as equal to 30 pice. The Bombay maund being 40 such sers is nearly 28 lbs, at which it is now commonly reckoned. This maund is the usual one also on the Malabar coast, south of Bombay; but the ser is the Madras one of 24 rupees weight, so that the maund consists of 46 to 48 sers instead of 40. At Bombay and in the Deccan, the sub-division of the ser is into 72 parts called tank. The Deccan ser is commonly 80 of the local rupees, or about 2 lbs; the maund varies greatly. In the Deccan the weights seem to merge into the Madras systems on the one side, and into the systems of Malwa and Northern India on the other.

"Measures of capacity are hardly known in Northern India. In Bengal and Southern India they are more frequently used, and, as a rule, are intended to be equivalent to certain determinate weights of grain. In Burma, grain is universally sold by measure. There is, however, such great variation among measures having the same name, that it would be useless to refer to them in detail.

"The usual lineal measures are the cubit or háth, and the yard or gaz, the latter being divided in Upper India into 16 girás or 24 tasus. The háth varies from 14 to 20 inches; the gaz from 28 to 40 inches. Thirty-three inches is the length assumed for the gaz in fixing the official land-measures in the North-Western Provinces. The kos is sometimes taken to be 4,000 gaz, about 2¼ miles, and sometimes half that distance; but 5,000 gaz, equal to about 4,500 yards, or 2½ miles, would seem to have been the old kos of North-Western India.

"Measures of area are commonly based on the háth or gaz, but vary so exceedingly from one district to another, that no general account can be given of them. Frequently the denomination of the land-measures is the same as that of the grain-measures, it being understood that the quantity of grain in a given measure will sow the area of land having the same name. It is common in Southern India to find the land-measure of the same name differ considerably according as the crops are irrigated or unirrigated. For all Government purposes, the English acre has now almost universally been adopted, and the revenue-records are, I believe, almost everywhere drawn out on this basis, though the local measurement is at the same time still recognized."

This state of confusion was without parallel in any country in which even a moderate amount of supervision had been exercised over the weights and measures, and it led naturally, and he might say necessarily, to proposals that some one of the established systems of Europe should be accepted for India. The proposals of this sort could be divided into those for adopting the English pound and yard as the new units, and those in favour of the adoption of the metrical system.

The arguments for and against these alternative plans had been long and thorough. The Council would, he thought, hardly expect him to follow these arguments at length on this occasion, and he would ask a reference to the papers on the subject, published in the *Gazette of India* of the 18th February 1869. These contained all the more important elements of the controversy, as he supposed he must call it, as to the merits and demerits, respectively, of the British metrical systems of weights and measures as related to their suitability for adoption in India.

The Government of India thus summed up the grounds on which it adopted the metrical unit of weights in preference to the British:—

"For the reasons there assigned, we are of opinion that the adoption of the English system of weights is not advisable. Neither the English pound, nor any multiple of it, can be a convenient unit of weight for India. It has been almost universally admitted that the new unit should approximate to the existing Indian ser, the average weight of which is about 2¼ lbs. To reduce the ser to 2 lbs. would be extremely unpopular and objectionable.

"On the other hand, the kilogramme of the metric system, which weighs 2·205 lbs., at once provides a ser, which would certainly be as acceptable to the people as any that could be chosen. Further, we consider that, on account of its simplicity and its symmetrical form, the metric system of weight in its integrity will be more convenient for India than any other. While it will be perfectly suitable for the internal wants of India, it will be in harmony with the system which has been already adopted in the greater part of the civilized world, and which may be ultimately adopted by England herself. In any case, it will be more convenient for commercial transactions between England and India than any other system not really commensurable with that of England."

He (COLONEL STRACHEY) might add that, so far as could be ascertained from the expression of opinion on the subject in the newspapers of India, these conclusions had met with the general assent of the public. Also, if he did not mistake the reference made to the subject in the last report of the Calcutta Chamber of Commerce, that influential body accepted with satisfaction the proposals of the Government.

The question might be asked, perhaps, what was the necessity for interfering by a legislative enactment in this matter? The reply was easy, and he thought complete. At the present time, it was practically impossible to say what was a false weight, because there was no such thing as an established and recognized true weight. Any one might say, in a manner that could not be controverted, that the particular weights that he used were those by which he consented to sell, and that it was the affair of the purchaser to satisfy himself what was the magnitude of these weights, and whether the terms of the sale were satisfactory or not.

Quite recently he was informed by a district officer that, in a part of the country where he had been employed, it was the practice of the sellers of goods at the bázárs or markets to go provided with a series of weights of increasing magnitude. The bargaining for the goods brought for sale began by an offer of a certain quantity for a certain sum, according to the weight which was produced. If this was not accepted as too high, the seller, instead of reducing the price, increased the size of his weight, and produced the next larger weight of his series. And so he went on until, by a suitable variation of the weight, the price having remained unchanged, the customer was satisfied.

No doubt trade could be conducted on such a system, but he thought few persons would argue that it was likely to be convenient. If, instead of altering the prices we paid for commodities, we discussed the intrinsic value and weight of the coin with which we purchased, and varied these, instead of varying the quantities to be got for a fixed quantity of money of a certain standard-value, we should not do what was more inconvenient.

Of course, the illustration he had just given of the condition of the weights of the particular district referred to, was a very extreme one, but it was instructive, as indicating the rudimentary condition of the trade of parts of this country and the singular expedients to which the people were forced to resort in the absence of fixed weights or measures.

In truth, the step which the Government of India now purposed to take in regard to the adoption of a standard for weights, was quite analogous to that which was taken some thirty or thirty-five years ago in adopting a standard of value. Before that time, there were a vast number of various sorts of rupees of various values. In all purchases, the precise value of the coin in which payment was made was just as important as the precise quantity of the article sold. The adoption of a single standard of value had removed all necessity for considering the variation of more than one element in commercial transactions, all dealings being now based on a definite money-value, the only doubtful matter being the quantity of the article bought or sold.

What was now desired was to give a common standard of weight, which should be as generally accepted, and with as great security to buyers and sellers, as was the standard of value.

By persons not acquainted with the results of the absence of precise and recognized standards of value and quantity, the extreme inconvenience of not having such standards would not easily be appreciated. The only thing to which the want of such standards could be compared was the want of a common language or of the arts of writing or printing. That societies could go on without these artificial helps was not to be disputed, but that very great inconvenience was thus caused, and very great obstruction placed in the way of the growth of trade and improvement generally, was incontestable.

He could not conclude these observations without remarking that it seemed to him certain that it would be a cause of no little astonishment to those who succeeded us, how it could have happened that the Government of India so long left the country without any defined standards of quantity. The necessity for such conveniences in the transactions of a community so wealthy and engaged in so vast a commerce, external and internal, was so obvious and so urgent, that it was marvellous, not that the present proposal was now made in the year 1870, but that it should have been so long delayed. What was proposed for India was in no sense what certain persons in England had desired in respect to the weights and measures of that country. We did not ask for an assimilation of weights and measures with those of other neighbouring countries with which we had great transactions, on the score of the greater convenience of the other weights and measures, and the importance of having uniformity in transactions conducted on so large a scale. What was desired for India was for the first time to adopt some fixed standard of quantity where none had hitherto existed, and to place once for all on a definite basis the multitude of transactions of trade and commerce which had till now been left to be settled too often in a manner that placed the buyer at the complete mercy of the seller, and gave the most objectionable openings to fraudulent dealings. We hoped, it was true, at the same time that we did this to give the greatest possible ultimate convenience to the community in their internal trade, by the adoption of a system which was in itself very simple and more perfectly suited to arithmetical computations than any other system could be. While, by accepting the system which was now almost exclusively used on the continent of Europe, and the recognition of which in England also seemed now almost certain to come to pass before many years were over, we might expect to place the external commerce of India, in respect to the weights it employed, on a footing in which no further change was ever likely to be called for.

The Motion was put and agreed to.

The Council adjourned to Friday, the 11th March 1870.

WHITLEY STOKES,

Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

CALCUTTA,
The 4th March 1870.

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

MANUFACTURE OF QUININE IN BENGAL.

No. 478, dated 21st February 1870.

From—H. S. BEADON, ESQ., *Offg. Under Secy. to the Govt. of Bengal,*

To—*The Secretary to the Government of India*, HOME DEPT.

I am directed to forward, for the information of His Excellency the Governor General in Council, the accompanying copy of a correspondence noted on the margin, relating to a proposal for the manufacture of Quinine in Bengal.

1. From Dr. T. Anderson, Superintendent of the Botanical Gardens, on leave in England, dated the 20th November 1869, and enclosure.
2. From the Officiating Superintendent of Botanical Gardens, No. 165, dated the 10th February 1870.
3. To the Officiating Superintendent of Botanical Gardens, No. 476, dated the 21st instant.

2. The Lieutenant Governor has sanctioned the expenditure of the sum of Rs. 2,500 applied for by the Officiating Superintendent of the Botanical Gardens to procure machinery for the experiment, the charge being met from the allotment for contingencies in the budget estimate of the Superintendent for the current financial year, as proposed in the 20th paragraph of his letter of the 10th instant.

3. His Honor has also authorized Mr. Clarke to proceed to Madras for the purpose of holding an interview with Dr. Broughton.

Dated 20th November 1869.

From—T. ANDERSON, ESQ., M. D., *Supdt. of the Botanical Gardens, Calcutta, and in charge of Cinchona Cultivation in Bengal,*

To—*The Secretary to the Government of Bengal.*

I have the honor to forward to you, for submission to His Honor the Lieutenant Governor of Bengal, a letter which I wrote last January narrating the result of some experiments I made at Darjeeling in the attempt to separate the cinchona alkaloids in a cheap and coarse state from young cinchona bark. The letter was not then despatched to you, because, immediately after it was written, the state of my health would not allow of my carrying out part of the object I had in view in writing the letter, *viz.*, a journey to Ootacamund. But the main object of the letter—the utilization of the young bark from the trees in the Government plantations at Darjeeling by the manufacture from them of a cheap but powerful febrifuge well suited for use in native hospitals and charitable dispensaries—is more important than ever. Mr. C. B. Clarke, the officer who is in charge of the Botanical Gardens during my absence, has also had this subject forced on his consideration by the very advanced condition of the cinchona trees at Darjeeling. It is evident that they will almost immediately require to be pruned by the lopping off of branches from the largest trees to admit air and light and to give room.

Mr. Clarke is aware, I believe, that such young bark will be almost unmarketable for the reason stated in my letter enclosed, *viz.*, that crystalline salts of the alkaloids cannot be prepared from such bark, at least in any quantity, and he has therefore been endeavouring to prepare a rough and cheap form of the alkaloids from the bark of the branches.

Besides the two preparations I have described in the accompanying letter, there is a third form in which the alkaloids might be separated, and which may be cheaper and easier of manufacture from young bark than either my grey powder or the one made by Mr. Broughton.

I am indebted to my friend Dr. DeVrij, of the Hague, one of the most distinguished quinologists of the day, for the account of the process by which this third substance can be prepared. The young undried (fresh) bark should be macerated in water (cold) strongly acidulated by hydrochloric acid for about 48 hours; the water is after that to be strained off. The rough alkaloids are to be precipitated from this acid infusion of the bark by carefully adding lime (milk of lime). The precipate, after removal of the supernatant liquid, should be thoroughly well washed with cold water, pressed gently and well dried.

This precipitate consists of all the alkaloids present in the bark of the species, and dried bark can be used for this preparation as well as in any other process, but if the manufacture is carried on near the plantations, it is better to use fresh bark than to spend time and labour in drying it. I regret that I am at present unable to forward the specimens of the preparations referred to in my letter of last January, as they have been given to Dr. Christison, Professor of Materia Medica in the University of Edinburgh, who has offered to examine and report upon them.

It does not seem necessary that I should make any suggestion about conducting further experiments, beyond saying generally that the practical result of these experiments and which I have always had in view—the extensive use of all the alkaloids found in one species of bark unseparated from each other—will be most readily attained by the experimental administration in hospitals of all of these three substances,—Mr. Broughton's powder, my grey powder, and that obtained by Dr. DeVrij's simpler process.

Such experiments will be necessary in the first place to fix the proper dose of the new preparation, and if the result is also favorable as regards the cure of fever, as no doubt it will be, there will be no difficulty in introducing these cheap preparations of the alkaloids into medical practice in India.

Dated 14th January 1869.

From—T. ANDERSON, ESQ., M. D., *Superintendent of the Botanical Gardens, and in charge of Cinchona Cultivation in Bengal,*

To—*The Secretary to the Government of Bengal.*

I have the honor to report the result of some investigations I have recently made at the cinchona plantations near Darjeeling, with the view of discovering a cheap process for separating the alkaloids from the cinchona bark. I undertook these experiments because I am convinced that one of the main objects in forming plantations of cinchona would be attained if a cheap prepararation of the alkaloids could be made, and especially if such a form of the medicine could be procured from young bark. The investigations of Mr. Howard, Dr. DeVrij, and Mr. Broughton, the quinologist in the Neilgherries, prove that alkaloids in the young bark are not in that highly elaborated condition which they attain in mature bark, as is proved by the small percentage of crystallizable combinations of the alkaloids with acids procured from young barks, although the presence of a considerable amount of alkaloids may have been discovered by the usual tests. It is almost certain that the alkaloids in the uncrystallizable state will prove quite efficacious in curing fevers.

I have lately prepared two substances from the young cinchona bark grown at Darjeeling; these contain all the alkaloids mixed with some extraneous matter in different degrees. The first of these, the brown viscid substance in the small jar, is called quinium. It is fully described by Mr. Markham in his letter to the Government of Madras, dated 16th January 1866, as "extrait alcolique de quinquina a la chaux." I prepared it very much in the same manner as described by Mr. Markham. The process I followed was to macerate about 10lbs. of dried coarsely powdered bark with half its quantity of lime, moistening the mixture with a small quantity of water. The mixture was frequently stirred during the process of maceration. Spirit obtained by distilling the common weak spirits manufactured in the hills from *eleusive coracona* was then added to the mixture, which was boiled for half an hour and then strained. This clear strained spirit was placed in a small still and distilled until the spirit was removed; the residuum was then carefully evaporated in a water bath until it acquired the consistency of the specimen now sent. The native spirit from *eleusive* is so weak that, on distilling it, water only slightly flavoured with spirit comes over after the first half of the original quantity has been procured. However, about three-fourths of the alcohol used to dissolve the alkaloids are recovered by distillation.

The slaked lime I used in this process is the lime in common use at Darjeeling, and is collected from the sides of certain small streams in the hills which deposit carbonate of lime when they issue from the hill sides. This carbonate of lime is burned in kilns on the spot where collected.

I have treated some cases of fever with this substance (quinium), and I find that it is a powerful febrifuge, as indeed it must be, as it contains all the alkaloids present in the bark. It dissolves with some difficulty in cold water, but readily in warm water, and this solution does not become turbid on cooling.

Notwithstanding its undoubted efficacy as a febrifuge, it would, I think, be generally objected to by medical men both on account of its appearance and the difficulty the dispenser would have in accurately measuring it.

The second substance (a grey powder) consists of the alkaloids in an impure and non-crystalline condition. Mr. Markham also refers to this preparation in the letter I have already quoted; but his knowledge of this preparation of the alkaloids was derived from Dr. DeVrij, who thought this powder would be "more conducive to the objects in view than quinium."

The process apparently by which Dr. DeVrij separated the alkaloids in this form is mentioned at page 227 of the last Blue Book on Cinchona, published in June 1866.

I obtained the grey powder forwarded with this letter by following a different process from that described by Dr. DeVrij. Young bark about 16 months old was dried and coarsely pounded in a large wooden mortar similar to those used by natives for husking rice; the powdered bark was boiled in water in which a certain proportion of solution of caustic soda had been mixed. The dark colored liquor, the result of this boiling, was thrown away, and the bark was well pressed and slightly washed with cold water and again boiled in an alkaline water similar to the first, and the result of this second boiling was also thrown away. The bark after this second boiling was thoroughly well washed with cold water and pressed. The bark, now thoroughly decolorized, was then boiled in water, strongly acidulated with sulphuric acid, pressed after thorough boiling, and the liquor kept. This process was repeated a second time. These acid liquors were then mixed together and evaporated by slow boiling to one-fourth of their bulk and then filtered. To the filtered cold liquor solution of caustic soda was carefully added until a strong alkaline action was obtained, and until no more precipitate resulted from the addition of the soda solution. The dark grey precipitate (impure alkaloids) was collected on a cloth, well washed, carefully dried in a water bath, and reduced to powder.

Since writing the above, I have received from the Medical Department a yellowish grey powder closely resembling the powder I prepared, and, like it, containing all the alkaloids in a non-crystalline form. This powder was prepared at Ootacamund by Mr. Broughton, Government quinologist, from bark grown on the Neilgherry plantations, and was sent to Bengal for experiment in the hospitals as to its efficacy as a febrifuge. The cinchona plants at Darjeeling are now so numerous and vigorous that a considerable quantity of young bark could be at once obtained from them by pruning and lopping off superfluous branches, treatment which would render the plants symmetrical and advance their growth as trees. From my knowledge of the chemistry of the cinchonas, I am unable to recommend now on my own responsibility a method by which these barks could

be utilized, but I feel certain that either my grey powder or Mr. Broughton's somewhat different and probably superior one could soon be made on such a scale at Darjeeling as to supply a considerable amount of a valuable and very cheap febrifuge as efficacious as expensive sulphate of quinine to the native hospitals in Bengal. I know quite enough of the process of obtaining the alkaloids from the bark to benefit from a consultation with Mr. Broughton, and afterwards to recommend to Government and to inaugurate some cheap and simple manufactory of the alkaloids in the rough state. I have therefore to request that I may be permitted to proceed to Ootacamund and spend eight or ten days there to consult with Mr. Broughton, and observe his processes in the laboratory.

No. 190, dated 20th January 1870.

Endorsed by Govt. of Bengal.

Copy forwarded to the Officiating Superintendent of the Botanical Gardens for perusal and for any remarks he would like to make on the subject of Dr. Anderson's communication.

No. 165, dated 10th February 1870.

From—C. B. CLARKE, ESQ., M. A., *Officiating Superintendent, Botanical Gardens, and in charge of Cinchona Cultivation in Bengal,*

To—The Secretary to the Government of Bengal.

I beg leave to acknowledge the receipt of your memorandum No. 190 of 20th January 1870, enclosing the letter of Dr. T. Anderson, concerning quinine manufacture at the Government plantations near Darjeeling; also of your memorandum No. 225 of 25th January 1870, accompanying the copy of the quinology of the East Indian plantations by John Eliot Howard.

2. The work of Mr. Howard should more strictly have been entitled the Quinology of the Plantations of the Peninsula of India, as the facts discussed are drawn exclusively from the peninsula plantations, and the conclusions, though stated as general, do not in many important points hold good as regards the Bengal plantations.

For example: on page 1 of Part I, Mr. Howard opens the discussion of the proper elevation at which to grow cinchonas in India in these words:

"Recent observations on this point may save the apparently useless attempt to cultivate these plants at a level below 4,000 feet above the ocean."

Upon this I remark that the whole of the 1,000,000 plants of C. Succirubra at Rungbee are below that level. The species appears to thrive best at about 2,000 feet elevation, and grows very well down to the river at 800 feet elevation. Cinchona Calisaya grows best at similar elevations, but on the whole will not grow so high as C. Succirubra. In short, the only plants in the Rungbee plantations, which are *above* 4,000 feet elevation, are some C. Officinalis, which are being tried at this higher level as a last experiment, whether the species can be profitably cultivated at all at Rungbee.

3. The plantations at Rungbee appear from the reports to be fully as large and well advanced as the Neilgherry plantations; and though the Rungbee plantations are several years younger than the Neilgherry plantations, the specimen bark sent home from Rungbee is considered (as I learn from Dr. T. Anderson) superior in quality to any that has ever been sent home from any other part of Asia. Hence the limitation, which I assert ought to have been made in the title of Mr. Howard's valuable work, is a material one.

4. From the 6th August 1869 up to the present date I have been almost incessantly employed on experiments with C. Succirubra bark up till 1st November at Rungbee, subsequently in Calcutta; and I wish to state that any success which has attended my efforts is due to my friend Mr. Blanford,

the meteorologist to Government, who is an experienced chemist. Before commencing experiments I had the advantage of his advice. During my experiments at Rungbee, I was in constant communication with him, and referred each difficulty, as it occurred, to him; and in Calcutta, Mr. Blanford has not only allowed me the use of his laboratory and apparatus, but has devoted to my instruction and assistance many hours weekly during the last three months.

5. In his budget estimate for 1869-70, Dr. T. Anderson estimated that the thinnings and prunings of the Rungbee plantations during the cold weather would produce Rs. 1,000 worth of bark, and he estimated that the drying, packing, and carriage of this bark to London for sale would cost Rs. 1,000.

6. Dr. T. Anderson, as appears by his letter aboved quoted, is now desirous that the attempt to manufacture should be commenced at Rungbee. This is, I believe, a very general wish with the Medical Department in Bengal, and Dr. Ewart in his pamphlet on the subject has urged that the quinine should be manufactured by Government rather than that the bark should be sent for sale to London.

7. The manufacture of the crystallized sulphate of quinine now in general use (so far as can be afforded by its very high price) consists of two stages. The bark is treated with dilute acid, which takes up the alkaloids contained in it, and also a certain quantity of coloring matter, resin, and other rubbish, which quantity is considerable in C. Succirubra bark, the only bark which for some years will be produced in quantity at Rungbee. The acid infusion is neutralized by an alkali, when the quinine alkaloids are precipitated, accompanied with more or less of the rubbish. These precipitated alkaloids (more or less impure) are known as the result of the first stage of the manufacture. The second stage is in actual manufacture, generally performed by washing out of these precipitated alkaloids (by strong alcohol) the quinine, and evaporating the alcohol.

8. It will be seen from Dr. Broughton's letter forwarded to me by the Government of Bengal, No. 3601 of 1st November 1869, that there are reasons why the alcoohlic process cannot be well performed at Rungbee, and that some "unusual" process must be employed. Dr. Broughton has been (he says) for some time engaged in devising a new process, but has not as yet carried his experiments to such a result as would justify him in making it public.

9. It is in contemplation of this state of the case that Dr. T. Anderson now advocates the manufacture of a rough hospital quinine at Rungbee, by which he means the production of the precipitated alkaloids in a more or less impure form.

10. Before I commenced my experiments, I addressed the Inspector General of Hospitals on this subject. He is of Dr. T. Anderson's opinion upon this question, and is desirous to try the rough alkaloids in hospital practice.

11. It seems now pretty well settled (*vide* last edition of the London Pharmacopœia, Dr. T. Anderson's letter, and Dr. Broughton's cinchona report of August 1868) that the other quinine alkaloids are valuable febrifuges and operate pretty much as quinine, but are less powerful. Roughly it may be said that two grains of cinchonidine are equal in all respects to one grain of quinine. The action of cinchonine and the other minor quinine alkaloids is less satisfactorily made out, but in the C. Succirubra bark, usually 75 per cent. of the alkaloids present are either quinine or cinchonidine.

12. If, therefore, the medical practitioner dissolves the precipitated alkaloids in dilute sulphuric acid, he can give the same dose as is given by diluting in acid the crystallized sulphate of quinine. But I must here state that several doctors of experience in the Medical Department object that the crystallized sulphate is pure, and that they can be sure of the dose they give to a grain; whereas in the precipitated alkaloids the proportions of cinchonidine and even more inert alkaloids will be variable and doubtful.

13. This objection to the putting out of the precipitated alkaloids from the Government plantations is entitled to some weight. But contra, I doubt whether the medical officer is at present at all sure of the dose of quinine he gives. Cinchonidine is about one-third the value of quinine, and the crystals of cinchonidine are exceedingly like those of quinine. There is really very little quinine in general use that is not at present deeply adulterated with cinchonidine, and I doubt whether any amount of chemical knowledge will enable the medical officer to detect the percentage of cinchonidine present, unless he were provided with quite a different laboratory apparatus from that generally at his command.

14. Further, should the production of the precipitated alkaloids be carried on upon a large scale hereafter, it would be possible to thoroughly mix a large quantity, analyze a sample, and then issue it with the percentage of quinine and cinchonidine certified on the labels of the bottles.

15. With these views I engage in my own experiments with Rungbee C. Succirubra bark, and have confined myself mainly to the first stage of manufacture. I submit with this letter a sample No. 1 of the precipitated alkaloids which corresponds to the "grey powder" mentioned by Dr. T. Anderson. This grey powder is completely soluble in dilute acid, and is very clear, both of cinchona red and of resin. By treating it with scalding water and a little sulphuric acid and allowing it to cool, a portion of the alkaloid crystallizes (this is the sample No. 2 submitted), and the remainder may be re-precipitated (this is sample No. 3).

16. These samples are merely submitted as specimens of the products mentioned, for they are principally made from American Succirubra bark, as I have lately been in Calcutta without Rungbee Succirubra bark. The portion of these samples made from Rungbee Succirubra bark was exactly similar to that obtained from the American Succirubra bark, but in much smaller quantity in proportion to the weight of bark used.

17. Dr. Ewart has well pointed out that by working up the bark at Rungbee, not only would the expense of packing the bark and its carriage to England be saved, but there would be a great economy in fuel. (There is much boiling in the early stage of the manufacture). At present, at Rungbee, our very excellent charcoal only costs us 5 annas per maund, and the high tree forest, reaching from the upper level of cultivation (5,000 feet) on the cinchona reserves to the summit of Sinchal, will furnish charcoal for a very long series of years, unless Government resumes these forests from the cinchona reserves for other purposes.

18. On the other hand, Mr. Howard has devoted himself for years to the manufacture of quinine, and it must not be expected that by working out in the jungle with Nepalese coolies, the same money value will be got out of a pound of bark as could be got out of that pound by an accomplished European quinologist. Much less can it be expected that *at first* any approximation to such a standard can be attained. The impression which I have gained from my protracted experiments is, that the successful manufacture of quinine (like most other manufactures) is not any particular secret or the adoption of any particular route, but is the result of the application of skilful manipulation and minute experience at each step and turn of the work. In asking Government, therefore, to authorize me to commence the manufacture there with the present season's thinnings and prunings, I should consider my recommendation would be justified by the result. If a product should be obtained that can just be serviceably employed, it might be then confidently anticipated that improvement step by step would follow.

19. In case the precipitated alkaloids should ultimately not prove satisfactory to the medical profession, and assuming moreover that we never discover how to produce therefrom economically a pure crystallised sulphate of quinine in sufficient quantity, it will nevertheless probably be found most profitable to Government to manufacture the precipitated alkaloids at Rungbee, and send them for sale to London rather than the bark itself. Not only is fuel and rough labor cheap at Rungbee, but the expenses of carriage will be reduced to about one-fiftieth of that of the bark.

20. The prunings and thinnings of this season at Rungbee are now proceeding, and are estimated to produce about 1,500lbs. of bark, of which nearly 1,000lbs. will be bark from wood three or four years old, the remainder from second year bark. I am sending 2 maunds of the very best for sale in London. The rest I propose to work up experimentally myself at Rungbee. I therefore now ask Government to sanction the expenditure from the current year's contingency of Rs. 2,500 for the requisite machinery. The sanction is needed in point of form, as there is an ample margin of contingency available to meet the charge; but I feel that the embarking in a manufacture of this magnitude and difficulty should have the express sanction of Government.

21. Besides the expense of machinery, the experiment will cost Government the loss occasioned by not selling the bark, for though Dr. Anderson as above stated) in his budget estimate gave the cost of drying, packing, and carriage to be as much as the bark would fetch, the 1,000lbs. of higher class bark would doubtless produce, if sold in London, a large profit over those expenses.

22. I propose, if this experiment is sanctioned, to work up the year's crop at Rungbee into a grey powder similar to the sample transmitted. This grey powder can afterwards partly be issued to the Inspector General of Hospitals, partly to be sold in London, and partly be experimented on in Calcutta, for production of the crystallised sulphate therefrom.

23. Regarding the process to be followed, I have travelled over most of the ground pointed out in Dr. T. Anderson's letter, and I consider that the same process cannot be followed exactly with all bark.

In the bark, from very young shoots, the quantity of resin present is large, and I have been unable to deal with it at all except by following Dr. T. Anderson's plan of a previous boiling in alkaloid water. This, however, doubtless sacrifices a percentage of the small quantity of quinine present on such bark; and Mr. Blanford greatly doubts whether the bark from young shoots will ever prove remunerative to work up.

24. I have been exceedingly desirous of working the bark cold altogether, as suggested by Dr. T. Anderson. There is great advantage in working cold, not merely in saving of fuel and labor, but in diminishing the quantity of the vexatious resin (as Dr. Broughton calls it) and coloring matter. But I am sorry to say that bark, after repeated and protracted infusions, has produced with me large percentages of the alkaloid by decoction.

25. In the matter of infusion, I should therefore, as Dr. Broughton says, "proceed according to circumstances." With the better class of Rungbee bark of the present year, I should be inclined to infuse it first and decoct it afterwards; interposing between the infusions and the decoction an alkaloid treatment in those cases where the resin proves very vexatious.

26. On another important point, I do not propose for the present season to adopt Dr. Anderson's suggestion, *viz.*, that of working the bark fresh. It has been stated that bark gives up its quinine more readily in a fresh state. I have tried the fresh bark, and I have not obtained a good result. I have little doubt that this failure was because my bark was not cut fine enough. Indeed, I could see that the dilute acid discolors the bark hardly one-fortieth of an inch deep. To cut up 1,500 lbs. of bark very fine would require special machinery, the expense of which I wish to avoid for the current year's experiment, especially, as by drying the bark in the present drying-house, it can then easily be pounded in a mortar to a very great fineness.

Moreover, there will always be a great practical difficulty in working the fresh bark on a large scale. The fresh bark cannot safely be stored, as it soon ferments. Now the bark only "rises," that is, is fit for stripping at certain times, so that in the factory, if we worked fresh, we should be compelled to provide a very large quantity of machinery indeed so as to be able to take in hand, at once, the bark that would come in upon us irregularly in masses.

By working it dry, we can work it regularly at our leisure. Should my process not succeed well on the large scale, I can stay my hand, try any further experiment before proceeding, or finally in despair ship the dried bark to England.

27. A very large portion of the present book by Mr. Howard, and also a great many of Dr. Broughton's experiments, refer to the process of mossing up the trees devised by Mr. McIvor. Before I took charge of the Rungbee plantations, Dr. Anderson had decided, after no very long experimenting, to have nothing to do with that process. About that decision there is no second opinion at Rungbee. Any person may, however, quickly decide it for himself in Calcutta.

Let him select a dozen trees 20 feet high (the Rungbee Succirubra trees have reached that height already, and will probably be 30 feet in a couple of years' time); let him get moss enough for the purpose (if he can—we cannot at Rungbee); let him tie this moss round the stem and branches up to the second year wood; let him watch the trees six months, and loosen the bonds, where necessary, to prevent the trees being cut (working with the lowest coolie labor and superintending himself); then let him sit down and calculate the quantity of moss required for 1,200,000 trees (which there will be at Rungbee planted out by 31st March 1870), and where it is to be collected, and how much labor it will take to apply it, and how much superintendence to watch it. Then he will be in a position to form a very fair opinion on the process of mossing [illegible] indeed, I do not think Dr. T. Anderson's opinion was founded on any more extended experiments or recondite speculations. Granting that the mossed bark produces ten times the quinine that the unmossed does, I would unhesitatingly prefer growing ten times the number of trees in order to get the required amount.

28. At Rungbee Dr. T. Anderson has kept quite clear of the refinements which have, apparently, so largely occupied attention at the Neilgherry plantations, and has devoted himself to growing the cinchona trees in the largest size and quantity at the lowest rate of expense possible. In this he has succeeded, not in the qualified degree which it would appear from Mr. Howard's book; success has been attained in the Neilgherries, but completely and beyond the most sanguine anticipations that were formed by any one. Moreover, it now turns out that this bark is superior in value to that from the peninsula plantations. The problem now remaining is to get the febrifuge out of this bark in a form practically available in medical practice and at the lowest possible cost.

29. With regard to the suggestion in the last paragraph of Dr. Anderson's letter, it would give me great pleasure to meet Dr. Broughton, and I do not doubt but that with a word he could save me the labor of many of the experiments which I shall have yet to make to clear up points of working detail. I also should like to obtain the aid of his experience in several questions connected with the machinery. I believe I might find time for a short visit to Dr. Broughton in March, and I have the honor to request Government to send me to Ootacamund, on deputation, for one month, more or less.

No. 476, dated 21st February 1870.

From—H. S. BEADON, ESQ., *Offg. Under Secretary to Government of Bengal,*

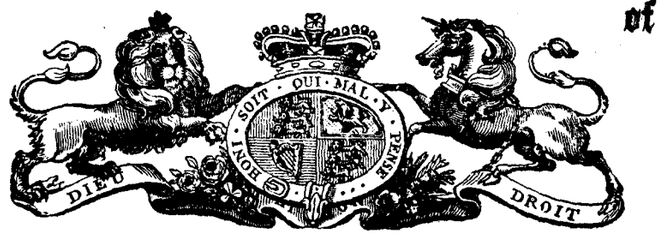
To—*The Offg. Superintendent, of the Botanical Gardens, and in charge of Cinchona Cultivation in Bengal.*

I am directed to acknowledge the receipt of your letter No. 165, dated the 10th instant, submitting your report on the subject of manufacturing quinine in Bengal, and in reply to inform you that the Lieutenant Governor has been pleased to sanction the expenditure of Rs. 2,500, applied for in paragraph 20, for machinery requisite for an experimental working of the manufacture. The charge will be met, as suggested by you, from the allotment for contingencies in your budget grant for the current financial year.

2. With reference to paragraph 29 of your letter, I am to say that the Lieutenant Governor is willing that you should proceed to Madras, as proposed by you, to hold an interview with Dr. Broughton.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street Calcutta.*

No. 12 of 1870.



SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, MARCH 19, 1870.

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GOVERNMENT OF INDIA.

HOME DEPARTMENT.

NEILGHERRY CINCHONA PLANTATIONS.

Proceedings of the Madras Government, Revenue Department.

No. 268, dated 22nd February 1870.

Read the following Report from J. BROUGHTON, Esq., Quinologist to Government, Ootacamund, to the Acting Secretary to Government, Revenue Department, Fort Saint George, dated Ootacamund, 9th December 1869:—

The present condition of the Neilgherry Cinchona Plantations, both absolutely and with reference to the changes that have taken place during the past year, may be aptly discussed in the beginning of this Report.

2. Constant examinations of the bark of the oldest part of the plantations of *C. Succirubra* have demonstrated that the amount of alkaloids therein contained has *increased* during the past year. The amount of this increase has necessarily been determined by the comparative examination of a part only of the plantations conducted at different seasons, and hence a certain error may be committed by applying the definite number thus obtained to the plantation generally. I therefore content myself with stating that the increase in the amount of alkaloids contained in the trunk-bark of the oldest trees from May 1868 to May 1869, has not been less than 0·5 per cent.

Red bark has increased in yield of alkaloid, 1868-69.

3. In a Report, dated 17th August 1868 (Proceedings of Madras Government, Revenue Department, 22nd September 1868, No. 334), I had the honor of stating the *a priori* probability of the annual increment of alkaloid therein mentioned decreasing in amount till an equilibrium is established between formation and internal consumption. The respective numbers representing this annual increment for the last two years coincide with this view, being 0·75 and 0·5 respectively.

Annual increments are decreasing in amount.

4. The mean percentage of quinine has, on the other hand, diminished during the past year among the red barks, as was the case during the previous year. This diminution will be considered below. Analyses which are believed to fairly represent the mean yield of the bark of the oldest trees, may be stated thus in percentages of the dried bark :—

Quinine has not increased in red bark.

Mean present yield of red bark.

	May 1868.	May 1869.
Total alkaloids	6·74	7·43
„ sulphates obtained crystallized* ...	6·06	6·43
Quinine	2·40	1·72
Cinchonidine and cinchonine	4·34	5·71
Crystallized quinine sulphate obtained ...	2·21	1·51
„ cinchonidine sulphate obtained ...	3·85	4·92

5. During the past year I have paid much attention to the varieties of *C. Officinalis*, which constitute the "crownbarks." The varieties we possess of these are far more numerous than are usually recognized by the botanists who have studied cinchonæ in Europe. With the exception of the very distinct kind (provisionally called *Lanceolata*), whose great excellence I have pointed out on former occasions, (Proceedings of Madras Government, Revenue Department, 22nd September 1868, No. 334, paragraphs 12 and 13, and 19th June 1869, No. 422), I can discover no invariable connection between the external appearance and the chemical constitution; while the varieties themselves merge into one another by slight gradations.

C. Officinalis.

6. But, on the other hand, the yield of alkaloids varies greatly according to the vigour of growth, size of tree, and consequently with character of soil. The most vigorous and quickly-grown trees yield a far richer bark than the more stunted ones of the same age; while at the same time they, of course, yield more bark. This circumstance strongly indicates the advantage of high cultivation: thus, an acre of land planted with trees growing at a doubled rate will yield more alkaloid than two acres of trees growing at the ordinary rate. It is a singular circumstance that the alkaloids should be the constituents most affected by the tree's vigour, as it would seem far more likely *a priori* that all the constituents would be affected in equal proportion. I have some reason for thinking this circumstance is closely connected with the amount of nitrogenous constituents in the soil.

Vigorous trees contain most alkaloid.

7. This variation in the amount of alkaloid, with the size and vigour of the tree (age being constant), renders any numerical estimate of the annual mean increase in the percentage of alkaloids exceedingly difficult to obtain. I believe the increase during the past year has been considerable, but feel hardly justified in stating a definite number that would apply to the whole plantation. The diminution in the amount of quinine with age, perceptible in *C. Succirubra*, certainly does not obtain in *C. Officinalis*. To illustrate the great difference in the yield connected with the vigour of the trees, I quote the following results obtained

Increase during past year.

Analyses showing difference of yield according to vigour.

* The numbers express the pure and not the commercial salts. From the crystalline sulphates that of cinchonine is excluded. These observations apply to all analytical statements in this Report.

from trees of same age (five years old), each analysis being the mean of several trees :—

	Bark from fine vigorous trees.	Bark from fine vigorous trees.	Bark from trees of mean growth.	Bark from trees of stunted growth.
Total alkaloids	6·76	6·94	4·34	2·40
„ sulphates crystallized	5·39	5·59	3·60	1·65
Quinine	3·76	3·80	2·18	0·90
Cinchonidine and cinchonine ...	3·00	3·14	2·16	1·50
Quinine sulphate obtained crystallized ...	3·45	3·55	2·00	Undetermined.
Cinchonidine sulphate obtained crystallized	1·94	2·04	1·60	Ditto.

8. On the 30th of August last I obtained a mixed sample of Calisaya bark from sixteen trees grown at Neddiwuttum, rather more than two years old. It gave as a result :—

C. Calisaya.

Total alkaloids	4·53
„ sulphates	2·87
Quinine	3·27
Cinchonidine, quinidine, and cinchonine	1·26
Sulphate of quinine obtained	2·17
Other crystalline sulphates	0·70

9. The above result is very promising, and ought to lead to the extended cultivation of this species, which has a greater established reputation in Europe than any other kind. The numbers above may fairly be taken as expressing the mean general yield at the period stated.

10. I had the honour, in May last (Proceedings of Madras Government, Revenue Department, 19th June 1869, No. 422, paragraphs 13 and 14), of adducing some considerations which appeared to me to show the expediency of discontinuing the planting of *C. Succirubra*, of which kind we have a sufficiency. The reasons I then gave I still hold to be sound; but since I wrote, from 100,000 to 150,000 additional trees have been planted. I therefore am compelled to think that Government do not coincide with me on this point. I also, in June last, addressed the Commissioner of the Neilgherries on the same subject, strongly urging the discontinuing of the planting of red bark trees in favour of other kinds on the small part of land allotted to Cinchona cultivation at that time remaining unplanted. For my present and future justification I respectfully reiterate the substance of what I then said both in the report and letter. The other kinds to which I refer are *Lanceolata*, *Calisaya*, and *Pitayo*, of which the remainder of the plantation should consist.*

Further cultivation of *C. Succirubra* unnecessary.

11. In my first Report I had the honour of communicating some facts concerning the occurrence of alkaloids in the leaves of Cinchona. I have since investigated the question more perfectly than I was then able to do. From 20 lbs. of the leaves

Leaves of *C. Succirubra*.

* Since the above was written, I have received G. O. No. 2936 of 9th November, in which orders are given on this matter.

of *C. Succirubra* I was able to obtain 0·372 gramme of alkaloid, of which 0·153 was quinine. The quinine yielded 0·070 gramme of crystallized sulphate. After considerable labour I was enabled to obtain positive evidence of the presence both of cinchonidine and cinchonine in the leaves, and also to obtain them in well-marked microscopic crystals. Below I give the respective percentage amounts of the alkaloids in the leaves, both fresh and dried :—

	In fresh leaves.	In dried leaves.
Total alkaloids	0·0041	0·019
Quinine	0·0016	0·0080
Cinchonidine and cinchonine... ...	0·0025	0·0110
Quinine sulphate obtained in crystals ...	0·00078	0·0037

12. Similar observations may be made, *mutatis mutandis*, respecting the leaves of the crown barks. The following statement expresses the percentages obtained :—

Leaves of *C. Officinalis.*

	In fresh leaves.	In dried leaves.
Total alkaloids	0·0035	0·0111
Quinine	0·0015	0·005
Cinchonidine and cinchonine... ...	0·0020	0·006
Quinine sulphate obtained in crystals ...	0·0008	0·002

13. The circumstance of the occurrence of the several alkaloids in the leaves in so definite a manner is one of considerable interest, but as a source of supply it obviously is of no practical value. The state of their occurrence is different to that in which they are found in the bark, and it is laborious and difficult to obtain them in a pure state. The quantity is very small in amount, and certainly gives no support to the impression so often stated as a fact (on slight grounds) that the leaves are an effective febrifuge. According to the above it would take many pounds of leaves to be equal to a dose of quinine.

Leaves of no practical use as source of alkaloid.

14. The leaves contain quinovin, to which they owe their bitter taste. The therapeutic effects of quinovin are under trial by the Medical Department.

Quinine in leaves.

15. In the original instructions I had the honour of receiving from the Home Government, I am directed to investigate the blossoms of Cinchona for alkaloids, &c. This has been done. The beautiful and scented blossoms contain no alkaloid, but a considerable amount of quinovin. The act of flowering does not appear to have any direct influence on the amount of alkaloid in the bark—a point on which I have made a careful inquiry—though it is by no means unlikely that blossoming has an indirect effect on the seasonal changes which I discuss below.

Blossoms of Cinchona.

16. In fulfilment of G. O., Revenue Department, 16th January 1869, paragraph 2, I have continued the examination of the wood for alkaloids. I find the wood of *Officinalis*, when dried, to contain 0·0101 per cent. of total alkaloids, of which 0·004 was quinine. This wood does not appear to be of any account as a source of alkaloid; it contains not a tenth of the amount found in the wood of *C. Succirubra*. The wood of *Officinalis* unlike that of *C. Succirubra* is very hard and dense, and may hereafter be found of value.

Wood of *C. Officinalis.*

17. Several remarkable kinds, which are now engaging my attention, have appeared on the plantation. I have many reasons for thinking they are really *hybrids*. None of them which I have examined appear to yield bark of special excellence, but the subject is nevertheless one of great importance, and merits a thorough study.

Occurrence of hybrids.

18. As the age of the various barks increases they lose less weight on drying. Hence, the fresh bark is more productive than it was from another cause besides the increased percentage of alkaloid in the dried bark.

Amount of moisture in barks decreases with age.

19. In 1867 the oldest red bark contained 73 per cent. of water, and the crown barks 69 per cent. They now contain an average of 68 and 64 per cent., respectively. This progressive alteration is what might be expected, and will doubtless continue to take place for many years to come.

20. I have had many opportunities of examining barks grown in the various parts of India on private and Government plantations. In almost every case the quality has been satisfactory. The *C. Succirubra* appears to flourish almost everywhere, and to produce a bark containing abundance of febrifuge alkaloids. Generally speaking, I find the barks somewhat thinner than those of a similar age on the Government Neilgherry Plantations, and yielding rather less quinine and more colouring matter and resin—qualities doubtless resulting from the less elevated sites of their growth. The crownbarks appear to enjoy less favour with cultivators; but the few specimens I have received have always been of good quality.

Good quality of India Cinchona barks generally.

21. The satisfactory quality of the bark of *C. Succirubra* in all South India localities, where the tree will grow at all, appears to be certain; and this statement may in all probability be still further generalized.

Mode of drying the barks.

22. The greater part of the inquiries given in this and foregoing Reports have been concerned with the Cinchona barks in the fresh green state. I have already in other Reports adverted to the advantages that are experienced by dealing with the bark in its natural state. The labour of drying and powdering preparatory to the extraction of the alkaloids is avoided; and in addition to this, from the softness of the tissues, the alkaloids are obtained in a state of solution with greater ease and less expenditure of acid. I estimate the saving from the latter cause at rather more than one-fourth.

The fresh bark is preferable to the dried.

23. The best means of drying the bark so as to preserve, as far as is consistent with economy, the contained alkaloids from alteration is one of the points which I was directed by the Home Government to investigate. I have therefore, during the past two years, at various times conducted experiments with this end both with the red and crownbarks. It would be tedious if I

Experiments made to determine best mode of drying.

were to quote the whole of the numerical results on which I base the conclusions; but in the Appendix to this Report I cite certain of them which indicate sufficiently the influence of the various modes of drying upon the subsequent yield of alkaloids, as determined by analysis. (Appendix A).

Principal possible methods.

24. The modes of drying that I have studied are (1), spontaneous drying in vacuo; (2), drying in a stream of air at about 36°—45°C;* (3), direct exposure to sunshine; (4), drying at a steam-heat, which at Ootacamund is about 96°C. The results were compared with those obtained with the fresh bark.

Effects.

25. The results show that the fresh bark gives a larger yield of crystalline sulphates than that artificially dried, though the difference is usually but slight. If the drying be quickly conducted at ordinary temperatures, as *in vacuo* over lime or sulphuric acid, the effect on the barks is not prejudicial. This is also the case with drying in a stream of warm air. The former conditions are not readily obtainable in practice, and from the cost can in no case be applied. It would, however, not be difficult to devise a system whereby the bark could be dried by a current of artificially warmed air; but the trouble and cost would, I think, under present circumstances, render it unadvisable to adopt such a process if it can be avoided.

Proportion of quinine not altered by drying the bark.

26. The processes of drying were each carefully tried also, in order to ascertain whether the proportional amounts of quinine and cinchonidine were affected by the methods employed. They were found not to be appreciably altered; and hence, in subsequent trials, the amount of total crystalline sulphates obtained was employed as the standard of comparison of the various modes.

General conditions to be fulfilled in drying.

27. The general conditions to be fulfilled in drying the bark as indicated by the results are—to dry it at a low temperature—as quickly as possible—and without prolonged exposure.

A steam-heat frequently injurious to the bark.

28. A high temperature, or even merely a steam-heat, is generally prejudicial to the bark from a remarkable reason. The alkaloids are associated in the bark with a peculiar tannin, the so-called quino tannic acid. This, under moderate heat, absorbs oxygen, and unites with the alkaloid to form a compound, which frequently is decomposed with great difficulty by acids. Hence, when such bark undergoes the ordinary manufacturing-process, a part of the alkaloid does not get into solution; and thus a practical loss takes place from the imperfect exhaustion of the bark. This effect of heat occurs in different degrees, being sometimes very marked, and at other times in but small amount. It is singularly apparent in those crownbarks which abound in colouring matter, especially in var. *crispa*, and was a source of much confusion until the cause was ascertained. Thus, a sample, which when green yielded 3·52 per cent. of alkaloid, after two days' exposure to a steam-heat, gave but 1·92 per cent. The loss appears to affect all the alkaloids equally. That the above explanation is really the true one has been demonstrated by special experiment. Again, if bark be exposed to a temperature

A high temperature alters the alkaloids.

much exceeding 100°C. the alkaloids become altered, and lose their property of crystallization, so that the bark becomes worthless. The foregoing reasons, therefore, exclude artificial heat as a general method for drying the bark.

* These methods were necessarily examined for the sake of comparison.

Sunshine also injurious to Cinchona bark.

29. M. Pasteur has stated on deductive grounds that the drying of Cinchona bark in the sun is injurious. I have abundantly corroborated the general truth of this statement. But to render the change clearly apparent it requires a certain exaggeration in the conditions, such as prolonged insolation, or else exposing the bark in a divided state in order to have an increased surface of action. If this be done a decrease of a half per cent. in the amount of crystalline sulphates obtainable from the bark takes place. If the bark be exposed to sunlight, and at the same time evaporation is checked (as in a box covered with glass), the decrease becomes very marked. If shred bark be allowed to remain a fortnight exposed to the sun of the Neilgherries, the decrease amounts to one per cent.

Bark may with care be dried in the sun.

30. But as the injurious action of sunlight is comparatively slow, and as bark dries rapidly under the fierce sun and dry rarefied air of the Neilgherries, it is not difficult to manage so that, while the action of the light is reduced to a minimum, the conditions of short exposure and moderate temperature may be fulfilled.

Cannot be dried during the south-west monsoon.

31. If recourse be not made to artificial heat it is scarcely possible to dry bark during the south-west monsoon on these hills. But the quality of the bark (as I shall show hereafter) will render any extensive harvesting of bark during that season unadvisable. I feel therefore justified on all grounds in recommending that the bark of the Government Plantations should be dried by natural means only.

Precautions.

32. I have repeatedly satisfied myself that if due care be exercised, the bark may be dried and prepared for export without appreciably deteriorating from the quality it possessed in its fresh state. The precautions to be taken are simple; the bark must be in as large pieces as possible (in order to expose a proportionally small surface), frequently turned, and so managed as to be as short a time exposed as possible. From January to the end of March when the atmosphere is very dry, bark could be dried on stages one above the other so as almost entirely to avoid exposure to sunlight, in which case no deterioration of quality is possible. Under other circumstances, unless the exposure to sunlight be carelessly prolonged, the alteration in quality is practically imperceptible.

Permanence of the alkaloids.

33. Long keeping of the bark in an undried or partially dried state impairs its appearance when subsequently dried. But under such circumstances the quality of the bark is affected to a much less degree than is generally supposed, provided it be not exposed to sunshine. I find by direct trial that bark may be kept more than three weeks without in any degree yielding an inferior amount of alkaloids on analysis. If it be kept six weeks and become mouldy, a deterioration becomes apparent; but it is slight, amounting in my trials to about 0·40 per cent. The alkaloids appear in such circumstances to be very permanent substances, and remain almost unaltered; while other constituents, such as quino-tannic acid, cinchona red, &c., are greatly changed. Even after three months' keeping in a moist place, during which time fermentation accompanied with spontaneous heating took place, I found that at least two-thirds of the original amount of alkaloid was to be obtained from the mouldering mass. In very singular contrast to this is the fact that quinine and cinchonidine are not to be found in the bark of trees that have been dead a short time.

34. The above facts show that, with ordinary management, there is but little risk of deterioration during the harvesting of the bark, provided the simple principles indicated above are kept in mind.

I have been requested to analyse bark which I found subsequently to have been baked in order to dry it. It was, of course, entirely spoilt.

35. Bark carefully dried, kept in a dry state, and analysed at the expiration of six and nine months, respectively, has given me no indications of any deterioration or change whatever. Hence, bark can be exported without loss of quality.

Bark does not perceptibly alter when dry.

36. The above facts appear to furnish answers to the questions which are likely to arise regarding the preparation of bark for exportation. When the drying of bark is carried on with large quantities, it will, of course, be useful to ascertain the exact effect of the above principles under the special circumstances.

Influence of the Seasons.

37. The influence of the seasons on the amounts of alkaloid in the bark of the living Cinchona trees is a subject which merited a full inquiry for several reasons. The best time of the year for collecting bark depends on the time of maximum yield. The knowledge of the variations in the amount of the alkaloids under the influence of external circumstances tends to throw light on those conditions of their occurrence on which the possibility of controlling their formation depends. As soon, therefore, as I possessed means for the investigation of this question, I commenced a series of inquiries. But the subject was found one of considerable difficulty. After nine months' continuance of a series of periodic analyses, I felt some reason to doubt whether my plan of investigation was calculated to exclude disturbing circumstances, some of which might be unknown. I therefore felt it necessary to begin the inquiry afresh, which was accordingly done, with the advantage of knowing the general direction to which the more precise results might be expected to lead.

Importance of inquiry.

Difficulties.

38. A set of six trees was selected from the oldest part of the plantation. A narrow strip of bark was taken from each, and the mean average sample thus obtained was analysed. This was done periodically throughout the year. The strip being but a very small portion of the whole trunk, its loss would not affect the natural changes which take place in the whole. Except at the latter end of the dry season the bark rapidly renewed itself. As a means of safety and control another set of six trees was selected whose bark had the average quality of the first six. From these at various times bark was also taken in order to verify and to complete the results obtained.

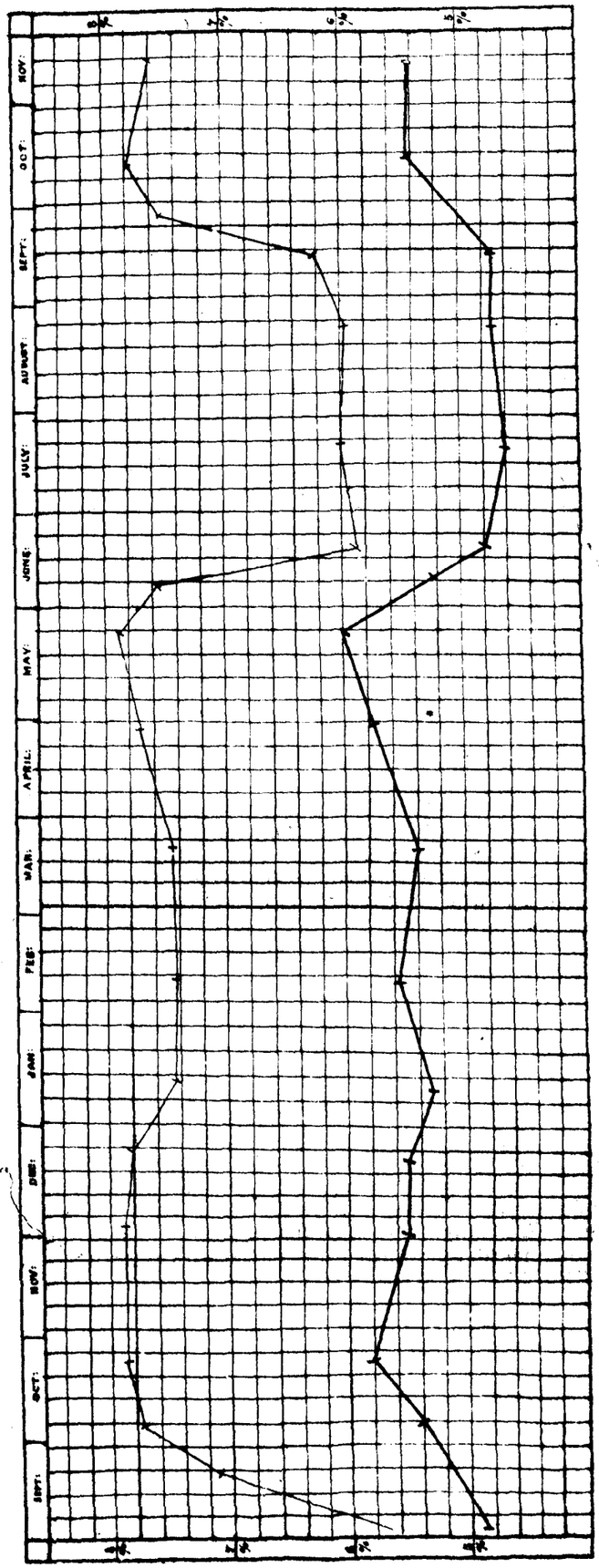
Method adopted.

The changes in composition observed agreed satisfactorily with other observations, and corroborated those which the former inquiry had shown to take place. The means of checking employed preclude the idea of any other cause seriously influencing the results. I therefore report them, with the conviction that they express with fair accuracy the variations in yield of the bark according to the seasons of the year. As a criterion I place most stress upon the amount of total crystallized sulphates, since that, upon the whole, is the truest standard of the commercial and practical value of the bark.

39. In order to render the bearing of the results more obvious to the eye, they may be conveniently given in a graphical form. The following diagram, in which the ordinates of the respective curves represent percentage amounts, and the abscissæ the times, expresses the seasonal changes, and render apparent the numbers which may be obtained by interpolation.

Curve best expresses results.

DIAGRAM



The thin line expresses the total alkaloids.
The thick line expresses the total crystallized sulphates.
The unit of measurement of the abscissæ is one week.

40. The above curves show two "singular points" which are periods of maximum yield. One occurs in October, and the other in May, or nearly at the opposite seasons, or shortly before the beginning and shortly after the cessation of the south-west monsoon. The ascent and descent of the sap are less marked in cinchonæ than in the trees of more temperate climates; but there is a connection between the maxima and the latter processes. The period at which the bark is richest in alkaloids that yield the largest amount of crystalline sulphates is during the month of May.

Discussion of diagram.

41. The above curve shows a very marked decrease in the amount of alkaloid during the monsoon months, so that it is during the dry season that the operations of cropping, &c. must be conducted. During that time not only is the bark better in quality than during the monsoon, but it is more conveniently dealt with. The exact periods of maximum yield do not, indeed, occur at the most convenient seasons; but the amount of alkaloids during the greater part of the winter (if it can be so called) does not greatly differ from the maximum yield. There appears to be no practical reason why a compromise should not be made between slightly opposing grounds of quality and convenience, and why the wide period between November and May should not be that of bark harvest. It is, however, probable that this period must be shortened on other grounds, since the bark at the latter end of the dry season separates with difficulty from the wood. It will always be a loss to collect bark in any quantity during the monsoon.

Consequences.

Time of harvesting.

42. The branch bark appears to share in the progressive changes that are undergone by that of the trunk.

Branch bark.

43. Circumstances have scarcely permitted a similar investigation being conducted with the crownbark trees. The few observations I have made appear to show that those grown at Neddiwuttum vary in yield in a similar manner to their red bark neighbours. The crownbarks of the Dodabet Plantations certainly show a less marked diminution in their yield during the rainy season than the red barks at Neddiwuttum. This is probably a consequence of the climate being not so sharply divided into a very rainy and very dry season as it is at the latter place.

Seasonal changes in *C. Officinalis*.

44. I have considerable reason for believing that the variations in the amount of alkaloids in the bark at various seasons become less marked as the trees grow older. During the first year of my acquaintance with the plantations I found somewhat greater differences in yield between the barks collected during the dry and rainy seasons than the above diagram indicates. This is what might be expected, since the older tissues take a less active share in the vital processes of the plant than those more recently formed. With increasing age and thickening bark it follows that there is more and more tissue which remains comparatively quiescent, and thus prevents the variations in the younger portions from affecting the gross yield to so great an extent.

Variations tend to a minimum.

Conditions upon which depend the amount of Quinine in the Cinchona barks.

45. The alkaloid, which first appears in the bark, is one which has all the properties of quinine, except that of yielding crystalline salts. It is found in very young plants, and in considerable quantity in the freshly formed bark which re-places the loss of strips of original bark, when the latter is removed without injury to the cambium. It forms, indeed, nearly the whole of the alkaloid that

Order in which alkaloids are formed.

is to be found in renewing bark. As time goes on the alkaloid acquires the property of crystallization, and is then *quinine*. Cinchonidine does not appear in any quantity till a later stage. This is no hypothesis, but the conclusion from many concurrent observations. For example, I may cite the following series of analyses of bark of *C. Succirubra* for the first seventeen months of its natural renovation without any artificial protective:—

	I.	II.	III.	IV.	V.
	Four Months.	Six Months.	Ten Months.	Fifteen Months.	Seventeen Months.
Total alkaloids	4·30	5·3	5·03	6·00	5·47
Quinine	4·20	4·4	4·02	3·03	3·65
Cinchonidine and cinchonine	0·10	0·9	1·01	2·97	.....
Sulphate of quinine obtained	0·25	1·56	2·20	2·30	3·12
„ of cinchonidine obtained ...	None.	.....	.....	1·13	1·24

46. These results leave no doubt that quinine is the alkaloid first produced. The gradual acquirement of the property of crystallization with the increase in the amount of cinchonidine is also clearly shown. The order in which the alkaloids are formed in the cells of new and rapidly forming tissue are, uncrystallizable quinine, ordinary quinine, and cinchonidine. Cinchonine is also formed at a late stage.

Quinine first formed.

47. It is thus scarcely possible to resist the conclusion, that it is in this order they are actually formed in the plant. Since the amounts of the first formed alkaloids diminish, and are replaced by others as age increases, an actual conversion of one into the other is at least a legitimate hypothesis.

Actual conversion probable.

48. Though I have never yet succeeded in converting quinine into cinchonidine, or *vice versâ*, by artificial means, the intimate relationship and close resemblance of the two substances taken in connection with appearance of the latter in increasing amounts with the increasing age of the bark lead me to consider it in the highest degree probable that cinchonidine is formed in the tree by the progressive alteration of quinine, and not as an independently formed substance. There are further corroborations of this view on quite other grounds.

Cinchonidine due to alteration of quinine.

49. It is remarkable among the crownbarks that the most rapidly growing trees are richest in quinine, and contain but a comparatively small amount of cinchonidine. If there be trees which, while quite healthy, are stunted in their growth, and in a quiescent state, such trees are almost sure to be poor in quinine and rich in cinchonidine.

Rapid growth favourable to the occurrence of quinine.

50. All the cinchona alkaloids are altered in composition by long exposure to light, but in different degrees. The salts of quinine are particularly sensitive. It is well known

Sunlight inimical to quinine.

that samples of sulphate have to be kept in a shaded or dark place, or else they become discoloured.*

Sunlight appears to encourage formation of cinchonidine.

51. I am by no means justified, by direct evidence, in stating that quinine is converted in the living tree into cinchonidine by the action of light; but it seems certain that such conversion is greatly expedited by that agency. Trees, whose bark has been long exposed to sunshine, and whose growth has been sluggish, always contain the largest proportion of the latter alkaloid.

52. The above observations apply to *C. Succirubra* and *C. Officinalis* and their varieties. I am strongly inclined to believe that the chemical changes connected with the occurrence of alkaloids are identical in the various species, and differ only in degree.

Form in which the Alkaloids occur in the living bark.

State of combination in which the alkaloids occur.

53. The state of combination in which the alkaloids occur in the living bark has not hitherto been known with certainty. As this is a point of great importance, from its bearing on the chemistry of the formation and functions of the alkaloids, I have endeavoured to ascertain it as completely as possible. As this is scarcely the place in which to detail the methods employed in the investigation, I merely state the results.

As determined by immediate experiment.

54. In the bark of *C. Succirubra* four-fifths of the whole amount of the alkaloids are contained in the *solid* state within the tissues (most probably, almost exclusively, in the parenchymatous cells) of the bark in combination with quino-tannic acid. These alkaloid tannates are but slightly soluble in cold water, more soluble in hot, but are quite insoluble in the surrounding plant juices. They thus cannot be very active constituents. They are, in all probability, the stored alkaloids of the bark, of which only a small portion at the most shares in the charges incident to growth. When freshly taken from the plant the substance has a grey color; but rapidly absorbs oxygen from the air, and becomes of a dirty red tint. This substance has all the appearance of the artificially prepared quino tannate, and is, as mentioned above, liable when dried at 96°C. to pass into a state in which the alkaloid is separated with great difficulty. The remaining one-fifth of the alkaloid is in solution in the juice of the bark. It is there associated with quino-tannic acid, quinic acid, and probably also another acid, which exists in small quantity. As the tannic acid present in the juice is amply sufficient to form a tannate with the whole alkaloid present, it seems probable that the juice contains the alkaloids also in form of tannate, held in solution by the free acids.

Occurrence of quinovin.

55. Quinovin is a less abundant constituent than the alkaloids. It is to be detected in the clear juice in very small quantity, but is mainly to be found in the solid cell-contents. As the combination of quinovin with the alkaloid is so readily destroyed by acids, it appears almost certain that the quinovin is in the free state.

Current notions concerning the functions of the alkaloids.

56. A speculative opinion has been long held concerning the functions of the vegeto-alkaloids in the plants producing them, whose importance is so great that its practical

* A slight admixture of cinchonidine sulphate renders it far less easily affected. A specimen of quinine sulphate containing 5 per cent. of cinchonidine salt retains its whiteness, while a pure specimen becomes brown when exposed to the same circumstances.

verification or contradiction is almost necessary to the scientific cultivation of those plants. This hypothesis is mainly due to Liebig, and dates as far back as 1840, and since that time has continued to rest on little else than speculative grounds.

Application of Liebig's "Mineral Theory."

57. It is believed that the alkaloids are the substitutes for the mineral bases which are the constituents of all plants, and which constitute the larger portion of the ash obtained when the plants are burnt. The alkaloids possess the same general properties as these mineral bases; they completely neutralize acids; and comporting themselves in so chemically similar a manner, it is thought that their functions were identical, and that certain tribes of plants were enabled to produce actual substitutes for these necessary bases, which are frequently meagrely furnished by the soils in which they grow.

Applied to the Neilgherry Cinchonæ.

58. The simplicity and beauty of this hypothesis has always rendered it, in the absence of more precise information, a favorite one. On my first acquaintance with the living Cinchonas (*par excellence* the alkaloid-producing plant) there were several circumstances which seemed to show its truth. Among these were the exceptionally large yield of alkaloids in the Neilgherry Cinchonas, combined with singular poverty of the soil of the Neilgherries in lime—a base which is the main constituent of the ash of most plants. These circumstances led me to institute a series of experiments in which the amount of organic bases was compared with the amount of ash yielded by the same bark. This has been carried on with all the species of Cinchonas, and under all the diversity of conditions, I could devise. During the last two and a half years upwards of seventy determinations have been made with this object.

Experimental evidence adverse to the above hypothesis.

59. The results have convinced me that the relations of the organic to the mineral bases is by no means so simple as the hypothesis assumes. The contradictions are numerous. Trees growing under similar circumstances may have the same amount of mineral constituents, while the organic bases are as 1 : 2. The general distribution of the mineral bases is quite similar in Cinchona to that which obtains in other trees yielding *no* alkaloids; and what is still more important, I find that trees grown for two years in a soil made artificially calcareous have not shown any difference either in their yield of alkaloid or amount of ash.

The substitution for mineral bases either untrue or very partial.

60. But there are several cases in which the amount of organic bases do really show a tendency to appear in the inverse amounts, which would result from a mutual substitution. These cases occur, however, in an incoherent manner and can frequently be explained satisfactorily on quite other grounds. **I am therefore compelled to believe that the physiological equivalence of function attributed to the organic and inorganic bases, is either untrue or much more partial than is assumed to be the case in this application of the "mineral theory." I do not, however, propose to abandon the subject, since collateral points remain which require thorough investigation.**

During these inquiries I have received valuable help from Mr. C. Dawson, the Assistant Superintendent of the Neddiwuttum Plantations, which are the most advanced. I therefore take this opportunity of acknowledging my obligations to his knowledge of the details of the present and past operations under his charge, and for the active and intelligent assistance I have constantly received.

APPENDIX A.

The following results form a portion of the grounds upon which the conclusions in the Report are based, and are here quoted for the sake of illustration.

A quantity of the bark finely shred was submitted to the various methods of drying. The various amounts of alkaloid and crystalline sulphates are given in the following table; A being the amounts yielded by the fresh bark :—

Red Bark.

———	A.	Dried at 17° C. in vacuo.	Dried at steam-heat.	Dried in current of air at 35°-45° C.	Dried in sunshine.	Dried in sunshine slowly.
Total alkaloids	6·89	6·67	5·92	6·64	5·90	5·85
Crystalline sulphates obtained ...	6·12	5·98	5·31	5·89	5·28	4·78
Comparative amounts of acid required to neutralize the alkaloids	13·2	13·1	11·8	13·1	12·0	11·6

Mixed Crownbarks.

———	A.	Dried at 17°C. in vacuo.	Dried at steam-heat.	Dried in current of air at 35°-45°C.	Dried in sunshine.	Dried in sunshine slowly.
Total alkaloids	3·93	3·92	3·52	3·85	3·63	3·04
Crystalline sulphates obtained ...	3·67	3·52	3·01	3·50	3·11	2·88
Comparative amounts of acid required	7·2	7·0	6·6	6·6	6·7	5·9

The amounts of crystalline sulphates obtained were adopted as the most accurate numerical standard of comparison.

APPENDIX B.

The remarkable effect produced in some barks by exposure to a temperature of boiling water with access of air is shown by the following analyses of the same bark. In A analysed while fresh; in B after three days' exposure to a steam-heat :—

———	A.	B.
Total alkaloids	3·52	1·93
Quinine	2·48	1·03
Cinchonine and cinchonidine	1·04	0·90
Quinine sulphate obtained	2·46	0·88
Cinchonidine sulphate obtained ...	0·66	0·56

The peculiar insoluble compound which gives rise to the above apparent loss of alkaloid is decomposed by the action of alkalis, and the missing alkaloid can thus, in great part, be recovered. Nearly all acid extracts of Cinchona barks, if evaporated to dryness at a steam-heat, undergo a similar change. Certain methods occasionally employed in the analysis of Cinchona barks (such as that known as Wöhler's) yield inaccurate results from this cause.

(Signed) KRISTNIENGAR.

Order thereon by the Govt. of Madras.

The Right Hon'ble the Governor in Council has perused Mr. Broughton's satisfactory Report with much interest. It will be forwarded for the information of the Right Honourable the Secretary of State, and copies will be furnished to the Government of India, the Local Governments, and to the Governments of Ceylon, the Straits Settlement, Batavia, and the French Settlements in India.

2. His Lordship in Council does not understand why the further plantation of the red bark variety was not discontinued in favour of those mentioned in Mr. Broughton's Report dated 24th April 1869. The necessary instructions to this effect should have been issued by the Commissioner of the Neilgherry Hills on receipt of the G. O., under date 19th June 1869, No. 1740; but, as observed by Mr. Broughton in his foot-note, in the Orders of 9th November 1869, Nos. 2935 and 2936, specific instructions have been issued for the extended cultivation of the new varieties.

3. Mr. Broughton's experiments on the leaves, blossoms, and wood of the Cinchona tree are highly interesting, and his remarks on the best system of drying the bark and regarding the proper period of the year for collecting it, will prove of great value to all who are connected with the cultivation.

(True Extract).

(Signed) R. A. DALYELL,
Acting Secretary to Government.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

IRRIGATION OPERATIONS OF FUSL 1279 BEE IN THE N. W. PROVINCES UP TO 31ST JANUARY 1870.

CANAL DIVISIONS.	WATER DISTRIBUTED DURING JANUARY 1870.				NAVIGATION RETURN, GANGES CANAL.										LAND IRRIGATED (APPROXIMATE).		RAIN-FALL.	REMARKS.
	Depth in Canal at Regulating Gauge.		Gross Consumption, cubic feet, per second.		Nature of Traffic.	Up.				Down.				Total Up and Down.			Total from 1st April 1869 to 31st January 1870.	Average of nine previous years for the same period.	
	Full supply, feet.	Actual through-out, feet.	Estimated full Discharge.	Actual average throughout.		Mds.	No.	Mds.	No.	Mds.	No.	Mds.	No.	Mds.	No.	Zillah.	Acres.		
GANGES CANAL.																			
Northern ...	9·00	7·95		428	Grains :—											Saharunpoor ...	35,264	17·5	38·0	The mean volume of the Ganges Canal passing the Roorkee Gauge during the month was 4,675 cubic feet per second. The volumes discharged by the canal were as follows :— Tail, Etawah Branch 42 cubic feet. Escapes ,, ... 76 ,, ,, Tail, Cawnpoor ,, ... 271 ,, ,, Escapes ... no returns. 389 cubic feet. The Cawnpoor and Etawah Branches have alternate weeks of high and low supply. The gauge readings show the mean of the month. Owing to the heavy and general rain in December, there was no great demand for water till the close of the month. Such demand as existed on the Ganges Canal during the first part of the month was for crops sown on sandy soil. The Futtehpurh Branch having no demand for water at its tail, could only run half supply till the 20th of the month, to the inconvenience of irrigators at the head of the branch. On the Eastern Jumna Canal the demand during the whole of the month was greater than the supply, as the Jumna River was very low, and the available supply had to be divided proportionally between the Western and Eastern Canals. Towards the end of the month, things began to wear a critical aspect, owing to the enormous demand for the first waterings and cries for the second of early sowings, which suddenly arose.			
Meerut ...	6·80	6·54	1,389		Jowar ...											Moozuffernuggur ...	47,849	28·2	25·4	
Futtehgurh ...	6·50	5·13	304		Oorud ...											Meerut ...	102,922	16·6	23·3	
Boolundshuhur	5·75	5·06	206	5,585	Mote ...											Boolundshuhur ...	25,643	21·0	19·8	
Allygurh ...	6·00	4·80	673		Rice ...											Allygurh ...	32,942	23·7	25·5	
Etawah ...	4·80	2·62	606		Wheat ...											Mynpoorie ...	5,904	19·3	24·2	
Cawnpoor ...	6·00	4·23	683		Mucka ...											Futtehgurh ...	585	26·7	24·4	
					Bajra ...											Etawah ...	8,437	25·0	28·0	
					Gram ...											Cawnpoor ...	12,651	33·8	31·1	
					Moong ...											Mynpoorie ...	4,329	33·4	29·9	
					Mussee ...											Futtehgurh ...	15,995	39·1	28·6	
					Total ...	7,373	...			25	...					Etawah ...	30,637	34·2	29·7	
					Cotton ...	...	...			23,306	...					Cawnpoor ...	4,094	70·9	68·5	
					Oil-seed ...	1,160	...			450	...					Debra Doon ...	41	28·4	29·3	
					Salts ...	...	...			920	...					Bijnour ...	140	44·9	42·9	
					Metals ...	3,370	...			12,520	...					Terai ...	4,435	40·2	36·3	
					Building Materials ...	142	...			3,359	...					Bareilly ...	839	53·1	33·5	
					Miscel. Goods ...	5,116	...			22,769	...					Jhansie ...	422	38·5	31·4	
					Firewood ...	3,450	...			...	...					Humeerpoor ...				
					Bamboos ...	...	...			...	...									
					Bullees and Tors ...	...	...			514	...									
					Kurrees ...	...	...			...	...									
					Logs ...	...	...			253	...									
					Miscel. Timbers ...	...	...			...	...									
					Passengers ...	...	...			...	...									
Total ...	...	...	...	5,410	Total ...	20,611	767			63,349	42,167			83,960	42,824	Total ...	333,129	...	...	

ALLAHABAD;
The 18th February 1870.

W. G. ROSS, *Lieut., R. E.,*
Asst. to Chief Engr., Irrigation Works, N. W. P.

GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 11th March 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding*.
His Excellency the Commander-in-Chief, K. C. B., G. C. S. I.
Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey, C. S. I.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
The Hon'ble F. R. Cockerell.

FEMALE INFANTICIDE BILL.

The Hon'ble MR. STRACHEY presented the Report of the Select Committee on the Bill for the prevention of female infanticide.

INDIAN WEIGHTS AND MEASURES BILL.

Colonel the Hon'ble R. STRACHEY applied to His Excellency the President to suspend the Rules for the Conduct of Business, to enable him to introduce the Bill to regulate the Weights and Measures of British India. He said that he made this request to render possible what he feared would otherwise hardly be the case, the passing of this measure before the Government of India left Calcutta, if it should be approved by the Council after the detailed consideration which they would be asked to give.

The Bill was very simple in its form, and its object was to give effect to the conclusions of the Government of India on the general question which had now been before the public for more than a year. The Council would, he thought, be fully as able to discuss the principles of the Bill today as they would have been had the longer period usually allowed elapsed since the Bill was in the hands of the members of the Council.

He might mention that it was the desire of the Agency of the East Indian Railway Company to adopt the new unit of weight on the opening of the Chord Line Railway, which might be expected to take place towards the end of the coming rainy season. The opening of this line would necessitate the re-arrangement of the whole of the charges for goods sent between Howrah and the stations above the end of the new line, and new tables would have to be prepared in consequence. The Agency wished to make the change as far as possible a final one, by adopting, in the new tariff, the ton of 1,000 kilograms as the unit on which their charges were to be made. It was evidently desirable that the new weights should, if possible, be authorised by the legislature before they were adopted by the Railway Company, and it was therefore desirable that the law should be passed before the Government of India returned to Calcutta.

It would, he thought, be generally considered that a Bill relating to the weights and measures of India should be fully discussed by the non-official

members of this Council, as well as by those members who represented Madras and Bombay, and the Government would be reluctant to deal with such a measure at Simla.

If the Rules were not suspended in the present case, he feared that the time left for the consideration of the details of the Bill would be so short, and would come into a period when the attention of the Council would necessarily be given to other questions of great importance, that there was much danger that the Bill could not be passed at all before the Government left Calcutta.

The President declared the Rules suspended.

Colonel the Hon'ble R. STRACHEY then introduced the Bill and moved that it be referred to a Select Committee with instructions to report in a fortnight. He said that, after the explanations that he before had the honour to offer on the subject of the Bill, he need not detain the Council with many remarks on the present occasion. The first object of the Bill was to declare, in an authoritative manner, the determination of the Government of India that certain new weights and measures should eventually be received as the established weights and measures of the country. These weights and measures, it would be seen, were to be based on the units of the metrical system. But considering the difficulty of accomplishing any fundamental change in such matters otherwise than gradually, it had not been thought desirable to affirm that the precise system of weights and measures commonly known as the metrical system should be adopted in its entirety, and it was left to the discretion of the Government of India to declare, from time to time, what the precise denominations and magnitudes of the authorized weights and measures were to be, subject to the proviso that they should all be based on the metrical units. In like manner it would not be required that the sub-divisions of all the new weights and measures should necessarily be expressed in decimals, though a preference would be given to decimal divisions, if it was thought practicable to ensure their adoption. The formal declaration by the Government, under the provisions of a legislative enactment, that it had adopted the resolution to accept such a system of weights and measures to the exclusion of all others, would, he ventured to think, be one of the steps most likely to bring about a spontaneous adoption of the new system without any pressure under an obligatory law. Until the Government had pronounced in an unmistakeable way its intentions, it was not to be expected that persons engaged in trade would run the risk of supplying themselves with new weights or measures, and adopting them in their business, when some fresh declaration of the Government might, at some future time, render them all useless. He (COLONEL STRACHEY) looked confidently therefore on the declaration on this point which the Bill contained as being likely of itself to do a great deal towards the ultimate general adoption of the new system, and in fact to make practicable, at no very distant period, the application of the other parts of the Bill, first in the larger towns, and subsequently and by degrees in the country generally. The Bill made a distinction between weights and measures. No power was taken to require the compulsory use of measures excepting in Government offices, and by municipal Bodies and Railway Companies. The compulsory powers affecting the general public only referred to weights. This distinction was made in accordance with the conclusions of the Government that it was not desirable at first to deal with anything but the weights of the country, the use of which, in the transactions of everyday life, stood on a totally different footing to the use of measures. As regards the Government departments, of course it would have been quite optional with the Government to determine at any time what weights or measures they should use, without legislation, supposing that legislation had not been thought desirable on general grounds. But, for the reasons he had already given, it was very expedient to show what the intentions of the Government were, and to pledge the Government to move, when it thought fit so to do, in a certain direction and no other. The

Bill therefore declared that the Government might, when it thought fit, require the use of the new weights and measures by all Government departments. It had been thought proper to deal with municipal offices in the same way as those of the Government. In fact, in the majority of cases, the influence of the Government would no doubt have sufficed to ensure this without a legislative provision for it. But the same argument applied to such cases as in that of Government departments, and these municipal bodies, when not directly under Government influence to such an extent as would have ensured their acceptance of the wishes of the Government, might reasonably be looked to as bound to give the Executive Government all practicable help in carrying out a great public improvement such as that which this Bill contemplated. The Railway Companies had been included with the Government and municipal Bodies for similar reasons to those he had just explained. But in their case there was, in addition, an obvious pressing necessity for establishing uniformity in the weights they used. He (COLONEL STRACHEY) was glad to say that the chief of these great and influential bodies had most cordially accepted the proposals of the Government of India, and, as he had already stated, the Company in which Calcutta was most interested—the East Indian—had even outrun the Government in its desire to co-operate in the difficult task of introducing uniformity into the weights of the country. He was glad to have this opportunity of expressing the special obligations that he felt were due in this matter to the Agency of the East Indian Railway Company, and in particular to their able Chief Engineer, Mr. Sibley, and to Mr. Cecil Stephenson.

Although the Government had not yet taken any resolution in respect to the adoption in any of its departments of any of the new measures, it was probable that the convenience of the department with which he was himself specially connected, that of Public Works, would before long lead to the adoption of the metre as the unit of length for the purposes of that department. If this was done, it would be an almost necessary consequence that the Railway Companies should follow the same course. He might mention that he had consulted the heads of all the Engineering Departments of all parts of India, including the Railways, and that, while three-fourths of the officers consulted expressed an opinion that the simultaneous adoption of the metre and kilogram as the units of length and weight was advisable, only one-fourth opposed that conclusion, and of these several opposed any change. He thought that, on such a subject, so large a preponderance of opinion might be received as conclusive, at all events of the certainty that any decision of the Government to adopt the metre as the unit of length for engineering purposes would be well received and cordially responded to. As he (COLONEL STRACHEY) before observed, it was only in the case of weights that the Government desired to obtain any compulsory powers. The Bill provided that, when the Government had satisfied itself by a local public enquiry that the adoption of the new weights in any locality was expedient, it might be ordered. A power was then given to inflict small fines on persons using weights other than those authorized. Also a power was given to search for unauthorized weights. This was the whole of the compulsory portion of the Bill, and the power of inflicting such fines was limited by a proviso that it must be proved, before a conviction took place, that the authorized weights were procurable for sale at the time and place. The rest of the Bill might be described in general terms as making provision for a proper system of verification and inspection of weights and measures. Experience had everywhere proved that, to ensure proper correctness in the weights and measures of any country where weights and measures were regulated by law, a system of verification and inspection was essential. The verification under the Bill was proposed to be extended to balances as well as to weights. No doubt a considerable length of time must have elapsed before the provisions of this part of the Bill could be put into operation in a systematic manner over the country generally. But the adoption of properly verified weights of the new description in the chief towns must before long lead

to the adoption of similar weights in the rural districts, from which the supplies of produce came which formed the articles of trade in the towns. It was only by a gradual change extending over a long period of time that ultimate success could be obtained in the substitution of a uniform system of weights in place of the infinite variety of existing local weights. They must begin on a moderate scale, and by degrees introduce the new system, first in the largest towns, and afterwards in those of less size, until, eventually, the chief centres of trade had become habituated to it. The process would necessarily be slow, like that of education, but the object in view was of great social importance, and they must be content to attain it by the only means through which it could be attained.

The Hon'ble MR. STRACHEY said that Colonel Strachey had explained so fully the objects of the Bill that he only wished to make a very few remarks on the subject. The reasons which led the Government of India to the determination to adopt the conclusions which the Bill was intended to carry out had been before the public for more than a year, and he believed that he might safely say that they had been generally accepted by all the more intelligent classes of the community as the best which, under the circumstances, were possible. There was, however, one point on which there had been a good deal of misconception, and although the matter had been referred to by Colonel Strachey, MR. STRACHEY would like to say a few words regarding it. There had been a not uncommon impression that, in determining to adopt the kilogramme of the metric system as the unit of our new system of weights for British India, the Government was to some extent influenced by considerations of a theoretical nature, and that it chose that unit because it believed it to be theoretically and scientifically the best. This he would venture to say was a complete error. The Government did not choose the kilogram as the new standard of weight on any such grounds, and this had been distinctly and fully explained in the papers which had long been before the public and the Council. The Government believed, as Colonel Strachey had all along declared in the series of valuable papers which had led so greatly to the settlement of this question, that all standards of weight and measure were essentially arbitrary, and that no existing standards, whether of the metric or any other system, had really any intrinsic value of their own. The Government adopted the kilogram as a standard of weight for no theoretical reasons, but simply because it was convinced that this was the most convenient unit of weight that could be adopted in the interests of the people of India. It was this conviction alone which led His Excellency's illustrious predecessor, Lord Lawrence, to the conclusion that we ought to go to the metric system for our standard of weight, and he might safely say that no man could be found who was less likely than Lord Lawrence to be led away in such a matter as this by purely theoretical considerations. Lord Lawrence and his Government and the Secretary of State, MR. STRACHEY would repeat, chose the kilogram as the standard of weight, because they were convinced that it was the most convenient standard for the people of India that could possibly be chosen, and it was their conviction, not only that it would be the most convenient at some future time, but that it was the most convenient at the present moment and for the wants of the present generation. The reasons which led the Government to that conclusion had already been fully stated by Colonel Strachey and in the papers before the Council; but MR. STRACHEY would repeat some of those reasons which seemed to him to have a special importance. These papers shewed that it had been generally admitted in all parts of India, that in the interests of the people the most convenient unit of weight which could be adopted was the well known weight called the ser. The existing ser varied greatly, but it might be said generally that it varied from $1\frac{3}{4}$ to $2\frac{1}{2}$ lbs. English, and its average weight might be reckoned at $2\frac{1}{4}$ lbs. Consequently, the Government was led irresistibly to the conclusion that the most convenient unit would be a weight of about $2\frac{1}{4}$ lbs. English. The old British Indian or Government ser was equal to very little more than 2 lbs.

That weight, as Colonel Strachey had already explained to the Council, had ceased to have any legal existence, the law on which it was based having been repealed, but it never came into common use. One of the main reasons of its unpopularity was the fact that it was considerably below the average weight of the local sers. MR. STRACHEY thought (as he had written in a paper now before the Council) that there could be no question that the general belief of purchasers that loss would be entailed on them by the diminution of the standard-weight was not merely a fanciful belief. In reality, that belief was an expression of the well known fact that prices depended, not only on competition, but to a very great extent on custom. The Government was thus, as he had said, led to the conclusion that, in the interests of the people of India, the most convenient ser that could be adopted would be one considerably larger than the old so-called Government ser, and that it ought to be equal to about $2\frac{1}{4}$ lbs. English. Now it so happened that, by what he might call a fortunate accident, this was for all practical purposes the precise weight of the kilogram of the metric system, and that being so, when the Government adopted the kilogram as the new standard, it was adopting as close an equivalent as could be found to the average ser which had been generally admitted to be the most appropriate unit of weight.

He would not speak now of the many other conveniences and advantages which the Government believed would follow from the adoption of the proposed unit for our new system, but he thought the papers before the public would convince every one who took the trouble to study them, that the proposals of the Government had been really based on no theoretical conclusions, but simply in consideration of the real convenience of the people of India. At the same time, of course, the Government felt that it was an immense advantage that, owing to what he had called the fortunate accident that the kilogram was equal to the ser most commonly adopted throughout India, we should obtain a standard which would give us the means of placing our system of weights in harmony with the system which already prevailed in the greater part of the civilized world, and which there could be very little doubt would ultimately be adopted by England herself.

The results of the proposed measure would of course be very slow. The Government was not so foolish as to suppose that it could force on the people of India, suddenly, any new system of weights, nor had the Government the remotest idea of attempting anything of the kind. The steps must be extremely gradual, and he thought it very probable that the present generation would not see completed the reform which they were now commencing. But it might be confidently said that every step wisely taken to bring about certainty and uniformity of weights and measures would be in the highest degree beneficial. The inconvenience, and, worse than that, the endless and abominable frauds to which the poorer classes were now exposed by the confusion and diversity of weights, were most lamentable, and he thought, as Colonel Strachey had observed, that it was really wonderful that we should have arrived at the year 1870 before any measures had been taken to reform the present state of things.

The Hon'ble SIR RICHARD TEMPLE said that he approved of the substance of the Bill, and concurred generally in the observations that had been made by the Hon'ble mover of the Bill, and by the Hon'ble Mr. Strachey; but there was one remark which he wished to make. In section 2 of the Bill he found the words "which was equal to the kilogram known in France as the Kilogramme des Archives," and, in section 3, there were the words "which is equal to the metre known in France as the Métre des Archives." SIR RICHARD TEMPLE would like to omit those expressions in both those sections as surplusage and not necessary for the real purposes of the Bill, and also as being somewhat strange and not quite consistent with the practice of British legislation in India. Why there should be a reference to foreign weights and measures he did not understand. Reference to standard British weights and measures would be quite intelligible, because India formed a part of the British

Empire. If the new ser and the new metre were equal to the standard weights and measures of France, that was an advantage no doubt, but still, that in no way, primarily or secondarily, directly or indirectly, affected the object of the Bill. As the Hon'ble Mr. Strachey had correctly observed, the object in forming the new ser was not to produce uniformity with the standard on the Continent of Europe, but to form a standard which would be convenient solely for India, which would embody the average standard prevailing here: that being the case, what was the use of inserting any reference to a foreign standard and denomination? They were a British legislature, and why should they go beyond the British nomenclature. He (SIR RICHARD TEMPLE) presumed that other countries did not allude to the British weights and measures. The words to which he had referred were foreign to the purposes of the Bill, and were especially unnecessary, inasmuch as the British equivalent of the new ser was stated in the Bill with great minuteness and precision. It would be rather confusing than otherwise to add a second and foreign equivalent: the Bill would be quite as good, if not better, without these French equivalents, and he would therefore suggest the omission of those words.

The Hon'ble MR. BULLEN SMITH said that he desired in one single sentence to say with what great satisfaction he saw the introduction of the present measure. He felt, as a business-man, that the inconveniences of which mention had been made were not merely ideal ones. Even here, in the Presidency town, we had different sorts of maunds and sers, and as our transactions extended to the Mofussil, the difficulties and inconveniences increased. It was not surprising that there were some objectors to the measure, but he felt convinced that, when the measure was matured, even those who now objected would accept it as a substantial reform and substantial convenience to all engaged in trade.

Colonel the Hon'ble R. STRACHEY said that he desired to make a short explanation in reply to what had fallen from the Hon'ble Sir Richard Temple. Objection had been taken to the reference, in sections 2 and 3 of the Bill, to the standards of weight and measure in France known as the Kilogramme des Archives and the Mètre des Archives. COLONEL STRACHEY thought that Sir Richard Temple had overlooked what was an essential part of any system of weights and measures, that the only standards that could be used were what in scientific language were termed *material* standards. What was proposed to be the basis of the new system of weights for India was the precise weight of that particular piece of metal which was preserved at Paris, and went by the name of "Kilogramme des Archives." It must be nothing more and nothing less, and in no other way could a precise definition of the new ser or "kilogram" be obtained. It had been ascertained, it was true, some years ago, that two pounds and rather more than two-tenths of a pound avoirdupois were equal in weight to that piece of metal, and a reference had been made to that circumstance in the Bill. But the fundamental fact was that it was the weight of that particular piece of metal which was a kilogram, and the reference to the English weights was only explanatory. Subsequent weighings of the particular kilogram referred to might give results slightly differing from those first arrived at, and, owing to this, the stated equivalent in English weights might be found not to be quite exact. It was an exceedingly difficult task to ascertain with complete accuracy the weight of anything, no two operations producing precisely identical results. Therefore the only safe and exact plan was to refer to some one specific standard piece of metal on which to base any system of weights.

The same remarks would apply with respect to the metre as a standard of length; the metre would be (according to the particular standard adopted) the distance between the centres of two studs at the end of a piece of platinum or other metal of a certain definite length, or between two lines engraved on

it. That was a metre, nothing more and nothing less. In this way the English yard was defined, and it was the only way in which any measure could be defined. The law simply said that a mass of metal was deposited as the standard of weight and called the pound, and that a certain bar of metal was deposited as the standard of length, the distance between specified marks on which was the yard. For these reasons he had thought it necessary to introduce the specific reference to the material standards of weight and length kept at Paris.

Major General the Hon'ble SIR HENRY DURAND said that he did not understand the objection raised by Sir Richard Temple to be precisely that to which Colonel Strachey had replied. Sir Richard Temple, as SIR HENRY DURAND understood him, objected to having a foreign standard instead of an English one: it did not matter whether the English standard was precisely the same as the foreign standard advocated by Colonel Strachey or not, though certainly it was preferable to have it precisely the same. SIR HENRY DURAND quite agreed that it would be of immense commercial advantage, as well as a great simplification in trade transactions, that the weights should be precisely the same as those in use on the Continent of Europe; but the objection taken was that the standard should be an English standard, and, if he understood his hon'ble friend, he would put it in this way. Suppose a contention arose before the Courts with reference to the standard, and it came to a question of reference, how were you to carry out a reference of that sort to a foreign standard in a foreign capital over which we had no sort of control, and in the case of a war occurring between the two countries, how were you to carry out the reference? In the objection raised, there was a practical conclusion that it would be as well to eliminate the words which had been referred to, and to make the standard a practical English standard, although precisely the same as the French standard.

The Hon'ble MR. STEPHEN said that discussions of this kind were better suited to the Select Committee to which the Bill would be referred. He would, however, just make one remark to remove a slight misconception that appeared to exist. He presumed that the Government of India would have no objection to having a standard of the exact weight and keeping it in Calcutta. A standard was a material thing, and the keeping of such a standard would tend to the convenience and advantage of the mercantile community.

His Excellency the COMMANDER-IN-CHIEF said that he thought that the distinction taken was one of words rather than of substance. As he understood the Bill, they were about to introduce into India a system of weights and measures exactly similar to the system existing in France for many years. It appeared to His Excellency that, if they went to give an exact definition of the system they were about to introduce, they could hardly make the law plainer than by making a reference to the system which they were about to copy. He could not understand that there was anything degrading to the English law because it had reference to the system of weights and measures of another country, when we were about to copy that system. We could not describe that system merely by reference to a certain weight or measure; what we wanted was a practical reference to that which had been accepted scientifically as a standard. He could not see that the distinction was anything more than one of words and not of substance.

Colonel the Hon'ble R. STRACHEY said that the remark which had fallen from the Hon'ble Mr. Stephen entirely concurred with his own views, and that, in fact, the provisions of section 6 of the Bill entirely met the point that had been raised. There were to be provided, for each district in India for which the Government considered it necessary to provide standards, material standards which would be the only standards recognized in that district. The Bill

declared how the magnitude of the new standards was to be ascertained, but it was left entirely to the Governor General in Council to take the needful steps for providing the standards, and for securing their proper conformity with the description that was given of them in sections 2 and 3 of the Bill. Such standards having been provided, no question could arise regarding their accuracy under the law.

The Motion was put and agreed to.

The following Select Committee was named :—

On the Bill to regulate the Weights and Measures of British India—The Hon'ble Messrs. Strachey, Stephen, Gordon Forbes, Cowie, Chapman, Bullen Smith, and Cockerell and the Mover.

The Council adjourned to Friday, the 18th March 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl.
for making Laws and Regulations.

CALCUTTA,
The 11th March 1870.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street Calcutta.*

No. 13 of 1870.

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, MARCH 26, 1870.

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GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 18th March 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding.*
His Honour the Lieutenant Governor of Bengal.
His Excellency the Commander-in-Chief, K. C. B., G C. S. I.
Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble Gordon S. Forbes.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
The Hon'ble F. R. Cockerell.

OBSOLETE ENACTMENTS BILL.

The Hon'ble MR. STEPHEN introduced the Bill for the repeal of certain obsolete enactments, and moved that it be referred to a Select Committee with instructions to report in a fortnight. He said that, when the Bill was last before the Council, he explained the object with which it had been introduced, which was to relieve the Statute-book of a considerable number of obsolete

enactments as a step towards the consolidation and reproduction, in a better form, of the Regulations and Acts in force. The Bill itself consisted of only one section, which had been worded with great care. The wording had been taken from a Statute prepared in England by the most experienced Parliamentary Draftsmen, and he might shortly describe its effect. It was to repeal or sweep away a quantity of Acts which had become useless, but not to invalidate any institution dependent on them or any Act passed under their authority. There was no clause providing that the repeal of repealing Acts should not revive Acts repealed by them. But it was not necessary to have a provision to that effect in the present Bill, because, by the General Clauses' Act, I of 1868, it was provided that, in order to effect the revival of a repealed Act, it should be necessary expressly to state such purpose; it would therefore now be sufficient simply to repeal the repealing Act. The schedule to the Bill was of great length, but the length was more apparent than real. A very large portion of it consisted of the repeal of repealing sections of Acts, the object being to render the Statute-book as compact as possible. He proposed to repeal every repealing section yet passed, down to the repealing section of the Court Fees' Act, VII of 1870. He hoped that some other less cumbrous way might be devised of carrying out repeals in future. That accounted for a considerable number of the sections repealed by the present Bill. Some persons might think that it was hardly worth while to effect such a small reform; but the Council would see the extent to which the mere titles of the sections amounted, and it was obvious that the sections themselves must amount to much more. A good many repealed Acts were needless because they had done their work. For instance, Acts like 37 Geo. III, c. 142, s. 17, which provided for the transfer of records from one court to another: those transfers having been effected long since, there was no use in keeping the Acts providing for the transfer on the Statute-book. So, a statute like 11 Geo. IV & 1 William IV, c. 75, for the relief of sufferers by the insolvency of a Government officer in Madras many years ago, was no longer necessary. Other Acts had been superseded without repeal; as, for instance, Act XI of 1844, as to the administration of justice and despatch of business in the Supreme Court at Fort William, had been since superseded by the Charter and the Code of Civil Procedure. So, several enactments with regard to salaries and pensions had been superseded by later enactments. Besides those enactments which had become superfluous, and besides the repeal of superfluous sections, there were a certain number of Acts of Parliament which the Council had a right to repeal under the Indian Councils' Act, and which, although in force, had absolutely ceased to have effect by lapse of time. There were some extraordinary provisions in two statutes of George the Third (21 Geo. III, c. 70, secs. 11 and 15, and 37 Geo. III, c. 142, s. 15) about the registration of Natives of India who held office, who were incapacitated from receiving salaries unless registered. These enactments, if acted upon, would produce most disastrous results. There was also a statute (33 Geo. III, c. 52, s. 137) which incapacitated all Her Majesty's subjects from various branches of trade, which rendered it penal in them, for instance, to trade in rice, tobacco or betelnut, and which would enable evil-disposed persons to bring actions for the purpose of harassing others. There were not very many Acts of this nature, but there were a certain number, and he hoped they would be able to sweep away the whole of them, and to take away a great number of provisions which were unsuited to the present times. There were also some obsolete provisions which empowered the Governor General in Council to hold Quarter Sessions four times a year. He did not know whether the Governor General in Council ever had done so; but the provision (which was to be found in 13 Geo. III, c. 63, s. 38) was certainly useless now. There were also other Acts conferring powers on the Governor General in Council, which were also clearly inapplicable to the present times: they applied to the time when the Governor General in Council was an appellate Court of record. It was just as well that these provisions should be put an end to, even if only

to shorten the Statute-book. All these matters would be carefully considered in Committee, so that nothing should be repealed which was of use and ought to remain in force. He had every hope that the result would be to diminish the Statute-book to a considerable extent, and thus be a step towards the consolidation of the law and the preparation of a new edition of the Statute-book in a better form.

The Motion was put and agreed to.

FEMALE INFANTICIDE BILL.

The Hon'ble MR. STRACHEY moved that the Report of the Select Committee on the Bill for the prevention of female infanticide be taken into consideration. He said that the Select Committee had made very few alterations, for the most part of no great importance, in the Bill as introduced. The principal alterations were these:—It was originally provided that rules should be made for prescribing the manner in which information should be given to the proper officer of births, marriages and deaths. Doubt was expressed whether, as the section was originally worded, it would be open to the Local Government to prescribe by whom information should be given. To remove that doubt, an alteration had been made. The Committee also recommended that the rules should provide that information should be given when births, marriages and deaths were about to occur. A clause had also been added to section 6, providing that, in the case of neglected children, the Magistrate of the District might compel the person responsible to make a monthly allowance for their support, not exceeding fifty rupees. Some other verbal alterations had been made; among them one, which was an obvious improvement, in the title of the Bill.

There was nothing else which it was necessary for him to refer to, the object of the Bill having been so fully explained on former occasions. The Bill had been so universally approved in all quarters, that it seemed unnecessary to take up the time of the Council in referring to the matter further. If the Bill should today receive the sanction of the Council, it would immediately be the duty of the Local Governments and Administrations to whom the Bill referred to proceed to make rules under the Act. It would be obvious that the success or failure of the measure would depend on the manner in which the rules were made. The Government would have the great advantage, as had already been stated when the time came for drawing up the rules, of the advice and co-operation of His Highness the Mahárájá of Jaypúr, which MR. STRACHEY was sure would be of high value and importance. He would only add that he thought they might confidently hope that the result of this measure would be to enable the Government to repress this abominable practice, which had too long been suffered to remain as a reproach to our administration.

The Motion was put and agreed to.

The Hon'ble Mr. Strachey then moved that the Bill as amended be passed.

The Motion was put and agreed to.

NATIVE PASSENGER SHIPS BILL.

The Hon'ble MR. CHAPMAN introduced the Bill to make further provision for the regulation of Native Passenger Ships, and moved that it be referred to a Select Committee with instructions to report in a week. He said that the chief object of this Bill was to prevent the overcrowding of Native Passenger Ships proceeding to ports in the Red Sea with pilgrims *en route* to Mecca. When he obtained leave to introduce it, he instanced to the Council some of the cases of overcrowding that had recently been brought to notice, and which had induced the Government to take action in this matter. He thought it would

be impossible to exaggerate the sufferings the passengers must have been subjected to on those occasions—sufferings which must have equalled any which slaves in former days endured when making the middle passage. There was, however, this material difference between the two cases. Here, the sufferings were voluntarily incurred, and they had to protect the people against themselves. The Muhammadans set so high a value on a pilgrimage to Mecca that they were willing to undergo any amount of distress and privation to accomplish it; and the poor, who were only able to undertake the journey on the cheapest terms procurable, were not, under the circumstances, likely to complain of the treatment they were subjected to. He thought the fact of these sufferings being to a great extent wilful ought not to prevent them from endeavouring to lessen them as much as possible. A very intelligent and influential Muhammadan gentleman had recently told him (MR. CHAPMAN) that his co-religionists would be most thankful for any measure that would have the effect of mitigating the hardships they now had to encounter in making these pilgrimages. Another reason for legislating in this matter was this:—The Ottoman Government had of late years subjected all vessels arriving from India to very strict quarantine; and the belief was general that cholera and other diseases were introduced into Europe through Indian pilgrims arriving at Mecca. Whether this belief was well founded or not, he thought it behoved the Government to take care that proper sanitary arrangements were enforced on these vessels, and he need hardly remark that sufficient space and ventilation were not the least important points to be attended to. These were the principal reasons for taking action in this matter. He would now endeavour briefly to explain the state of the existing law, and the alterations they proposed to make in it. The application of the present Act (XXI of 1855) was limited to the cases of vessels proceeding from ports under the jurisdiction of the British Government. The consequence was, that its provisions were evaded by owners of ships, after clearing out from these ports, putting into others belonging to Foreign States, and, regardless of all restrictions, stowing away any number of passengers they could procure. They proposed to remedy this defect by extending the operation of this Bill to all ports within the dominions of Princes and States in India in alliance with Her Majesty, and to all ships commanded or owned by subjects of Her Majesty conveying passengers between all ports and places situated east of the Cape of Good Hope and ports and places in the Red Sea and Persian Gulf. They proposed, also, to render masters violating the provisions of the Bill liable to imprisonment as well as fine; and, in order to facilitate prosecutions, they proposed that depositions taken before Consuls, and authenticated by their signatures, should be admissible as evidence. These were some of the chief points in the Bill. But the main safeguard against overcrowding would, he (MR. CHAPMAN) thought, be found in the provision obliging masters going to the Red Sea to obtain a clean bill of health at Aden, which bill was to be withheld, if the ship had a greater than the prescribed number of passengers. He trusted the Bill would be effectual in suppressing the horrible sufferings which they knew were now entailed on the poor people making these voyages. It seemed to him the Government had a perfect right to insist on passengers on board ships sailing under British colours being treated with common humanity. And this was all the present Bill aimed at.

The Motion was put and agreed to.

REGULATIONS AND ACTS LOCAL EXTENT BILL.

The Hon'ble MR. COCKERELL, asked leave to postpone his Motion to introduce the Bill to consolidate and amend the law relating to the local extent of the general Regulations and Acts, and to the local limits of the jurisdictions of the High Courts and the Chief Controlling Revenue Authorities.

Leave was granted.

The following Select Committees were named:—

On the Bill for the repeal of certain obsolete enactments—The Hon'ble Messrs. Gordon Forbes, Chapman and Cockerell and the Mover.

On the Bill to make further provision for the regulation of Native Passenger Ships—The Hon'ble Messrs. Stephen, Gordon Forbes and Cockerell and the Mover.

The Council adjourned to Friday, the 25th March 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

CALCUTTA,
The 18th March 1870.

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

THE RHEEA PLANT.

No. 704, dated 23rd February 1870.

From—H. RIVETT-CARNAC, ESQ., *Cotton Commissioner for the Central Provinces and the Berars,*

To—E. C. BAYLEY, ESQ., *Secretary to the Government of India.*

As the Government of India has evinced much interest regarding the "rheea plant," I may, perhaps, be permitted to submit, for your information, copies of some papers on the subject which the Hon'ble the Commissioner of Agriculture for the United States of America has recently been so good as to send me.

CHINA GRASS.

The nettle of the East, Boehmeria tenacissima, vulgarly called ramie and by other local names in different districts of Southern Asia and the islands adjacent, has excited much attention in the Southern States since its introduction there by M. Roezl in the spring of 1867, though it was first introduced into the country in 1855 from the Botanical Garden of Jamaica, and cultivated in the United States Botanical Garden, and subsequently in the experimental garden of the Department of Agriculture. It was there grown from seed, a fact that should be mentioned, a general impression having been received in the South that it is propagated only by cuttings.

The high price of cotton and the disturbance of the economy of its culture by the results of the war have given an absorbing interest to the feasibility of substituting ramie fibre for the Southern staple, and led thousands to experiments which they otherwise never would have undertaken. The Commissioner of Agriculture, to afford an opportunity for a thorough test of a fibre of superior strength and great lustre and beauty, has imported from Paris, for trial in 1868, seed of the B. tenacissima, and also of the B. candicans. These seeds have been distributed, and many reports have been received by the Department of their failing to germinate, and yet the failure attached to the experimenter, and not to the seeds, as portions of the same importation, in every instance of trial by the Department, germinated readily. The seeds are very small, and require slight covering, and, being very near the surface, need protection from the rays of the sun, as well as the right degree of moisture.

The experiment in this country.

SINCE March 1867, when the dissemination of this plant commenced at New Orleans, an interest, amounting almost to a furor, has been excited in that vicinity, and sub-divisions of roots have been freely sold at a dollar each. Exaggerated representations have been made, and it is feared that the ardor of experimenters may be cooled by disappointment. There seems to be no reason to doubt its rampant growth and great thriftiness in that latitude; it has been planted in every summer and autumn month, and reports of rapid growth have been invariable; the question now to be solved concerns the economy of its production and preparation as a fibre in competition with cotton and other textiles. It is increased not only by root divisions, but with perfect ease by cuttings, by layering, and by planting the seed. From one root, planted in March 1867, Mr. F. J. Knapp reports an increase of 100, and from layers and cuttings of the same more than a thousand. It is stated that in one instance 100 roots in nine months produced 40,000 plants.

The beauty, durability, and value of the fabrics made from this fibre are unquestioned; the desirability of its success as an important accession to the products of American agriculture is conceded; the only point to be made clear at the present time is the profit of the production. Will it pay? That is a more difficult question, and one that should be answered; all present experiments should be directed to its solution. The plant will grow; it may yield a large product per acre. Then how can it be most successfully and economically grown? How, especially, shall it be most cheaply and efficiently prepared for the market? And finally, what modifications and improvements in its manufacture can be made to insure a large demand for the raw material? The drawback to its more general use is its brittleness, which prevents weaving it by machinery; while the Chinese hand-loom is inadmissible in these days of steam and water power. Therefore it is not used alone, but always in combination with other material, the warp generally being cotton, the weft China grass.

Manufacturers are anxious to use it; many of them have spent time and money in attempted discoveries of means and appliances for working it to better advantage. A chemical process of treating the fibre has resulted in producing, in combination with cotton and an article resembling the best mohair, a stiff strong and cool texture, silky and beautiful. It is possible, perhaps probable, that further discoveries in this direction may give a ten-fold impetus to the manufacturer's demand. It must also be had at a low price, or it never can compete with cotton. Misapprehensions of its present marketable value are current, which should be corrected. The British imports of China grass (probably also including a portion of the fabric of the Neilgherry nettle) amounted to only £65,208 in 1867, and the average cost was scarcely 19 cents per pound; while the cotton imports of the same year were £1,262,536,912, and the average cost nearly 21 cents per pound. One great want in this connection is suitable machinery for separation of the fibre and preparation for manufacture. This was mentioned as a desideratum in the report of the International Exhibition five years ago. A machine for separating the fibre has been invented by Mr. Benito Roezl, which is claimed as a success. The machine is a metallic cylinder, three feet in diameter, driven at the rate of 300 or 400 revolutions per minute. It is provided with transverse bars or knives projecting from the perimeter (for breaking up the wood and extracting it from the fibre) in combination with alternate concave and convex table edges. The plants are first subjected to the action of the machine, then soaked in hot water, again passed between the knives and table edge, and finally, soaked several hours in a solution of common *lye*, soap and water, heated nearly to the boiling point. The first operation stripes off the leaves, scrapes away the bark, and takes out the woody substance and three-fourths of the gummy matter, and is performed with the concave edge adjusted to the table. The second is simply steeping in water to soften the remaining gum. The convex edges of the knives then soften and flatten the fibre, which is ready for manufacture after the second steeping and subsequent drying.

Acclimating tests in other countries.

THE history of its introduction into Europe has some curious features. Sir W. J. Hooker was early interested in the experiment at a period when little was known of the plant that produced so beautiful a fibre. He identified the B. *nivea* and B. *tenacissima* as really the same species, and sought to introduce the fibre into Great Britain in large quantities, and to encourage its systematic production in British Colonies, with the hope of reducing the price which it had commanded (from £60 to £120 per ton) to a figure which should encourage its general manufacture. In 1851, referring to plants then growing in the Royal Gardens at Kew, he says—

> "Long previous even to the time when the commercial importance of the fibre became known among us, we had raised this plant and had it in cultivation in a hothouse, or in a warm green house. This present year we have planted it in the open ground, rather with a view of showing that it cannot succeed, than with a hope of its bearing our climate unharmed save during the hottest of the summer months. But this is no reason why the 'Chinese grass' should not be cultivated, and advantageously, in our colonies—that is, such of our colonies as possess a climate nearly analogous to that of Canton; and we cannot doubt that it would, with due care, prove a most valuable and important article of export. It is only a true and correct knowledge of such plants and of the peculiarities of soil and climate necessary for their being successfully reared that can enable us to grow them to good purpose."

For sixteen years this recommendation was practically unheeded; but official action was finally taken in consequence of a communication to the United States Department of Agriculture by one of its foreign correspondents, George J. Abbot, Esquire, United States Consul at Bradford, England, which was made public in the Annual Report for 1865 in a practical essay upon this plant and its products. Specimens of the manufacture sent by the same gentleman were at the same time deposited in the Museum of this Department. The fact was stated that considerable quantities were produced in China, but that the civil war there had interfered with its production, as civil war in this country had reduced the yield of cotton; that it was then worth in England £80 per ton; and that it might perhaps be profitably grown in the Southern States, and its production become a valuable addition to American industry.

Great Britain was at this time engaged in a solution of the question of the cotton supply, and this official mention at once attracted the attention of the British authorities, who immediately communicated with Dr. Hooker, at Kew, asking his opinion as to the colonies most suitable to the cultivation of this fibre. In response to despatches sent to Colonial Governors, facts are reported concerning experiments with this plant.

Mr. Wilson, of the Jamaica Garden, from whom seed was received for the Botanic Gardens of this city in 1855, reports to the Colonial Secretary that the Boehmeria was introduced in 1854, was found to thrive admirably, and to produce two crops of shoots annually of 8 to 10 feet high. He says—

> "The plant being suffruticose, the shoots die down to the crown of the stool as soon as the seed ripens, and are rapidly succeeded by others; and I find by an experience of twelve years, that two regular crops of growth or shoots are all that can be reasonably expected or naturally produced per annum. I have found the luxuriance

of growth to be all that could be expected, and even to vie with most of our rank growing weeds. The peculiarities best suited for the most successful culture of this plant are a rather rich and porous soil, warm and moist climate, and at altitudes not exceeding 3,000 feet. In this description of land and climate the island abounds, more particularly in this country, in the lower hills and abandoned sugar estates. I have distributed this plant largely, which has thriven well in general; but it is held in little estimation, being looked upon more as a weed than as containing the germ of a future new and valuable staple; however, the experiment has placed beyond the shadow of a doubt the entire eligibility of soil and climate for the full and healthy development of the plant in general. Some years ago I received a fine sample of this fibre from London, where it was cleaned from the raw material sent from India; the marketable value of this fibre was 2*s.* 6*d.* per pound, being equivalent to £280 per ton."

A report from Mr. Prestoe, of the Botanic Garden at Trinidad, represents that the plants thrive well there, and might be increased at a small expense to many thousands in a few weeks.

The soil and climate of the Bahamas are stated to be unsuited to its successful growth.

Mr. Home, Sub-Director of the Mauritius Botanic Garden, states that a few plants only were grown at the date of the reception of the despatch, but that efforts would promptly be made for their propagation, and a portion of the garden would be set apart for the especial cultivation of fibre-yielding plants, with a view of testing their commercial importance. Sir Henry Barkly, Governor of the Mauritius, has no doubt that B. *tenacissima* will thrive there, as two species of the same genus are indigenous to the island; but he mentions as a drawback to practical operations with it the larger amount of capital invested in the sugar manufacture, which may prevent the "large proprietors" engaging with spirit in the enterprise, while the smaller planters, many of them Natives of Bengal, and presumed to be acquainted with the mode of culture, may find in it an important resource.

In the Straits Settlements, little is expected, unless the Government shall test its profit by cultivating a small experimental patch, as was done by the Indian Government in the case of tea and of cinchona.

An interesting report of the experiment in Queensland is made by Mr. Walter Hill, Director of the Brisbane Botanic Gardens, to Sir G. F. Bowen, the Governor, from which the following extract is made:—"I received plants of the 'China grass' so far back as in 1855 from the late Sir W. J. Hooker, of the Royal Gardens, Kew. About a quarter of an acre of the Brisbane Botanic Gardens was for two years devoted to their special cultivation. They flourished vigorously, and required comparatively little care in their preparation or preservation. There being at the time no very tempting demand in the European markets for the fibre, and their being no machinery or appliances in the Colony for extracting it, and finding that the plant had attained an exuberance and tenacity of growth which was gradually encroaching upon more ground than could be properly spared, I caused it to be removed to the border, on the bank of the river, where it can now be seen growing in a very thriving condition. Some of the fibre, however, was sent home to the International Exhibition in 1862; and, as I believe there are no means in this Colony for extracting it on a more extensive and systematic scale, I have lately been contemplating the desirability of again setting apart a portion of ground for the exclusive cultivation of the plant in the hope of being able to give a more practical illustration as to the quality of the fibre producible in Queensland, and also with a view of stimulating others to embark in the enterprise."

Its culture in China.

In China the seed is gathered very carefully before the approach of frost, and, when sufficiently dry, is placed in a jar or basket, mixed with sand or dry earth, and the vessel covered with straw as a protection against the frost. At the time of planting they are tested by immersion in water, the imperfect ones floating at the top.

The proceedings of the Agri-Horticultural Society of India give an idea of the mode of culture and means of preparing the fibre. A loose dry soil is selected near a stream. The ground is well broken and manured, and laid out in beds eight yards long and one wide, which are carefully raked and watered one day, and the same processes repeated on the following day preparatory to sowing. The seeds are then mixed with a little dry earth and sown broadcast, and afterwards the beds are swept lightly with a broom, covering the seeds and smoothing the surface at the same time. Matting is suspended on a temporary frame-work over the beds before the plant emerges from the soil for protection, until the plant is two inches high, and this covering is watered every day and removed at night. When three inches high they are transplanted in rows four or five inches apart; watering is continued three or four times daily for the first ten days, when an occasional wetting suffices. At the approach of cold weather the field is covered with a heavy coating of manure for winter protection. In March the manure is removed, and watering in dry weather resumed. In the third or fourth year, as is stated, the stems are ready for cutting, and sometimes in the second year; if grown from roots (cut in pieces and planted eighteen inches apart), they are ready for cutting the second year, and after a plantation is established three crops per year are secured.

The stems are cut an inch from the surface; the first cutting occurring in June, and the last in September or October, the stems being six or eight feet high. After cutting, the plants are covered with manure and watered.

The first step in preparing the fibre is the striping of the leaves by women and children, then the stems are soaked in water, and afterwards broken in the middle, thus loosening the fibrous portion, when the finger nails are inserted between bark and stem, and passed from top to bottom, separating one-half the fibre. The remaining fibre, after further soaking, is taken off with a rudely made knife, with a blade about two inches long. "This rude implement is held in the left hand, its edge, which is dull, is raised a line above the index finger, strips of hemp (or fibre) are then drawn over the blade from within outwards, and being pressed upon by the thumb, the fibrous portion of one surface and the mucilaginous part of the other are thus taken off. The hemp then rolls up like boiled tendon. After being wiped dry, it is exposed to the sun for a day, and then assorted; the whitest being selected for fine cloth." It is then bleached by boiling and drying in the sun, when the tedious process of separating the individual fibres with the finger nails is dexterously accomplished by women or children, leaving the material exceedingly fine and soft, and afterwards a further bleaching is secured by soaking in water with a little lime, or the ashes of mulberry leaves. During the bleaching process the fibre must be dry, as moisture will give it a dark color.

China Grass fibres of Commerce.

The China grass cloth has long been known to commerce, and the fibre was many years since brought to Europe, where it attracted the attention of manufacturers for its fineness, strength and beauty. It was found to be stronger than hemp, with the lustre of silk. At the British International Exhibition of 1862 several specimens from India, Assam and Malacca, were exhibited. The report of that Exhibition referred to these samples as attracting more attention than any other products of India, and stated that late experiments had shown that the fibre was susceptible of manufacture in a great variety of useful and valuable fabrics.

At the same Exhibition samples were exhibited bearing the name of *Boehmeria nivea*, a fibre believed to be identical with the *B. tenacissima*, of the same commercial value, although represented as botanically a different species. The plant flourishes at Darjeeling and other places in the North of India.

The Neilgherry nettle (sometimes written Nilgiri nettle), *Urtica heterophylla*, abounding in the hills of that name in India, possesses a fibre used for similar purposes, sold at the same price, and is sometimes included with China grass fibres. It has been called "vegetable wool," is abundant in a wild state, and it is assumed that its cultivation would be profitable. The bark of the young wood, steeped in water twenty-four hours, renders easy the separation of the fibre. The nettle is one of the most formidable of the stinging tribe, a fact which might militate against its utilization. The Technologist says that "the fibre is brilliant and strong, easily separated, regular in fineness, from six to twenty-eight inches in length, of good natural whiteness, similar in fineness to the coarsest mohair, much twisted, generally flattened at the root end. The last peculiarity is a defect, otherwise it is a fibre perfectly adapted for spinning with coarse combing wools. It seems to be specially applicable for fabrics where bright stiffness is the quality desired. It dyes in a similar manner to China grass, but does not possess equal brilliance, strength or whiteness. If it were forced on the market, it would immediately take a position as a combing fibre probably second only to China grass. It is reported to be obtainable in abundance, but the plant is a formidable one to manipulate."

The B. *candicans*, of which seed has been imported from Paris by the Department, is thus characterized by Professor George C. Shaeffer, Librarian of the Patent Office, a well known expert in fibres, in a note to the editor of this report:

"The *Boehmeria candicans* was first brought to notice in 'England at the Exhibition of 1857, when, according to Royle, a prize medal was awarded for some beautifully white and silky looking fibre sent by the Singapore Committee from M. Weber, of Java, as the produce of a plant which he called *Boehmeria candicans*, and also *Linum usitatissimum*' (but this is the botanical name of our own flax) 'on the same label. The former is probably another name for our plant;' (he is speaking of the B. *nivea*) as it is said to be the *ramie* or *ramee* of the Malays. The plant is cultivated by the Dutch in Java, and its fibre has been introduced into Holland, and gold medals awarded to Messrs. Meerburg, of Leyden, for specimens of sail-cloth, ropes, cables, &c., and also for some finer kinds of cloth and tablecloths. The plant producing this fibre was called *Boehmeria candicans*, and also B. *utilis*, by Professor Blume; but it is probably only a variety of B. *nivea*, or perhaps a nearly allied species.

"From this it will be seen that the B. *candicans* is the plant a specimen of which I have, from Mr. Ballestier, gathered by him from a Dutch plantation in Java, and which he called *ramee*, and said was identical with the 'China grass.' This, if at all different from the B. *nivea*, is the plant cultivated by the Dutch in Java, named by Blume, and by him introduced into France. It is, therefore, the same as that 'pushed' by Roezl, the Austro-Belgian Botanist of Texas, which he says cannot be raised from seeds. But it is to be remembered that in his elaborate display of synonyms, he omits this very one of B *candicans*.

"Of course it will be worth while to carefully distinguish in the culture of this plant, and establish the fact whether it can or cannot be raised from seeds, and whether it is essentially distinct from the B. *nivea*. It should be borne in mind that it was shown in Holland mostly in the form of the coarser fabrics."

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 14 of 1870.

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, APRIL 2, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

THE NEW CUSTOMS LAWS FOR MOZAMBIQUE, ANGOLA AND PORTUGUESE INDIAN POSSESSIONS.

POLITICAL.
No. 17.

INDIA OFFICE;
LONDON, *the 17th February* 1870.

To His Excellency the Right Hon'ble the Governor General of India in Council.

MY LORD,—I have received with satisfaction the copy of the edict published in the *Mozambique Official Gazette* of the 14th July last, abolishing slavery throughout the Portuguese dominions, without compensation to owners, contained in the Foreign letter of your Excellency's Government, No. 373 of the 30th November 1869.

2. I take this opportunity of furnishing you with two printed copies of a Foreign Office letter, dated 10th January 1870, and of a communication* addressed to the Secretary of State for Foreign Affairs by Her Majesty's Minister at Lisbon, accompanied by a translation of Royal Decrees which have appeared in the *Diario de Lisbon*, establishing new Customs tariffs in the Portuguese possessions of Mozambique, Angola and India, and by a report† from the Minister of the Colonies, exhibiting the prospective advantages of these reforms, following upon the abolition of slavery.

* Commercial No. 15, dated 17th November 1869.

† Dated 12th November 1869.

3. One copy of this despatch, and two copies of the printed enclosures, have been forwarded to the Governments of Madras and Bombay.

I have, &c.,
ARGYLL.

FOREIGN OFFICE,

10th January 1870.

The Under Secretary of State for India.

SIR,—I am directed by the Secretary of State to transmit to you, to be laid before the Secretary of State for India in Council, a despatch from Her Majesty's Minister at Lisbon, inclosing a translation of the new Customs laws for Mozambique, Angola and Portuguese Indian possessions.

I am to request that the enclosed papers may be returned to this Office when done with.

I am, &c.,

CHAS. SPRING RICE.

COMMERCIAL.

No. 15.

LISBON,

17th November 1869.

The Earl of Clarendon, K. G.

MY LORD,—I have the honor to transmit herewith to your Lordship copies of Royal Decrees which have appeared in the *Diario de Lisbon*, establishing new Customs tariffs in the Portuguese possessions of Mozambique, Angola and India, accompanied by a report from the Minister of the Colonies, exhibiting the advantages which it is expected will result from these reforms.

With respect to the tariff for the Province of Angola, His Excellency states that it is substantially the same as that introduced at Ambriz by the Local Government in December 1868, and which has been in force since the 1st of January last; and that it has already had the result of inducing many of the larger foreign commercial houses, which had hitherto been established to the north of the Rio Loge, to remove their establishments to Ambriz.

In the tariff for Mozambique, while a protection of 30 per cent. is still retained in favor of Portuguese goods, all differential duties on the flag are abolished.

In consequence of the extreme length of these documents, I have not been able to enclose translations with them, but I shall not fail to transmit the latter to your Lordship as soon as they can be prepared.

I have, &c.,

CHAS. A. MURRAY.

Extract from the Report of Senor L. A. Rebello da Silva, Minister of Marine and Colonies, of November 12th, 1869, addressed to the King of Portugal.

Diario do Governo, No. 260, Lisbon, Novembro, 15, 1860.

Sire,—The remarkable progress which two of our most important possessions, *viz.*, the provinces of Angola and Mozambique, have lately exhibited, imposes upon the Government the imperious duty of aiding the development thereof by the adoption of those measures of which enlightened nations give us the example, carrying into practice the rules of science with prudence, but at the same time with perseverance.

(The Minister then proceeds to remark that the period of transition between the suppression of the slave-trade and the application of the Colonies to legitimate trade, although it was certainly one of trial and difficulty, did not produce that great subversion which it had been foretold would be the immediate result of that measure. He then refers to the "abolition of slavery" as opening a new field to Portuguese energy and capital in those vast and fertile regions. But he insists upon the necessity of co-operation on the part of the Government in the endeavours of the local population, by facilitating the means of public education and communication, by encouraging religious

missions, by affording protection to the fluvial navigation, by extending the political and commercial relations, and, in fine, by suppressing all unnecessary expenses in the Colonies. With these objects in view, the Minister promises on a future occasion to submit to His Majesty several modifications in the administrative and judicial organization of some of the Colonies, and a project of Penal Colonies, &c.)

And he then continues as follows :—

Among these reforms, which, on account of their number and importance, although designed from the same point of view, can only be gradually submitted to your Majesty's superior judgment, one of the most important is the reform of the colonial tariffs, which has been so often, and for so many reasons pressed upon the Government by the opinions of enlightened and competent persons.

The improvement in the condition of the trans-marine Provinces depends to a great extent upon the adoption of a system which will not drive away from, but will rather attract to, the ports thereof the ships of all nations. Agriculture, mining operations, and every kind of progress in general would become paralysed should we insist upon opposing an unjustifiable veto to the commercial policy followed by the great majority of civilized nations, and sanctioned by facts. The revision of the trans-marine tariffs which has been intrusted to the study and zeal of a committee composed of persons duly qualified for it by their capacity and practical knowledge is already far advanced, and will, I trust, be brought to a conclusion very shortly, but not so soon as I wish, owing to the fact that more exact and ample information is required from some of the provinces.

The increase which has taken place in the receipts of the Mozambique Custom Houses, and the peculiar circumstances which promise a hopeful future to the privileged bay of Lorenzo Marques, have decided me to press for the revision to begin by the tariff of that rich possession. The chief object I had in view was to place the Custom House of Lorenzo Marques in a position to compete with those of Foreign Colonies. With respect to articles of extensive trade, such as brandy, wine, and gunpowder, the duties of the Portuguese tariff are more favourable than those levied in the former. In other articles, such as for instance, cotton tissues, the same amount of duties is levied. With reference to the other ports of the province, I have endeavoured to give every facility to foreign trade, without endangering the actual revenue.

Articles of national production continue to be protected with a favour of 30 per cent. in the import duties; but the differential duties on the flag, the chief obstacle to the development of foreign trade, are entirely abolished. In laying down the fixed import duties, the revised tariff has adhered, as much as possible, to the duties at present levied upon articles of national production; and, with respect to the export duties, it has adopted, with very slight difference, the duties at present levied upon merchandise destined for foreign ports, doing away with the distinction made in the tariff still in force with respect to destination of re-exported merchandise.

Respecting the mode of calculating the *ad valorem* duties, a method was laid down which appeared to be the most convenient to trade, and the safest to the interests of the public treasury, bearing in mind the provisions contained in the 11th article of the last Commercial Treaty concluded with France.

Under the present circumstances, I have not considered it prudent to do away altogether and immediately with the special tax of 3 per cent. *ad valorem*, applied to the public works of the province, which has now been recovered for more than a year without opposition.

In fine, in the tariff which I now submit to your Majesty's approval, being aware that it is not and cannot be perfect, and that it ought only to be taken as the basis for gradual improvements, by classifying in a better manner beverages and other articles, in order to facilitate the clearance thereof, and by

specifying, as being free of duty, animals of all kinds, coal, and books, it has been my wish to advance as far as it was possible to do so without risk, never losing sight of the interests of the public treasury, of those of trade, and of the good example set us by other countries.

In the reform of the Indian tariff, which is connected in many points with that of Eastern Africa, I did not also hesitate to reject such provisions as were less conformable to the principles which are to be found in the original draft sent out to that State. The obstacles prejudicial to trade, and useless to the treasury, which ordered merchandise of a certain district to be considered as foreign, and subjected it to the payment of the highest duty, for the sole reason of their removal to another district by a foreign conveyance, which prohibited the importation of salt and gunpowder, which levied excessive duties upon articles of foreign production shipped by foreign vessels, were utterly unjustifiable; the more so as, after all this, an exception was made in favour of those nations with whom we had concluded Commercial Treaties, that is to say, all those that carry on commercial relations with Portuguese India. On the other hand, the tariff accorded the privilege of nationality to the products of Oceania and China for the sole reason of having passed through Macao, where they pay no duties. I did not, however, think proper to abolish, without further information, a few other regulations; although I did not look upon them as being altogether conformable to principle, I was deterred by the scruple of sacrificing important items of the revenue of the State, without possessing sufficient information as to the effects of a fundamental change.

I shall not attempt to justify either the abolition of the privilege of nationality accorded to merchandise from Oceania and China, or the grounds upon which salt and gunpowder will be allowed to be imported. The former, as a means of protecting the navigation between India and Macao—the only pretext which might be alleged in its defence—cannot be maintained, when a bi-monthly line of steam navigation places the two provinces in communication with each other. The prohibition to import gunpowder and salt, which are thus rendered monopolies, the former because it is made at Goa on account of the State, and the other, in spite of the duties which are charged upon it exceeding 50 per cent., can meet with no reasonable explanation.

In the revised tariff which I now propose, many imposts are abolished which yielded but little, and among them the additional 10 per cent. upon the importation and exportation of all merchandise. With respect to the application of the proceeds of this tax, I have endeavoured to conciliate justice with economy and regularity in the public service. I did not hesitate to add 29 reis (about 1½*d.*) to the duty upon unmanufactured tobacco, and 119 reis (6½*d.*) to that upon tobacco made into cheroots, because, inasmuch as the importation in 1864 went as high as 16,088 arrobas, the difference will produce an increase of revenue of nearly 18,000,000 in provincial coinage, and at the same time the alteration is not so great as to affect the consumption or to encourage smuggling.

In Western Africa, the situation of the district of Ambriz demanded the special attention of the Government. There were opinions in favour of the establishment of a free port on the spot, in the hope of overcoming the repugnance which kept away wealthy foreign commercial firms from the place, inducing them to open factories at Quicembro, Ambrizette, and at other places on the coast to the north of the River Lage.

Experience settled the question. The new tariff authorized by the decree (Portaria) of the Governor General of December 31st, 1868, and which came into operation in the month of January of this year, showed that its enactments were sufficient to induce the wealthiest merchants to prefer the safety which our port offered to the contingencies of a precarious position in native territory belonging to independent Chiefs. Several firms have already settled at Ambriz, and it is stated that one of them has got merchandise in its warehouses of the value of nearly 2,000 cantos (£444,444.)

Foreign trade having thus shown a tendency to settle in that region, and having accepted, without the slightest objection, the duties decreed in the new tariff, which only levies an import duty of six per cent. upon the value, as stated in the invoices, it would be more than imprudent to despise the revenue of this Custom House, the more so as the difficulties under which the province is laboring are considerable, in consequence of the large deficit, and when everything gives the assurance that the Custom House of Ambriz may shortly become an abundant source of revenue.

It was the opinion, therefore, of the Committee appointed to revise the trans-marine tariffs that the idea of the establishment of a free-port ought to be laid aside, and, acceding to their opinion, I tried to ascertain whether it might be more expedient to accord the free importation of merchandise, and to exact from the exportation the tax which cannot be directly levied upon property. At first sight it would appear that the method would be successful in attracting trade, by affording it greater facilities, by promoting the development of the depôts, and by simplifying, to a great extent, the mode of clearance and the fiscal control. Information, however, which has recently been received, has convinced the Government and the Committee that the most expedient course to pursue at present was to confirm the tariff published on the 31st December, the conditions contained therein having been fully accepted, not only because merchants do not at present aspire to anything but the assurance that the duties will not be increased within a period of sufficient duration to enable them to avoid risk in their transactions, but also because the system which has been adopted promises a revenue to the province, which everything shows will increase, and which it would be inexcusable levity to diminish without some cause in return for concessions which no one asks for.

It still remained to examine whether it would be expedient to establish some difference between national and foreign merchandise. After hearing the most explicit explanations upon the matter, as well as the opinion of the Tariff Committee, I have come to the conclusion that the duty of 6 per cent. *ad valorem* ought to be kept up, indifferently, for natives and foreigners. There is no direct trade between Lisbon and Ambriz; all goods are received from England; and even if some favor were accorded to Portuguese merchandise, it would never be able to compete with foreign merchandise, which can be taken there by merchants of different countries; and it is well to take notice that, if such favor were excessive, it would drive away foreign trade from Ambriz, and would render void the design which dictated the regulations of the new tariff, and would be the cause of the withdrawal from our port of the firms which promise to enrich it.

The tariff which I propose for the Custom House at Ambriz, and in favour of which the results of a lengthy experience can already be adduced as an argument, is based upon a reasonable reduction of the duties, abolishes the privileges of flag and of port of shipment, and will continue to attract to the place the traffic from the north, without injuring in any way the trade of Loanda.

I intend to submit to your Majesty's consideration other important alterations in the tariffs of the remainder of the Province of Angola, of the Islands of San Thomé and Principe, of the Ports of Portuguese Guinea, and of Cape de Verde. Some of these, however, require a more detailed consideration, after receiving more minute consideration, which is being collected, and which must be submitted to serious investigation. I trust, however, that the reforms of which I this day solicit your Majesty's approval will immediately confer a great benefit upon the trade of several important places, and while characterizing the commercial policy which the Government intends to pursue in accordance with the principle adopted by the most enlightened Colonial nations, will encourage capital to avail itself of the advantages which facilitate the carrying on of a profitable trade in many places of our trans-marine provinces.

Mozambique.

Taking into consideration the Report of the Minister and Secretary of State for the Department of Marine and the Colonies;

Availing myself of the authorization accorded in virtue of the first paragraph of the fifteenth Article of the Additional Act to the Constitutional Charter of the Kingdom;

And after consulting the Board for the Colonies and the Council of Ministers,

I am pleased to decree as follows:—

Article I.—The tariff annexed to this Decree, and which forms part thereof, as well as the twenty-two preliminary Articles which accompany the same, is declared to be in force in the Custom Houses of the Province of Mozambique.

Article II.—All legislation to the contrary is hereby revoked.

The Minister and Secretary of State for the Department of Marine and Colonies shall accordingly cause the same to be carried into execution.

At the Palace, November 12, 1869.

(Signed) THE KING.

(Countersigned) LUIZ AUGUSTO REBELLO DA SILVA.

TARIFF OF THE CUSTOM HOUSES OF THE PROVINCE OF MOZAMBIQUE.

Preliminary Rules.

Article I.—All goods and merchandise of foreign production imported through the Custom Houses of the Province of Mozambique, either in national or in foreign ships, shall pay, when mention is made thereof in the tariff, the duties laid down therein.

Section.—An exception is made in the Custom House of Lorenzo Marques with respect to cotton tissues, olive oil and of other qualities for food, hempen cables, tin or Indian pewter (calaim), copper from China, or Chinese butter, linseed oil, dyes, and iron nails, which shall pay 6 per cent. *ad valorem*.

These goods, imported into the Custom House of Lorenzo Marques, when cleared for transit to other ports of the province, shall only pay in the latter the difference between the duties already levied in that Custom House and those which they ought to pay in accordance with the present tariff.

Article II.—All goods and merchandise, being the produce of the continental part of the kingdom, of the adjacent islands, or of the trans-marine possessions, as well as those which may have been nationalized in the Custom Houses of the continental part of the kingdom or of the adjacent islands, through the payment of the duties of consumption, shall pay, when imported in Portuguese ships, seventy (70) per cent. of the duties laid down in the tariff.

Section.—An exception is made with respect to wines and spirits, either national or nationalized by the payment of the duties of consumption, shall pay fifty (50) per cent. of the duties laid down in the tariff.

Article III.—All goods and merchandise, being the produce of the province, exported from the Custom Houses thereof in national or foreign ships, shall pay, if mentioned in the tariff, the duties laid down therein, although they may be destined for foreign ports.

Article IV.—All goods and merchandise imported into the Custom Houses of Mozambique, and not mentioned in the tariff, shall pay 6 per cent. *ad valorem*, whatever may be the origin of the goods and merchandise, and the nationality of the importing ship.

Article V.—All goods and merchandise exported from the said Custom Houses, and not mentioned in the tariff, shall pay 3 per cent. *ad valorem*, excepting cotton, which shall be exported free of duty until the 4th of December 1871. (Decree of the 4th of December 1861.)

Article VI.—An exception is made from the rules contained in the 3rd and 5th Articles with respect to the goods and merchandise exported through the Custom House of Lorenzo Marques, which shall pay an export duty of 1 per cent. *ad valorem*.

Article VII.—In order that any goods and merchandise may enjoy the favours accorded in the 2nd Article, they must be accompanied by the clearance tickets of the Custom House whence such goods and merchandise shall have been exported.

Article VIII.—The *ad valorem* duties shall be regulated in the following manner:—

The importer shall sign a statement, describing the goods, and the value thereof in their original market, accompanying the statement with the respective invoice.

The exporter shall present a similar statement, merely describing the goods, and the value thereof in the market of the province.

In case the Custom House Officers should think that the valuation is prejudicial to the interests of the Public Treasury, the Chief Officer of the Custom House shall appoint a clerk as arbiter, and the merchant shall appoint another on his side, and if their award should be alike, it shall be immediately adopted; in case, however, they should differ, the said Chief Officer shall appoint a second arbiter, who shall decide in favour of either award, which shall become the definitive award.

To the value, as stated by the importer, or as fixed by the arbiters in cases of doubt, 10 per cent. on such value shall be added, for levying the import duties, on account of freight, insurance, and commission, and the import duties shall be calculated upon this total value.

The export duties shall be calculated merely upon the value as stated by the exporter, or as fixed by the arbiters in accordance with this Article.

Article IX.—The following shall be exempt from export duties:—

1st. All merchandise nationalized in the Custom Houses of the Province by the payment of the duties of consumption.

2nd. All national and nationalized merchandise employed under the supervision of the Custom Houses, for the purpose of repairing any national or foreign vessels anchored in the ports.

3rd. Any goods or articles purchased on shore for consumption on board the national or foreign ships of war employed on the station.

Article X.—All goods and merchandise being the produce of the province of Mozambique, as well as any goods and merchandise, either national or foreign, that shall have paid in the Custom Houses of the province the duties due thereon, shall be allowed to be transported freely from one port of the province to another without being subject to any tax.

Article XI.—No goods exempt from duty shall be either entered or cleared until the quantity and value thereof shall have been registered in the Custom House books.

Article XII.—All luggage is exempt from duty; the word luggage meaning articles of clothing and others, such as instruments for the personal use of an individual, on the latter proving his respective profession.

Everything shall be conveyed to the Custom House for examination, and shall be accompanied by a statement signed by the Captain of the vessel, specifying the number of parcels and the name of the owner thereof.

The Chief Officer in the Custom House shall, as soon as application is made to him, order the luggage to be examined, and, if found in proper condition, shall cause it to be delivered to the owner free of any tax.

Article XIII.—All goods imported in bond into the depôts of the Custom House of the city of Mozambique may be re-exported therefrom on payment of a duty of ½ per cent. *ad valorem*, whatever may be the nationality of the goods re-exported or of the ship in which they are re-exported.

Section 1.—In addition to this duty, all merchandise warehoused in the Custom House shall pay, after six months from the date of entrance thereof, a warehouse rent at the rate of 5 reis (about ¼*d.*) per 15 kilogrammes upon dry articles, and of 15 reis (about ¾*d.*) per decalitre on liquids for each succeeding month.

Section 2.—Warehouse rent shall always be computed monthly.

Section 3.—The warehouse rent comprises porterage.

Article XIV.—The term during which merchandise shall be admitted in bond is limited to two years, reckoning from the date of the ship's entry. At the expiration thereof, should the merchandise not have been cleared for consumption or re-exportation, it shall be sold by public auction, after 30 days' notice; the owners, however, or their representatives shall be allowed, up to the day of the auction, to withdraw the said merchandise on payment of the respective duties and warehouse rent.

Section.—The expenses of the auction shall be paid with the proceeds of the sale, and the duties and warehouse rent shall be discounted from the said proceeds, and shall be entered in the Custom House receipts, the balance, should there be any, being kept at the disposal of the parties interested.

Article XV.—The Custom Houses shall allow the trans-shipment, free of duty, of any merchandise from any merchant ship to another, which must sail for another port within the period of 60 days.

Article XVI.—All national and foreign vessels entering the ports of Mozambique for the purpose of taking in water, for repairs, for ascertaining the state of trade in the province, or for any other reasonable purpose, provided they carry on no trade beyond taking in articles of consumption for the same, or whatever may be necessary for the repairs thereof, shall be exempt from the payment of shipping and port dues.

Article XVII.—The Custom Houses shall not be responsible for any damages which may befal the merchandise deposited in their warehouses, provided such damages shall have been caused by accidental or unforeseen circumstances, and not by the negligence of the Custom House people; and no compensation for duties shall be allowed on account of any difference in the quality of the merchandise offered for clearance, excepting the case mentioned in the following Article.

Article XVIII.—Whenever any merchandise shall appear in the Custom House with average exceeding 3 per cent. on the primitive value, not of the damaged article only, but of the whole parcel of which it forms part, should the owners or receivers make an application to that effect, a reduction shall be made in the duty in proportion to the value of the merchandise in its primitive state and its value after being damaged.

Section.—Articles of food, medicinal drugs, and medicines are not included in this rule; and if they should have suffered an average exceeding the said 3 per cent., they shall be immediately destroyed, if the owners or receivers should offer no objection thereto; but, in case they should, they shall only be destroyed with the assent of experts, among whom there shall always be, if possible, a representative of the Board of Public Health of the province.

Article XIX.—For the purpose of fixing the reduction to be made on the damaged articles, the Chief Officer of the Custom House shall appoint an arbiter from among the Custom House clerks; and the owner or receiver of the

merchandise shall appoint another, who shall declare the cause of the damage, and the difference between the value of the merchandise in its actual state, and in that before the damage occurred, and in view of this declaration, which shall be drawn up in the form of a public deed by the proper officer, the reduction of the duties applied for shall be made.

Section.—In case the arbiters should not agree, the Chief Officer of the Custom House shall appoint a third arbiter, who shall have the casting vote in favour of either award, without further appeal of any kind.

Article XX.—All goods shall pay the respective duties on their net weight, an allowance for tare being made in accordance with the Table annexed to the tariff.

Section 1.—The merchants shall have the option of weighing the goods without the tare.

Section 2.—Whenever the tare containing the goods shall be articles saleable in the markets in the state in which they arrive, such tare shall pay the respective duty.

Article XXI.—The special duty imposed by the decree (having the force of law) of the 30th of December 1852, is hereby abolished, as well as any other duties levied in the Custom Houses of Mozambique, under any denomination whatever, and not mentioned in this tariff.

Article XXII.—A permanent Tariff Committee shall be appointed, which shall be consulted with regard to any alteration which it may become necessary to make for the future in the tariff now put in force, and with regard to any questions or disputes which may arise in carrying the same into effect.

Section.—The reports of this Committee shall be forwarded in draft form to the Governor General of the Province, who shall be the competent person to decide; but his decision with respect to any alterations in the tariff shall remain subject to the approval of the Government.

(Signed) LUIZ AUGUSTO REBELLO DA SILVA.

DEPARTMENT OF MARINE AND COLONIES,
November 12*th*, 1869.

TARIFF.—MOZAMBIQUE.
Importation.

Numbers of Articles.	Nomenclature.	Units.	Duties. Reis.	Duties. Sterling. s.	Duties. Sterling. d.
1	Brandy - - - - -	decalitre	450	2	0
2	Cotton grey - - - - -	kilogramme	130		6·77
3	„ „ from India, Doutins da Carregaias -	„	90		4·80
4	„ „ serged (sarjada) - - -	„	150		8
5	„ from Carvi and Cadi - - -	„	60		3·20
6	„ white - - - - -	„	170		9·08
7	„ printed, common - - - -	„	220		11·72
8	„ „ fine - - - -	„	320	1	5·08
9	„ dyed in the piece, Zuartes common, or from Europe	„	230	1	0·26
10	„ „ „ „ Indian Zuartes, excepting those of Cadi - -	„	130		6·77
11	„ „ „ „ Zuartes from Cadi - -	„	80		4·26
12	„ „ „ „ calicoes and loupas - -	„	180		9·60
13	„ „ spun, common - - -	„	180		9·60
14	„ „ „ fine - - - -	„	240	1	0·80
15	„ „ „ serged - - -	„	260	1	1·54

TARIFF.—MOZAMBIQUE—*continued.*

Importation—continued.

Numbers of Articles.	Nomenclature.	Units.	Duties. Reis.	Duties. Sterling.
				s. d.
16	Cotton, dyed, spun (goods from Cache) - -	kilogramme	180	9·60
17	„ „ „ (Travatas) - - -	„	40	2·13
18	„ „ „ (Carlanganes) - - -	„	110	5·86
19	Live animals of all kinds - - -	- -	free.	
20	Sugar, refined, of any quality - - -	kilogramme	30	1·60
21	„ not refined, of any colour or quality - -	„	20	1·06
22	Small glass ware - - - -	„	30	1·60
23	Olive oil and others for food - - -	decalitre	200	10·66
24	Beverages, distilled; Cognac, gin, liqueurs, whiskey, and any others not specified - -	„	600	2 8
25	„ fermented; beer, ciders, hydromel, and any others not specified - - -	„	200	10·66
26	Bitumen - - - - -	- -	free.	
27	Hempen cables - - - - -	kilogramme	20	1·06
28	Lime - - - - -	- -	free.	
29	Calaim (tin) - - - - -	kilogramme	60	3·20
30	Stones in block for building purposes - -	- -	free.	
31	Coal (mineral) - - - - -	- -	do.	
32	Casks, staves, wooden and iron hoops for casks -	- -	do.	
33	Hoes (Cavalleiras, Landinas, and de Beja) - -	kilogramme	20	1·06
34	Tea - - - - - -	„	150	8
35	Lead or zinc, coarse beaten out, in plates or bars -	„	10	·53
36	„ in shot - - - - -	„	20	1·06
37	Copper, old, and in plates and bars - - -	„	30	1·60
38	„ from China, or Chinese - - -	„	170	9·08
39	Coins, Portuguese, gold - - - -	- -	free.	
40	„ Foreign, gold or silver - - -	- -	do.	
41	„ Portuguese, silver or copper, from Portuguese ports	- -	do.	
42	„ „ „ „ „ Foreign ports -	-	prohibited.	
43	Shipping, in any condition or for any purpose - -	3 per cent. *ad valorem.*		
44	„ moved by steam - - -	- -	free.	
45	Muskets - - - - -	each	480	2 1·60
46	Corn flour - - - - -	- -	free.	
47	Iron, beaten out, in bars in plates - - -	kilogramme	10	·53
48	„ in nails of any kind - - -	„	20	1·06
49	„ in tools and implements for trades, arts, and agriculture - - - -	- -	free.	
50	Ice - - - - -	- -	do.	
51	Guano and other manure - - - -	- -	do.	
52	Legumes of all kinds - - - -	- -	do.	
53	Books, stitched and bound, in any language, music, printed pamphlets, geographical charts and maps -	- -	do.	
54	Machines and utensils for industry and agriculture -	- -	do.	
55	Timber for masts and shipping - - -	½ per cent. *ad valorem.*		
56	Butter from cows' milk, from Europe - -	kilogramme	120	6·40
57	„ „ „ „ „ India - - -	„	40	2·13
58	Molasses - - - - -	decalitre	450	2
59	Glass, trinkets (Missangas) - - -	kilogramme	40	2·13
60	Mungaz (red ivory beads) and false coral - -	„	120	6·40
61	Linseed oil - - - - -	„	30	1·60
62	Pieces of artillery - - - - -	-	prohibited.	
63	Pearls, diamonds, and other precious stones - -	½ per cent. *ad valorem.*		
64	Gunpowder - - - - -	kilogramme	50	2·66
65	Printing presses and type - - - -	- -	free.	
66	Salt - - - - -	- -	do.	
67	Sacks of any kind - - - -	- -	do.	

TARIFF.—MOZAMBIQUE—*concluded.*

Importation—concluded.

Numbers of Articles.	Nomenclature.	Units.	Duties. Reis.	Duties. Sterling.
				s. d.
68	Seeds - - - - - -	- -	free.	
69	Tiles - - - - - -	- -	do.	
70	Bricks of any kind - - - - -	- -	do.	
71	Dyes - - - - - -	kilogramme	30	1·60
72	„ in powder - - - - -	„	20	1·06
73	„ common vermillion - - - -	„	10	·53
74	Tutenag - - - - - -	„	30	1 ·60
75	Wine in casks - - - - - -	decalitre	360	1 7·20
76	„ in bottles - - - - -	„	600	2 8
	All other articles not mentioned, 6 per cent. *ad valorem*, whatever may be their nationality and the port of shipment.			

TARIFF OF MOZAMBIQUE.

Exportation.

Numbers of Articles.	Nomenclature.	Units.	Duties. Reis.	Duties. Sterling.
				d.
77	Wax - - - - - -	kilogramme	20	1·06
78	Teeth of the hippopotamus, of two kilogrammes or more -	„ -	110	5·86
79	„ „ „ common - - -	„ -	15	·80
80	Ivory, coarse - - - - -	„ -	160	8·52
81	„ middle quality - - - -	„ -	110	5·86
82	„ fine - - - - -	„ -	100	5·33
83	„ dry or broken - - - -	„ -	80	4·26
84	„ called "Cera," or "Escaraveths" - -	„ -	40	2·13
85	Horns of the rhinoceros - - - -	„ -	30	1·60
86	Tortoise - - - - -	5 per cent.	*ad valorem.*	
	All other articles not mentioned, 3 per cent. *ad valorem*, whatever may be their destination.			

(Signed) LUIZ AUGUSTO REBELLO DA SILVA.

DEPARTMENT OF MARINE AND COLONIES,
12*th November* 1869.

TABLE OF FARES *to be deducted from the gross Weight of Merchandise subject to Duty on the net Weight.*

Merchandise.	Nature of Parcels.	Tare per cent.
Sugar, refined, in loaf -	Barrels, casks, and boxes - - -	16
„ „ in any state -	„ „ „ - - -	10
„ not refined -	Bundles (feixes) - - -	15
	Boxes - - - -	14
	Casks and "Carax" - - -	8
	Single sacks - - - -	2
	Double sacks, or with mats - - -	4

TABLE OF FARES *to be deducted from the gross Weight of Merchandise subject to Duty on the net Weight*,—continued.

Merchandise.	Nature of Parcels.	Tare per cent.
Tea - - -	Single chests and coffers - - -	30
	Cased chests - - - -	33
	Double „ - - - -	44
Butter - - -	Barrels - - - -	20
	Jars and Jugs - - - -	30
Metals, in any state - -	Barrels, casks, cases and tubs - -	6
All other merchandise when not cleared, without tare -	Barrels, casks, cases and leather bags - -	12
	Bales, small bales, parcels, packets, loads, sacks, and bundles in hemp-cloth or mats - -	3
	Panniers, baskets, small baskets, "gigos," "latticed cases," "cubos," tin cases, baskets, "condicas," "cabazes," and "cestos" - - -	6
	Pitchers and earthenware bottles - -	25
	Cases with leather belts - - -	14

(Signed) LUIZ AUGUSTO REBELLO DA SILVA.

DEPARTMENT OF MARINE AND COLONIES,
12th/8th *November* 1869.

Portuguese Indian Possessions.

Taking into consideration the Report of the Minister and Secretary of State for Marine and Colonies.

Availing myself of the authorization accorded in virtue of the 1st Section of the 15th Article of the Additional Act to the Constitutional Charter of the Kingdom.

After consulting the Board for the Colonies and the Council of Ministers, I am pleased to decree as follows:—

Article I.—The tariff annexed to this decree, and which forms part thereof, as well as the 18 Preliminary Articles which accompany the same, are declared to be in force in the Custom Houses of the Portuguese Indian Possessions.

Article II.—All legislation to the contrary is hereby revoked.

The Minister and Secretary of State for Marine and the Colonies shall accordingly cause the same to be carried into execution.

(Signed) THE KING.
(Countersigned) LUIZ AUGUSTO REBELLO DA SILVA.

PALACE,
12*th November* 1869.

TARIFF OF THE CUSTOM HOUSES OF THE PORTUGUESE POSSESSIONS IN INDIA.

Preliminary Articles.

Article I.—All goods and merchandise of foreign production imported through the Custom Houses of the Portuguese Indian Possessions shall pay the duties of consumption as laid down, in provincial reis, in Table No. 1.

Article II.—All goods and merchandise of national production, and imported through the Custom Houses of the Portuguese Indian Possessions, shall pay 50 per cent. of the duties of consumption as laid down in Table No. 1.

Section. An exception is made with respect to wines from grapes of national production which shall pay 420 reis per almude.

Article III.—All goods and merchandise of foreign production which shall have paid the duties of consumption at any Custom House of the kingdom, or of the adjacent islands, shall be held to be national unto all the intents of the foregoing Article.

Article IV.—All goods and merchandise, being the produce of the Portuguese Indian Possessions, which shall be imported from any port in those possessions to another, in national or foreign vessels, aswell as all goods and merchandise of foreign production which shall have paid the duties of consumption in any Custom House of the said possessions, are to be admitted free of any duties of consumption.

Article V.—Cocoa and its pith or marrow (copra) of foreign production imported into the same possessions for the purpose of being converted into oil shall be admitted free of duty.

Section 1.—Such oil shall be exported within the term of one year, counting from the clearance inwards of the said raw materials at the rate of 4 almudes per 1,000 cocoas or 8 arrobas of "copra."

Section 2.—The infraction of the rule in the foregoing paragraph is liable to the payment of double the amount of duties of consumption as laid down in the above-mentioned table, upon the importation of the said articles.

Section 3.—The importer shall find sufficient surety to ensure a compliance with the rule laid down in the foregoing Article.

Article VI.—Cotton stuffs of any kind or origin imported into the Portuguese Indian Possessions for the purpose of being dyed or printed, and then re-exported, shall be admitted duty-free.

Section. The clearance of this merchandise is subject to the same term, fine, and surety, as laid down in the paragraphs 1 to 3 of the foregoing Article.

Article VII.—All goods and merchandise, either produced or manufactured in the Portuguese Indian Possessions, and exported either to foreign countries, or to national territory, shall pay the duties laid down in Table No. 2.

Article VIII.—All salt exported in vessels with a castle (penão) shall be cleared under surety, or after depositing a sum equal to the highest amount of duty to which this article is liable.

Section 1. The exporter is bound to prove, within the term of two years from the date of clearance, that the salt exported was landed on the south beyond Compta, and on the north beyond Ratanagueri.

Section 2. In case of non-compliance with the rule laid down in the foregoing paragraph, he shall forfeit the sum in deposit, or in case surety should have been found, he shall pay a sum equal to the amount of the highest duty.

Article IX.—All goods produced or manufactured in the Portuguese Indian Possessions, and exported overland, shall pay the duties laid down in Table No. 3.

Article X.—All articles not specified in the tariff shall pay an import duty of six per cent. *ad valorem*, whatever may be the nationality or origin of the merchandise, and the exportation thereof is to be free.

Article XI.—All goods and merchandise, no matter from what territory or under what flag they come, shall be admitted in bond for the purpose of re-exportation.

Section.—Re-exportation is free of duty, but is subject to the payment of werehouse rent, if the period of their being in bond should have exceeded 30 days.

Article XII.—The *ad valorem* duties shall be regulated in the following manner:—

The importer shall sign a statement describing his goods, and the value thereof in their original market, annexing the respective invoice to the statement.

The exporter shall present a similar statement, merely describing his goods and their value in the markets of the province.

In case the Custom House Clerks should consider the valuation to be prejudicial to the interests of the Public Treasury, the Chief of the Custom House shall appoint another Clerk as arbiter, and the merchant shall appoint another person on his side, and should they agree in their award, it shall be immediately adopted; in case, however, they should differ, the Chief of the Custom House shall appoint a second arbiter who shall decide in favour of either award, and this shall be the final valuation.

To the value as stated by the importer, or as fixed by the arbiters in case of doubt, 10 per cent. on the amount of such value shall be added, for the recovery of the import duties, on account of expenses of conveyance, insurance, and commission; and the import duties are to be computed upon the sum total.

The export duties are to be computed merely upon the value as stated by the exporter, or as fixed by the arbiters, in accordance with this Article.

Article XIII.—No articles of which the importation, re-exportation, and transit are not subject to duty, shall be cleared either inwards or outwards until such clearance is registered in the respective Custom House book, with a statement of the quantity and value of such articles.

Article XIV.—In all the Custom Houses of Goa, the weights and measures shall be in accordance with the standard of the Municipal Chamber of the district "of the Islands," and in those of Damao and Diu in accordance with those of the respective municipalities.

Article XV.—The additional 10 per cent. levied by the "portaria" of the Governor General, No. 135 of the 16th of December 1852, the two "tangas" additional per "arroba" of sugar at Damao, the additional ½ per cent. on imports, and 2 per cent. on imports, and 24 reis on the tissues of brancavara at Diu, and the taxes called imports upon cocoa, copra, and areca, and one-third upon "parangues" (vessels), "goddi," and the duties on wine, jagra, sugar, and "sura," which are conveyed from the "New Possessions" to the old ones, are abolished.

Article XVI.—The importation of gunpowder is allowed, as well as that of tobacco, in leaf and in powder, and in cheroots and cigarettes, on payment of the duties as laid down in Table No. 1.

Article XVII.—There shall be a Permanent Tariff Committee, which is to be consulted with respect to any alteration which it may be necessary to make for the future in the tariff, and with respect to any doubts and disputes which may arise in carrying the same into execution.

Section. The reports of this Committee shall be submitted in draft form to the Governor General, who will be the competent person to settle the matter

but everything having reference to any alteration in the tariff shall be subject to the approval of the Government.

Article XVIII.—The Governor General of the Portuguese Indian Possessions is hereby authorized, after consulting the Tariff Committee, to organize and publish a Table of Tares.

(Signed) LUIZ AUGUSTO REBELLO DA SILVA.

DEPT. OF MARINE AND COLONIES,
12th November 1869.

TABLE No. 1.—IMPORTATION.

Portuguese Indian Possessions.

Numbers of Articles.	Nomenclature.	Units.	Duties in Provincial Reis.
1	Steel, coarse	arroba	120
2	„ wrought	11 per cent.	*ad valorem.*
3	Manure for agriculture	free.	
4	Staves and empty barrels	do.	
5	Brandy of all kinds	almude	1,000
6	Cotton in pod, in wool or twist	free.	
7	Alkalis: Soda (Barrels)	do.	
8	„ „ (Sagicar)	do.	
9	„ Potash (Usar)	do.	
10	Anchors of iron	arroba	90
11	Animals, dry, and shells for museums	free.	
12	„ live of all kinds	do.	
13	Rice in shell (Bate)	6 curos	30
14	„ unshelled	„	60
15	Sugar of all kinds	arroba	300
16	Oil of sesamum	almude	150
17	„ from fish	„	180
18	„ from cocoa	„	660
19	Mercury	lb.	60
20	Whalebones, ivory, tusks, teeth of hippopotamus, tortoises, horns, bones, and nails of all qualities	1 per cent.	*ad valorem.*
21	Beverages, fermented beer, cider, and any others not specified	almude	1,000
22	Beverages, distilled, cognac, gin, liqueurs, and any others not mentioned	„	2,400
23	Cables, from cocoa tissues of all kinds	candil of 512 lbs.	3,300
24	„ hempen „ „ „	„	3,300
25	Coffee	arroba	660
26	Cocoa filaments (sumb) or slightly twisted	free.	
27	Shoes of any kind	11 per cent.	*ad valorem.*
28	Meats, salted, in sausages, or prepared in any other manner, including bacon	do.	
29	Coal	free.	
30	Grease, in loaf or raw	do.	
31	Wax, wrought and whitened	arroba	2,500
32	„ in loaf, in sheet, or raw, not whitened	free.	
33	Tea	lb.	100
34	Hats of all kinds for men and women	11 per cent.	*ad valorem.*
35	Lead, coarse, in bars, large or small, in sheets, plates, in rods, large or small	arroba	120
36	„ wrought	11 per cent.	*ad valorem.*

TABLE No. I.—IMPORTATION —*continued.*

Numbers of Articles.	Nomenclature.	Units.	Duties in Provincial Reis.
37	Copper, in bars, large or small, in sheets, in plates, large or small	lb.	20
38	„ wrought	11 per cent.	*ad valorem.*
39	Glue and isinglass	free.	
40	Chairs of iron	arroba	90
41	Cork, raw or wrought	11 per cent.	*ad valorem.*
42	Coins, gold or silver of any country	free.	
	Dyeing drugs from Vegetable Matter.		
43	Ardas of all kinds	free.	
44	Peel of pomegranates	do.	
45	Cussomb (safflower)	do.	
46	Leaves of daury or dauneim	do.	
47	Indigo (anil dy and plant)	do.	
48	Luddar	do.	
49	Oak-gall (mas orimoge of all kinds)	do.	
50	Naquecar	do.	
51	Parnás or Padduás	do.	
52	Dyer's madder (mangil) of all kinds	do.	
53	Root of sarangui	do.	
54	Sapang (Brazil wood)	do.	
55	Tumoltspar	do.	
56	Ordhilla weed	do.	
	Dyeing drugs made from Minerals.		
57	Sulphate of iron	free.	
58	"Pedra Hume," sulphate of alumen and potash	do.	
59	Shipping in any condition	3 per cent.	*ad valorem.*
60	„ moved by steam	free.	
61	„ of one joist (tonas almadias)	do.	
62	Spices of all kinds	11 per cent.	*ad valorem.*
63	Muskets or carbines, and pistols of all kinds	do.	
64	Tin (callaim), coarse, in large or small bars, in sheets, in plates, rolled	lb.	10
65	„ wrought	11 per cent.	*ad valorem.*
66	Tissues, cotton, wool, linen and silk	do.	
67	Mathematical and surgical cases	free.	
68	Iron, grapling	arroba	90
69	Clothing of all kinds	11 per cent.	*ad valorem.*
70	Implements or tools, machines, instruments, and agricultural and industrial utensils of all kinds	free.	
71	Iron, coarse, in large or small bars, in sheets, in plates, in large or small rods of any kind	arroba	60
72	„ wrought	11 per cent.	*ad valorem.*
73	Cotton-thread, white or dyed, of any thickness for tissues	free.	
74	Tin plate, wrought	11 per cent.	*ad valorem.*
75	Fruits and vegetables (green)	free.	
76	Ice	do.	
77	Sesame (called by the natives tilió)	do.	
78	Instruments, scientific	do.	
79	„ musical, of all kinds	11 per cent.	*ad valorem.*
80	Jagra (cocoa-sugar)	arroba	200
81	Brass, coarse, in large or small bars, sheets, plates, rolled up, large or small	lb.	20

TABLE No. I.—IMPORTATION —*continued.*

Numbers of Articles.	Nomenclature.	Units.	Duties in Provincial Reis.
82	Brass, wrought	11 per cent.	*ad valorem.*
83	Legumes of all kinds and farinaceous substances (pulse)	6 curos	60
84	Milk	free.	
85	Flax or hemp, raw	do.	
86	Books, maps, printed, lithographed, or manuscript, stitched or bound	do.	
87	Earthenware, porcelain, or any other glassware	11 per cent.	*ad valorem.*
88	Machines	free.	
89	Timber for ships, yards, and masts	½ per cent.	*ad valorem.*
90	Butter (native)	1	do.
91	„ (from Europe)	lb.	60
92	Molasses and honey	arroba	60
93	Metals, coarse, of all kinds, not specified	5 per cent.	*ad valorem.*
94	Pulleys, tackle, with iron or bronze work	½	do.
95	Wooden furniture	11	do.
96	Cutlery	11	do.
97	Bones	1	do.
98	Gold, coarse, in pieces, bars, powder or dust, native or broken	free.	
99	Eggs	do.	
100	Paper for writing	1 per cent.	*ad valorem.*
101	„ printing	free.	
102	Blocks of stones, raw, hewn, or in millstones	do.	
103	Stones for lithography	do.	
104	„ precious, of all kinds	1½ per cent.	*ad valorem.*
105	Fish, salt	arroba	250
106	Pearls and "aljofars" (small pearls)	1½ per cent.	*ad valorem.*
107	Pinaca (residuum of cocoa)	free.	
108	Gunpowder	15 per cent.	*ad valorem.*
109	Silver, coarse, in pieces, in powder or dust, native and broken	free.	
110	Nails of brass or copper of all kinds	arroba	1,000
111	„ iron	„	80
112	Printing and lithographic presses	free.	
113	Cheese	11 per cent.	*ad valorem.*
114	Ratan (rotins)	candil of 512 lbs.	850
115	Sacks of all kinds	free.	
116	Saltpetre (raw)	candil of 512 lbs.	850
117	Seeds for agriculture, except bate rice unshelled	free.	
118	„ and oily fruits	do.	
119	Tobacco, in leaf, in rolls, in paste, or loose, of all kinds	lbs.	100
120	„ in cheroots, or manufactured in any way	„	300
121	„ in snuff or in powder, of all kinds	„	350
122	Tortoise-shell	1 per cent.	*ad valorem.*
123	Ink for printing and lithography	free.	
124	Wheat	6 curos	60
125	Type for printing	free.	
126	Vinegar	almude	250
127	Wine, from grapes, of all kinds	„	3,000
128	Zinc, coarse	arroba	120
129	„ wrought	11 per cent.	*ad valorem.*
	All national or foreign products imported under any flag, and not specified in the tariff, shall pay 6 per cent. *ad valorem.*		

(Signed) LUIZ AUGUSTO REBELLO DA SILVA.

MARINE DEPARTMENT,
12*th November* 1869.

TARIFF.—INDIA.

TABLE No. II.—EXPORTATION.

Duties on Articles exported by Sea.

Numbers of Articles.	Nomenclature.	Units.	Duties in Provincial Reis.
130	Areca	candil of 512 lbs.	820
131	Rice, in the shell	6 curos	30
132	„ unshelled	„	60
133	Potatoes	candil of 512 lbs.	60
134	Fins of fish	5½ per cent.	*ad valorem.*
135	Acajon chesnuts (casheu, in shell)	candil of 512 lbs.	260
136	„ „ (casheu, unshelled)	„	520
137	Cocoa	thousand	330
138	Legumes and farinaceous substances	6 curos	60
139	Firewood and wood of all kinds	candil of 512 lbs.	600
140	Salt of all kinds	candil of 20 curos	220
141	„ „ when exported beyond the ports of Ratanagueri and Compta	„	20
	All other articles not specified	free.	

MARINE DEPARTMENT, 12*th November* 1869. (Signed) LUIZ AUGUSTO REBELLO DA SILVA.

TARIFF.—INDIA.

TABLE No. III.—EXPORTATION.

Duties on Articles exported through the Frontier.

Numbers of Articles.	Nomenclature.	Units.	Duties in Provincial Reis.
142	Areca	candil of 512 lbs.	820
143	Rice, in the shell (bate)	candil of 6 curos	30
144	„ unshelled	„	60
145	Cocoa-oil	almude	60
146	Fins of fish	5½ per cent.	*ad valorem.*
147	Casheu chesnuts (Acajon) in shell	candil of 512 lbs.	260
148	„ „ „ unshelled	„	520
149	Cocoa	thousand	330
150	Medulla of the cocoa (copra)	candil of 512 lbs.	660
151	Legumes and farinaceous substances of all kinds, except potatoes	6 curos	60
152	Firewood	candil of 512 lbs.	660
153	Salt fish	arroba	30
154	Salt of all kinds	candil of 20 curos	220
	All other articles not specified	free.	

MARINE DEPARTMENT, 12*th November* 1869. (Signed) LUIZ AUGUSTO REBELLO DA SILVA.

Ambriz.

Taking into consideration the Report of the Minister and Secretary of State for the Department of Marine and Colonies;

Availing myself of the authorization accorded in virtue of the first paragraph of the fifteenth Article of the Additional Act to the Constitutional Charter of the Monarchy;

After having consulted the Board for the Colonies and the Council of Ministers,

I am pleased to decree as follows:—

Article I.—All goods and merchandise, national or foreign, imported into the Custom House of Ambriz shall pay, whatever may be the port of shipment and the flag of the importing vessel, a duty of four (4) per cent. *ad valorem*, calculated upon the price of the exporting market as shown by the invoice.

Article II.—In the same manner two (2) per cent. more shall be recovered, to be specially applied to public works.

Article III.—Exportation is free from the payment of any duties or taxes.

Article IV.—The Custom House at Ambriz shall admit in bond all articles of trade whatever, shipped from any national or foreign port.

Article V.—All goods and merchandise admitted into bond shall be free from the payment of duty when re-exported; but they shall pay a warehouse rent, for each succeeding month after the expiration of six months from date of entry, at the rate of 5 reis per 15 kilogrammes (·26*d.*) upon dry articles, and of 15 reis (.80*d.*) per decalitre upon liquids.

Article VI.—The maximum period allowed to liquids in bond shall be one year, and two years for dry goods, counting from the date of entry. Upon the expiration of this period the goods shall be sold by public auction, after 30 days' notice. Up to the day of the auction, however, the owners, or their representatives, will be allowed to withdraw such goods, after paying the respective duties and warehouse rent.

The expenses of the auction are to be paid out of the proceeds of the sale, and the duties and warehouse rent shall be deducted from the said proceeds, and entered as revenue, the remainder, should there be any, being kept in deposit, on account of the interested parties.

Article VII.—The Custom House shall not be held responsible for damages accruing to merchandise while deposited there, if such damages should have been caused by any accidents or unforeseen circumstances, and not from any neglect on the part of their responsible *employés*; and no compensation for duties will be allowed on account of any difference in the quality of the merchandise presented for clearance, with the exception of the case mentioned in the following Article.

Article VIII.—Whenever any merchandise shall appear in the Custom House with average exceeding 3 per cent. on the primitive value, not of the damaged article only, but on the whole parcel of which it forms part, should the owners or receivers make an application to that effect, a reduction shall be made in the duty in proportion to the difference between the value of the merchandise in its primitive state and its value after being damaged.

Section. Articles of food, medicinal drugs, and medicines are not included in this rule; and if they should have suffered an average exceeding 3 per cent., they shall be immediately destroyed, if the owners or receivers should offer no objection thereto; but in case they should, they shall only be destroyed with the assent of experts, among whom there shall always be a representative of the Board of Public Health of the Province.

Article IX.—For the purpose of fixing the reduction to be made on the damaged articles, the Chief Officer of the Custom House shall appoint an arbiter from among the Custom House Clerks, and the owner or receiver of the merchandise shall appoint another arbiter, both of whom shall state the cause of the average, and the difference between the value of the merchandise in its then present state, and that which it had before the average; and in view of this declaration, which shall be embodied in a public deed by the proper officer, the reduction of the duties, as applied for, shall be made.

Section.—In case the arbiters should not agree, the Chief Officer of the Custom House shall appoint a third arbiter, who shall decide in favour of either award, without further appeal.

Article X.—When once the merchandise has entered the Custom House, it shall not be taken out without a regular clearance, and without paying the proper amount of duties.

For the convenience of the public service and of trade, the following articles are excepted, brandy, wine, vinegar, combustible articles, salt, tiles, lime, stone blocks, wood, and fruit.

All the foregoing goods, after undergoing examination on the quay by a Custom House Officer, may be delivered to their owners, after obtaining the permission of the Chief Officer of the Custom House.

Before the delivery of such merchandise, a declaration, signed by the Custom House Officer and the receiver, shall be written out in a book for that special purpose describing the merchandise thus delivered, stating the weights, marks, and designation, and mentioning especially the amount of duties due thereon, together with the condition that they are to be paid within the period of eight days.

Article XI.—It is altogether forbidden to send goods and merchandise to be exchanged at any point to the south of Ambriz by Commercial Deputies or by any other means.

Section. Infractions of the enactment shall be liable to the penalties imposed upon smugglers.

Article XII.—Goods imported into the Custom House of Ambriz, when cleared in transit for other ports in the Province, shall pay therein the duties of consumption, as laid down in the Customs' Tariff of the Province.

Article XIII.—The duties laid down in this decree shall not be altered before the year 1880, unless it should be deemed expedient to reduce these duties.

***Article* XIV.—All legislation to the contrary is hereby revoked.**

The Minister and Secretary of State for the Department of Marine and Colonies shall accordingly cause the same to be carried into execution.

(Signed) THE KING.

(Countersigned) LUIZ AUGUSTO REBELLO DA SILVA.

AT THE PALACE,
12th November 1869.

GOVERNMENT OF INDIA.

FINANCIAL DEPARTMENT.

STATEMENT of the TOTAL ASSESSED VALUE of, and of the TOTAL AMOUNT of CUSTOMS DUTY COLLECTED upon, the ARTICLES of IMPORTS and EXPORTS of BRITISH INDIA (as enumerated in SCHEDULES A. and B. annexed to ACT XVII of 1867), *in each year ending* 31*st MARCH* 1868 *and* 1869.

No.	SCHEDULE A.—IMPORTS. DESCRIPTION OF ARTICLES.	Value on which Duty is assessed.	Rate of Duty.	Total Value on which Duty was assessed in each year ending 31st March 1868.	Total Value on which Duty was assessed in each year ending 31st March 1869.	Amount of Duty collected in each year ending 31st March 1868.	Amount of Duty collected in each year ending 31st March 1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
1	Apparel, including Haberdashery, Millinery, &c.	*Ad valorem* ...	7½ per cent....	52,203	50,17,914	3,08,953	3,76,391
2	Arms, Ammunition and Military Stores—		7½ per cent., except as regards Military and other Regulation Uniforms and Accoutrements when imported for private use by persons in the Public Service, which are free.				
	Gunpowder, common ...	0 5 per lb. ...		2,35,680	1,61,295	17,678	12,107
	„ Sporting ...	1 0 „ ...					
	Fire Arms and parts of ditto ...	*Ad valorem* ...		4,42,387	4,94,803	34,851	35,715
	All other sorts, including Military Accoutrements, Uniforms, &c....	*Ad valorem* ...		1,39,444	1,32,504	10,472	11,026
			Total of Arms, &c. ...	8,17,511	7,88,602	63,001	58,848
3	Blacking—						
	Quarts	5 0 per dozen ...	7½ per cent...	27,371	6,525	2,054	490
	Small	2 8 „ ...					
	In Tins	0 3 per lb. ...					
4	Cabinet-Ware	*Ad valorem* ...	7½ per cent...	2,18,755	2,36,593	16,791	17,772
5	Candles—Wax, Composition and other kinds—						
	Candles, Wax	1 0 per lb. ...	7½ per cent...	6,62,737	4,72,672	49,716	34,762
	„ Paraffine	0 8 „ ...					
	„ Spermaceti ...	0 8 „ ...					
	„ Composition and other sorts	0 6 „ ...					
6	Carpets and Carpeting—						
	Single Carpets	*Ad valorem* ...	5 per cent...	29,498	21,856	1,557	1,097
	Carpeting in rolls ...	*Ad valorem* ...					
7	Carriages	*Ad valorem* ...	7½ per cent...	1,62,442	1,20,867	12,145	9,062
8	Chemicals	*Ad valorem* ...	7½ per cent...	9,087	55,242	682	4,149
9	China and Japan Wares, other than Lacquered Ware, which is free	*Ad valorem* ...	7½ per cent...	43,294	50,71[illegible]	3,277	3,859
10	Clocks, Watches, and other Time-keepers	*Ad valorem* ...	7½ per cent...	4,03,950	4,63,980	29,323	34,793
11	Coach Builder's Materials ...	*Ad valorem* ...	7½ per cent...	82,873	1,04,257	6,210	7,819
12	Coffee—						
	Persian Gulf and Red Sea ...	30 0 per cwt. ...	7½ per cent...	2,10,803	2,95,503	15,812	22,164
	Other places	20 0 „ ...					
13	Corks	1 8 per gross ...	7½ per cent...	1,89,016	1,52,802	14,140	11,558
14	Cotton—						
	Thread—						
	Sewing Thread, white and colored in reels or on cards not exceeding one hundred yards.* ...	0 12 per lb. ...	7½ per cent...	5,23,631	3,50,505	39,154	26,260
	„	2 8 per gross reel.					
	„ Goa and Country ...	30 0 per cwt. ...					

* Exceeding this length to be charged in proportion.

SCHEDULE A.—IMPORTS.

No.	DESCRIPTION OF ARTICLES.	VALUE ON WHICH DUTY IS ASSESSED.	RATE OF DUTY.	TOTAL VALUE ON WHICH DUTY WAS ASSESSED IN EACH YEAR ENDING 31ST MARCH		AMOUNT OF DUTY COLLECTED IN EACH YEAR ENDING 31ST MARCH	
				1868.	1869.	1868.	1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
	COTTON—*continued.*						
	Twist—						
	Mule, under No. 15 ...	0 7 per lb. ...					
	" Nos. 16 to 24 ...	0 11 " ...					
	" " 25 to 32 ...	0 12 " ...					
	" " 33 to 42 ...	0 13 " ...					
	" " 43 to 52 ...	0 14 " ...					
	" " 53 to 60 ...	1 1 " ...					
	" No. 70 ...	1 2 " ...					
	" " 80 ...	1 3 " ...					
	" " 90 ...	1 4 " ...	3½ per cent...	1,70,70,382	1,67,88,046	5,98,180	5,88
	" " 100 ...	1 5 " ...					
	" Nos. 110 to 150 ...	1 10 " ...					
	" " 160 to 200 ...	1 14 " ...					
	Water, No. 20	0 12 " ...					
	" " 30	0 13 " ...					
	" " 40	0 15 " ...					
	" " 50	1 1 " ...					
	Above " 50	1 4 " ...					
	Turkey Red Twist, all kinds* ...	1 6 " ...	3½ per cent... *Duty to be charged on the Grey weight of the colored yarn; when not ascertainable, the actual wharf weight or Invoice weight to be taken.	93,69,143	1,10,51,843	3,27,212	3,85,(
	Twist, Orange, Red and other colors*	1 2 " ...					
	Piece Goods—						
	Grey—						
	Shirtings, Madapollam and Prints	0 13 per lb. ...					
	Long Cloths, Jean, Domestics,						
	Sheetings, Drills and T. Cloths	0 11 " ...	5 per cent.	10,63,63,373	9,99,87,623	53,00,174	49,7(
	Other sorts ...	*Ad valorem* ...		4,43,82,363	6,02,64,707	22,23,933	30,1(
	Cotton Ropes	25 0 per cwt. ...	7½ per cent.	3,488	4,542	261	
	Cotton Goods,—other kinds ...	*Ad valorem* ...					
	TOTAL OF COTTON GOODS OF ALL KINDS ...			17,77,12,380	18,84,47,266	84,88,914	89,(
15	DRUGS AND MEDICINES—						
	Acid, Sulphuric	0 3 per lb. ...		64,724	34,161	4,854	
	Alkali, Country (Sajee Khar) ...	2 0 per cwt. ...		27,532	26,551	2,065	
	Aloes, black	10 0 " ...		22,961	18,471	1,721	
	" Socotra	25 0 " ...					
	Alum	3 8 " ...		1,91,540	2,83,282	14,367	
	Arsenic	25 0 " ...		10,698	17,464	803	
	" China Munseel ...	8 0 " ...					
	Assafœtida (Hing)	55 0 " ...		1,32,914	1,05,609	9,968	
	" Coarse (Hingra) ...	10 0 " ...					
	Brimstone, Flour	7 0 " ...					
	" Roll	6 0 " ...	7½ per cent.	1,62,032	1,07,810	12,378	
	" Rough	4 8 " ...					
	Camphor, Bhimsing (Barras), ...	50 0 per lb. ...					
	" refined Cake ...	65 0 per cwt. ...		4,54,565	3,79,533	40,120	
	" Crude in powder ...	30 0 " ...					
	Cassia Lignea	38 0 " ...		30,131	91,876	2,260	
	Coova, red	*Ad valorem* ...		...	...	...	
	Copperas, green	2 8 per cwt. ...		24,169	55,203	1,814	
	Quinine	50 0 per lb. ...		3,63,490	1,57,787	27,270	
	Sal Ammoniac	22 0 per cwt. ...		25,348	10,606	1,902	
	Salep	60 0 " ...		...	9,556	...	
	Senna Leaves	6 0 " ...		22,523	4,048	1,688	
	All other sorts	*Ad valorem* ...		8,84,518	9,38,764	66,389	
	TOTAL OF DRUGS & MEDICINES ...			24,17,145	22,40,721	1,87,599	

No.	DESCRIPTION OF ARTICLES.	VALUE ON WHICH DUTY IS ASSESSED.	RATE OF DUTY.	TOTAL VALUE ON WHICH DUTY WAS ASSESSED IN EACH YEAR ENDING 31ST MARCH		AMOUNT OF DUTY COLLECTED IN EACH YEAR ENDING 31ST MARCH	
				1868.	1869.	1868.	1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
	DYEING AND COLORING MATERIALS—						
	Cochineal	1 12 per lb. ...	7½ per cent.	6,13,879	3,93,017	46,038	29,476
	Gallnuts, Country, Myrabolam ...	3 0 per cwt. ...		58,440	65,991	4,383	4,947
No.	" Persian	35 0 " ...					
	Gamboge Wood	20 0 " ...		85	4,943	6	371
	Madder or Munjeet... ...	10 0 " ...		41,779	54,378	3,128	4,078
	Orchilla Weed	8 0 " ...		23,132	8,238	1,735	616
	Saffron, Europe	16 0 per lb. ...					
	" Meadow, Soorunjun ...	10 0 per cwt. ...		2,33,283	2,34,649	17,495	17,613
	" Persian	12 0 per lb. ...					
	" In cakes or lumps ...	5 0 " ...					
	Sapan Wood and Root ...	3 8 per cwt. ...		86,165	26,040	2,736	2,014
1	All other sorts	*Ad valorem* ...		72,189	1,86,902	19,894	14,037
	TOTAL OF DYEING & COLORING MATERIALS ...			12,78,952	9,74,158	95,415	73,152
2	FELT—						
	Sheathing, 40 × 32 inches ...	0 4 per piece ...					
	In rolls or in lengths ...	0 4 per yard ...	7½ per cent.	33,882	45,211	2,541	3,085
	All other sorts	*Ad valorem* ...					
8	FIREWORKS—						
	China	30 0 per box of 133⅓ lbs.	7½ per cent.	3,24,754	2,55,387	24,381	19,15
	Other sorts	*Ad valorem* ...					
	FLAX, MANUFACTURES OF—						
	Piece Goods	*Ad valorem* ...	5 per cent.	5,74,421	5,89,[illegible]50	28,472	29,493
3	Other sorts	*Ad valorem* ...	7½ per cent.	31,753	47,391	2,365	3,510
4	TOTAL OF FLAX MANUFACTURES ...			6,06,174	6,37,041	[illegible]837	33,003
5	FRUITS AND VEGETABLES—						
	Almonds without shell ...	25 0 per cwt. ...				[illegible]53	9,563
	" with shell ...	10 0 " ...		3,26,122	1,27,182		2,338
	Cajoo kernels	10 0 " ...		...	31,163	3,158	90,392
	Cocoanuts	30 0 per 1,000 ...					
	" Kernel (Copra) ...	9 8 per cwt. ...		11,75,504	12,04,777	[illegible]569	677
6	Currants, Europe	35 0 " ...		20,907	9,016		
	" Persian	12 0 " ...				[illegible]807	85,669
	Dates, dry, in bags	4 0 " ...					
	" wet, in bags	3 0 " ...		23,70,591	11,42,153	1,7[illegible]	
	" " in pots	6 0 " ...					
7	C[illegible]					[illegible]218	459
	Figs, Europe	42 0 " ...		12,246	6,151	828	
8	C[illegible] " Persian, dried ...	6 0 " ...				551	[illegible]502
	Garlic	4 0 " ...	7½ per cent.	45,367	21,224	[illegible]flour	
9	CH[illegible] Pistachio nuts	14 0 " ...		11,055	9,31[illegible]	[illegible]time	1,030 7,172
	Prunes, Bussorah	12 0 " ...		7,349	[illegible]		
	Raisins, Black, Persian Gulf, Red						
10	CLOC[illegible] Sea and Khismis ...	12 0 " ...		13,727	[illegible]y, Persia,287		5,636
	KI[illegible] " Monacka, Persian Gulf,				Rose fl[illegible]		184 ...
	and Red Sea	7 0 " ...			R[illegible]		45 ... 75
11	COACH " other sorts	*Ad valorem* ...		75,151	95,652		
	Walnuts, Akroot	5 0 " ...		2,468			
12	COFFE[illegible] Mangoes, dried	*Ad valorem* ...		603	...		3,725
	Prunes, Europe	*Ad valorem* ...		...	...	[illegible]955	
	Other sorts, except Bidmishkh						
	and Buzarbuttoo nuts which are			...	994	...	
13	CORKS free	*Ad valo[illegible]m* ...					
14	COTTO[illegible]			65,837	46,108	[illegible]542	2,02,982
	Thres[illegible]						
	TOTAL OF FRUITS AND VEGETABLES ...			41,26,927	27,02,325	3,0[illegible]	

SCHEDULE A.—IMPORTS.

No.	DESCRIPTION OF ARTICLES.	VALUE ON WHICH DUTY IS ASSESSED.	RATE OF DUTY.	TOTAL VALUE ON WHICH DUTY WAS ASSESSED IN EACH YEAR ENDING 31ST MARCH		AMOUNT OF DUTY COLLECTED IN EACH YEAR ENDING 31ST MARCH	
				1868.	1869.	1868.	1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
21	GLASS AND GLASS-WARE—						
	Bangles, Glass, China, gilt ...	10 0 per 100 pairs		4,47,231	4,91,208	33,563	36,841
	" not gilt ...	5 0 " ...					
	Beads, China, ...	30 0 per cwt. ...		76,813	1,11,236	5,760	8,342
	" Common	28 0 " ...					
	" Ruby of all sizes ...	0 12 per lb. ...		11,014	21,730	826	1,629
	" Seed	0 10 " ...		1,37,325	1,29,749	10,749	9,732
	" Small, Scarlet and Red ...	0 10 " ...		1,59,140	2,21,822	11,937	16,637
	" Coral (false) Moorzun ...	0 8 per corge of 2,000 beads.					
	Glass, Broken	5 0 per cwt. ...		...	...	...	...
	" China, of all colors ...	40 0 per 133⅓ lbs.		...	...	...	...
	" Crown, colored ...	40 0 per 100 spl.ft.	7½ per cent.	2,01,382	2,09,484	15,107	15,712
	" Bent, " of sizes ...	5 0 " ...					
	Pearls, Plate, not silvered ...	2 10 per foot ...		17,623	68,407	1,322	5,156
	" False, Bajeria ...	13 0 per lakh ...					
	" 50 ria	1 0 per 1,000 ...					
	" 50 cia	8 0 per lakh ...		1,53,957	1,71,637	11,666	12,874
	" 50 athia	0 6 per 1,000 ...					
	" Tachea	0 12 " ...					
	Glass-ware, Wattanah	10 0 per lakh ...					
	ware of all other sorts, ex cept Bottles which are free	*Ad valorem* ...		6,92,828	11,28,175	51,956	84,433
		TOTAL OF GLASS AND GLASS-WARE ...		18,97,313	25,53,448	1,42,886	1,91,345
22	GOLD LEAF, EUROPE*	4 0 per hundred leaves ...	7½ per cent.	26,198	160	1,945	12
23	GRASS AND MANUFACTURES OF— OTHER CLOTH OF China	*Ad valorem* ...	5 per cent.	3,149	2,730	158	88
24	GUMS—						
	Gum, ...	10 0 per cwt. ...		...	...	...	...
	" ... e ...	16 0 " ...		1,24,116	1,67,309	9,307	12,547
	" ... gum ...	5 0 " ...		10,857	4,955	815	372
	"	33 0 " ...		1,74,276	2,09,353	13,071	15,700
	" Madapollam and Myrrh ...	12 0 " ...		957	2,245	72	169
	" Cloths, Jean, Dor ...	65 0 " ...		16,749	40,753	1,256	3,056
	" Cuggs, Drills, Gd ... Olebanum	9 0 " ...	7½ per cent.	1,38,849	1,46,433	10,414	10,983
	" Mus, Kino) ...	8 0 " ...		1,69,919	1,14,078	12,758	8,564
	"	24 0 " ...		1,014	...	76	...
	" Shirts, (false) ...	3 0 " ...		6,917	6,326	519	474
	Oth. All other sorts	8 0 " ...		60,221	1,09,621	4,810	8,225
	Cotton Stockings	*Ad valorem* ...		21,685	25,902	1,624	1,936
	Cotton Goods						
		TOTAL OF GUMS ...		7,25,560	8,26,975	54,722	62,026
	OTHERWISE DESCRIBED CONFECTIONERY) ...	*Ad valorem* ...	7½ per cent.	16,751	93,323	1,253	7,036
	DRUGS—						
	Bezoar Hides, prepared ...	30 0 each ...					
	Buffalo Hides, Country, Tanned	80 0 per score ...		15,709	18,004	1,178	1,351
15	DRUGS AND MEDICINES— Hides, Country, Tanned ...	60 0 " ...					
	Acid, Sulphuric Skins	40 0 per dozen ...	7½ per cent.	89,664	83,260	6,707	6,245
	Alkali, Carbonate of Skins	6 0 " ...					
	Aloes, Barbadoes Leather ...	40 0 per cwt. ...		...	...	...	...
	" Socotorine	*Ad valorem* ...		1,10,866	1,48,229	8,903	
	Alum						
	Arsenic	TOTAL OF HIDES AND SKINS ...		2,16,239	2,05,609	9,968	
	" Chiretta						
	Assafœtida	11 0 per cwt. ...					
	" Beer	12 0 " ...	7½ per cent.	1,032	1,07,810	12,378	
	Brimstone, Manufactures of ...	*Ad valorem* ...					
	" ...						
	Camphor, Musical ...	*Ad valorem* ...	7½ per cent.	4,565	3,79,533	40,120	
	" IVORY-WARE—	16					
	" Nuts' Grinders	300 0 per cwt. ...		30,131	91,876	2,260	
	Cassia Lignea, above 20 lbs. ...			...	...	...	
	Coova, re 10 lbs. and not exceeding	225 0 " ...		24,169	55,203	1,814	
	Copperas	125 0 " ...		63,490	1,57,787	27,270	
	Quinine ... under 10 lbs. ...			25,348	10,606	1,902	
	Sal Ammoniac, ow or Moye Teeth, 3 lbs.	225 0 " ...		...	9,556	...	
	Salep ... upwards ...			523	4,048	1,688	
	Senna Leaves, ow or Moye Teeth under	75 0 " ...		34,0	9,38,764	66,389	
	All other	*Ad valorem* ...					
	Manufactures of			12,35,001			
		TOTAL OF IVORY AND IVORY-WARE ...					

* Erroneously entered under "Jewellery" in the Bombay Return for 1869.

SCHEDULE A.—IMPORTS.

No.	DESCRIPTION OF ARTICLES.	VALUE ON WHICH DUTY IS ASSESSED.	RATE OF DUTY	TOTAL VALUE ON WHICH DUTY WAS ASSESSED IN EACH YEAR ENDING 31ST MARCH		AMOUNT OF DUTY COLLECTED IN EACH YEAR ENDING 31ST MARCH	
				1868.	1869.	1868.	1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
30	JEWELLERY INCLUDING PLATE—						
	Silver-ware, plain	1 6 per tolah ...	7½ per cent.	63,215	68,136	4,786	5,110
	Jewellery and Plate of all other kinds, excepting precious Stones and Pearls which are free ...	*Ad valorem* ...		7,44,930	7,33,449	55,826	55,065
		TOTAL OF JEWELLERY INCLUDING PLATE ...		8,08,145	8,01,585	60,612	60,175
31	JUTE, MANUFACTURES OF ...	*Ad valorem* ...	7½ per cent.	21,720	27,656	1,492	2,013
32	LAC—						
	Stick	16 0 per cwt. ...	7½ per cent.	19,832	17,797	1,490	1,48[illegible]
	Shell	28 0 " ...		...	29	...	[illegible]
	All other sorts	*Ad valorem* ...		...	...	...	...
		TOTAL OF LAC OF ALL KINDS ...		19,832	17,826	1,490	1,[illegible]686
33	LEATHER AND MANUFACTURES OF—						
	Leather	*Ad valorem* ...	7½ per cent.	2,267	...	170	[illegible]7,817
	Boots and Shoes			[illegible]6,101	5,04,218	20,937	[illegible]3,260
	Harness and Saddlery ...			[illegible]0,854	3,10,230	21,149	10,275
	Other sorts			1,[illegible]7,262	1,36,880	8,839	
		TOTAL OF LEATHER AND MANUFACTURES OF ...		6,79,484	9,51,328	51,095	71,352
34	LIQUORS—						
	Ale, Beer and Porter ...	*Ad valorem* ...	1 anna per Impl. gal.	Rs. 28,11,691 and Gals. 3,59,333	Rs. 29,37,340 and Gals. 3,22,530	95,940	96,559
	Cider and other fermented Liquors	*Ad valorem* ...	1 anna per Impl. gal.	Rs. 8,907 and Gals. 176	Rs. 7,459 and Gals. 1,133	17[illegible]	200
	Spirits	*Ad valorem* ...	Three Rupees the Impl. Gallon, and the duty to be rateably increased as the strength exceeds London Proof. Provided that ten per cent. *Ad valorem* shall be charged on all spirits used exclusively in Arts and Manufactures or in Chemistry, subject to such Rules as the Local Government shall from time to time prescribe, for ascertaining that such spirits are unfit for use as a beverage and incapable of being converted to that purpose. And the officer in charge of the Custom House, subject to the general instructions of the Local Government, shall decide what spirits fall within the proviso, and his decision thereon shall be final in law.	Rs. 32,26,076 and Gals. 1,82,849	Rs. 36,04,687 and Gals. 2,43,384	16,45[illegible]253	20,00,115

No.	SCHEDULE A.—IMPORTS. DESCRIPTION OF ARTICLES.	VALUE ON WHICH DUTY IS ASSESSED.	RATE OF DUTY.	TOTAL VALUE ON WHICH DUTY WAS ASSESSED IN EACH YEAR ENDING 31ST MARCH 1868.	1869.	AMOUNT OF DUTY COLLECTED IN EACH YEAR ENDING 31ST MARCH 1868.	1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
	LIQUORS—*continued.*						
	Spirits used exclusively in Arts and in Manufactures or in Chemistry	 0	...	109	48	11	5
	WINES—	t.					
	Champagnes, Sparkling Wines and Liqueurs	....lb.	1-8 per Impl. gal. or 6 Qt.	Rs. 35,66,665 and Gls. 1,63,117	Rs. 40,30,181 and Gls. 2,14,584	6,16,732	7,24,384
	All other sorts	.....	1-0 per ditto				
		2		Rs. 96,13,448 and Impl. gals. 7,05,475*	Rs. 1,05,79,715 and Impl. gals. 7,81,631*	23,58,109	28,21,213
		0	TOTAL OF LIQUORS ...				
35		0					
36	MARBLE, WROUGHT, OTHER THAN STATUARY	*Ad valorem* ...	7½ per cent....	56,780	57,563	4,242	4,317
37	MATS, FLOOR MATTING, CHINA, OF ALL SORTS	0 0 per 100 ...	7½ per cent....	47,503	1,22,665	3,564	8,960
	METALS, UNWROUGHT AND MANUFACTURES OF—						
	Brass Beads, Gogree, China ...	0 12 per 1,000 ...		1,10,732	10,735	8,352	805
	„ Old	35 0 per cwt. ...		19,560	8,157	1,467	611
	„ Sheets, rolls very thin ...	80 0 per cwt. ...	7½ per cent.	1,37,810	1,35,485	10,334	10,160
	Residue or Brass Leaves, Foreign—Europe ...	1 4 per lb. ...					
	„ China ...	0 12 „ ...					
			TOTAL OF BRASS, &c. ...	2,68,102	1,54,377	20,153	11,576
	Copper,						
	„ Australian... ...	48 0 per cwt. ...		29,989	3,13,036	2,249	23,478
	„ Bolt	50 0 „ ...					
	„ Braziers ... ing and Sheathing ...	50 0 „ ...		63,77,973	57,16,914	4,79,077	4,28,766
	„ Jabsheet, ...	50 0 „ ...					
	„ Nail Plate	30 0 „ ...		56,211	83,257	4,213	6,244
	„ Nina, Cash	48 0 „ ...		2,39,486	20,804	17,961	1,560
	„ Old van ... Composition						
	„ Pigs la and	45 0 „ ...		51,989	93,385	3,899	7,043
	„ Tubes a	40 0 „ ...		1,40,721	1,27,899	10,565	9,593
	„ Tiles, In Slabs, Foreign ...	45 0 „ ...	7½ per cent.	...	...	...	...
	Bricks alsd Pipes ...	...		66	...	5	...
	„ China, gots, Cakes and ware	47 0 „ ...		67,54,142	58,90,281	5,06,571	4,41,776
	„ Chinaware White Copper-	1 4 per lb. ...		35,780	36,616	2,684	2,749
	„ Foil Dare	...		7,179	5,798	541	485
	„ „ BRUCTI uk-pana, China	3 0 per book of 100 leaves.		...	5,965	...	447
	„ Europe ...	4 0 „ ...		...	...	...	...
	Copper,		TOTAL OF COPPER ...	1,36,93,536	1,22,93,955	10,27,765	9,22,091
	Iron Beams	*Ad valorem* ...		1,524	...	15	...
	„ Flat, Square and Bolt, including ...	85 0 per ton ...	1 per cent.	35,85,897	34,92,682	36,089	35,009
	„ Hoop, Plate ... Scotch ...	115 0 „ ...		20,35,806	26,73,251	20,483	26,752
	„ Nails	10 0 per cwt. ...					
	„ Rivets	11 0 „ ...	7½ per cent....	5,09,688	5,56,672	7,575	8,369
	„ Nail Rod	95 0 per ton ...		1,60,427	90,557	1,604	903
	„ Old	2 8 per cwt. ...		24,077	51,516	254	514
	„ Pig	40 0 per ton ...		81,998	1,36,120	819	1,361
	„ Rod, Round, half inch						
	„ Swedish, Rod, British under ... h diameter ...	110 0 „ ...	1 per cent.	1,83,808	1,09,024	1,838	1,090
	„ Angle and ... Flat and Square...	140 0 per ton ...		30,30,436	28,75,966	30,342	28,759
	„ Galvanized ... T Iron ...			17,578	1,30,619	176	1,306
	wire except of all sorts,			2,37,252	1,99,749	3,070	2,123
	„ Rice Bowls ... epted ...			2,74,054	2,46,298	20,555	18,477
	„ „ „	3 4 per set of 10					
	„ Other sorts	1 10 „ 6					
	cables ... T), except anchors,		7½ per cent.				
	which are ... and kentledge, ...	*Ad valorem* ...		20,42,314	23,68,887	1,42,520	1,65,220
	Free ...		TOTAL OF IRON ...	1,21,84,849	1,29,31,341	2,65,340	2,88,477

* Value not stated in local returns.

No.	SCHEDULE A.—IMPORTS. DESCRIPTION OF ARTICLES.	VALUE ON WHICH DUTY IS ASSESSED.	RATE OF DUTY.	TOTAL VALUE ON WHICH DUTY WAS ASSESSED IN EACH YEAR ENDING 31ST MARCH 1868.	1869.	AMOUNT OF DUTY COLLECTED IN EACH YEAR ENDING 31ST MARCH 1868.	1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
	METALS, UNWROUGHT, WROUGHT AND MANUFACTURES OF—*continued.*						
	Lametta, Double reels ...	4 8 per score ...	7½ per cent.	3,450	...	259	...
	„ Single reels ...	2 4 „ ...		3,570	...	268	...
			TOTAL OF LAMETTA ...	7,020	...	527	...
	Lead, Pig	10 0 per cwt. ...		84,158	2,61,139	6,375	19,586
	„ Pipes	13 8 „ ...		20,622	16,127	669	1,210
	„ „ tinned	16 0 „ ...		51,816	20,205	3,886	1,515
	„ Sheets (other than thin Sheets for Tea Canisters, which are free) ...	12 0 „ ...	7½ per cent.	53,208	79,659	4,021	5,97,168
	„ Other sorts	...		390	385	29	5
	„ Ore Galena	13 0 per cwt. ...		36,758	15,574	2,756	1,17,482
			TOTAL OF LEAD ...	2,46,352	3,93,089	17,736	29,929
	Mock Gold Leaf	5 0 per 20 books	7½ per cent....	14,327	12,279	1,074	8,35,870
	Patent or Yellow Metals, Sheathing and Sheets ...	42 0 per cwt. ...	7½ per cent.	45,70,085	44,78,659	3,42,267	1,802
	„ old ...	32 0 „ ...		38,210	24,018	2,866	3,37,672
			TOTAL OF PATENT OR YELLOW METALS ...	46,08,295	45,02,677	3,45,133	31,449
	Quicksilver	1 0 per lb. ...	7½ per cent....	2,23,820	4,19,330	16,791	5,228
	Shot, Bird	15 0 per cwt. ...	7½ per cent....	59,388	69,734	4,4558	825
	Spelter, Nails	17 8 „ ...		7,457	10,994	777	1,29,953
	„ Plate and other shapes ...	11 0 „ ...		18,85,319	17,32,634	5556	14,004
	„ Sheet or Zinc Sheathing	15 0 „ ...	7½ per cent.	1,41,227	1,86,720	1,40,751	15
	„ All other sorts ...	...		696	196	10 01,942	1,44,797
			TOTAL OF SPELTER ...	20,34,699	19,30,544	1,54	6,430
	Steel, blistered	9 0 per cwt. ...		720	85,737	167	
	„ British	9 0 „ ...		2,230		7,865	5,677
	„ Cast	25 0 „ ...		1,08,581	75,600	18,675	33,355
	„ Spring	10 0 „ ...	7½ per cent.	2,49,012	4,44,76.	434	125
	„ Swedish	10 0 „ ...					
	„ Other sorts	...		5,583	1,661	27,195	45,587
			TOTAL OF STEEL ...	3,66,126	6,07,864	58,841	82,376
	Tin, Block	45 0 per cwt. ...		7,82,901	11,01,732		
	„ Plates, large size, box not exceeding 170 lbs. and 100 plates and *pro rata* ...	24 0 „ ...				15,242	27,473
	„ Small size, not exceeding one cwt. and 225 plates and *pro rata* ...	14 0 „ ...	7½ per cent.	1,93,209	3,66,269	127	1,260
	„ Ware and other Manufactures of—	... ...		1,744	18,183	74,210	1,11,109
			TOTAL OF TIN ...	9,77,854	14,86,184	15,521	12,061
	Wire, Brass	0 8 per lb. ...		2,06,956	1,60,817	2,103	1,466
	„ Common Iron, Nos. 1 to 40	9 8 per cwt. ...		28,055	57,347	20	60
	„ Galvanized and not for Telegraphic purposes ...	...	7½ per cent.	266	2,793	916	2,435
	„ Copper	0 10 per lb. ...		12,011	32,452	18,560	16,022
			TOTAL OF WIRE ...	2,47,288	2,53,409		
	Other sorts, including Hardware, Ironmongery and Cutlery, but excluding Machinery, the component parts thereof, and Agricultural Implements which are free	*Ad valorem* ...	7½ per cent.	51,60,195	34,92,371	3,64,871	2,55,144
			TOTAL OF METALS OF ALL KINDS ...	4,00,92,451	3,85,47,154	23,35,751	22,03,492

No.	SCHEDULE A.—IMPORTS. DESCRIPTION OF ARTICLES.	VALUE ON WHICH DUTY IS ASSESSED.	RATE OF DUTY.	TOTAL VALUE ON WHICH DUTY WAS ASSESSED IN EACH YEAR ENDING 31ST MARCH 1868.	1869.	AMOUNT OF DUTY COLLECTED IN EACH YEAR ENDING 31ST MARCH 1868.	1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
38	NAVAL STORES—						
	Cables, Coir, tarred ...	10 0 per cwt. ...	7½ per cent.	...	...	...	...
	Canvas, Country, Cotton ...	50 0 „ ...	5 per cent.	6,06,425	9,90,439	30,629	49,895
	„ Europe, sail, not exceeding 40 yards ...	15 0 per bolt ...					
	Coir, Rope, Manila, tarred and Laccadive	10 0 per cwt. ...	7½ per cent.	5,239	86,244	435	6,507
	dive ... kinds ...	9 0 „ ...		73,102		5,520	
	„ Yarn of all sorts, Europe ...	18 0 „ ...		1,23,614	2,84,678	9,306	21,385
	Cordage, Hemp	20 0 „ ...		39,234	64,614	2,717	4,859
	„ Manilla	5 0 „ ...					
	Dammer „ and Europe ...	13 0 per barrel		25,630	59,781	1,933	4,488
	Pitch, American	4 8 not exceeding 3 cwt.					
	„ Coal	13 0					
	Tar, American	6 8 ditto ...		48,306	82,979	3,611	6,214
	„ Coal ... Archangel ...	14 0					
	„ Swedish and ... ail... ...	0 8 per lb.		24,597	82,945	1,845	6,281
	Twine, Europe ... except Oakum,						
	All other sorts ... ... which is free	*Ad valorem* ...		82,763	1,10,308	6,253	7,607
	TOTAL OF NAVAL STORES ...			10,28,910	17,61,988	62,249	1,07,236
39	OILS—						
	... ...	10 0 per lb. ...	7½ per cent.	...	2,137	...	160
	Cardamum	4 0 „ ...		24,918	533	1,868	40
	Cassia ... wn ...	4 8 per doz. pints		16,796	4,897	1,260	367
	Castor, cold dra on ...	10 0 per lb. ...		...	...	...	...
	Cocnnamon, Ceyl	20 0 per cwt. ...		1,65,465	47,146	12,423	3,555
	Earseanut	10 0 „ ...		...	4,072	...	305
	Grassh	2 0 per lb. ...		16	174	1	13
	Jingel	20 0 per cwt. ...		1,521	429	114	32
	Kerosene or Teel y	1 12 per Impl. gal.		2,66,559	3,26,387	19,991	24,479
	Linseed ne	18 0 per cwt. ...		1,25,736	1,29,703	9,438	9,726
	„ Countr	2 4 per Impl. gal.					
	Naptha Europe	30 0 per cwt. ...		1,558	7,578	117	569
	Otto of se	20 0 per ounce ...		1,005	160	75	12
	Sandalwood orts	8 0 per lb. ...		260	...	19	...
	Sorrel ... d	20 0 per cwt. ...		...	...	...	...
	Turpentine	2 0 per Impl. gal.		68,891	55,925	5,166	4,193
	Whale and ... (Slabs... ...	15 0 per cwt. ...		5,324	6,312	399	475
	Wood ... ... d Pir	15 „ ...		...	160	...	12
	All other sorts, ... otsexcept Cocum and Slush Fat, w ... ich are free	*Ad valorem* ...		1,14,641	65,418	8,664	4,926
	... b						
	...						
	TOTAL OF OILS ...			7,92,690	6,51,031	59,535	48,864
40	OIL AND FLOOR CLO TH	*Ad valorem* ...	5 per cent. ...	39,383	58,138	1,984	2,916
41	PAINTS, COLORS AND PAINTER'S MATERIALS—						
	s	3 0 per cwt. ...	7½ per cent.	41,586	51,080	3,123	3,830
	Ochre, all Color	12 0 „ ...		1,55,791	1,65,781	11,730	12,372
	Paints of sorts ... China ...	0 8 per lb. ...		12,223	10,136	917	766
	Prussian, Blue, ... Europe ...	1 8 „ ...		18,020	14,092	1,351	1,057
	Red Lead „	14 0 per cwt ...		3,78,195	3,65,408	28,365	27,404
	Turpentine	2 0 per Impl. gal.		47,727	42,052	3,580	3,163
	Vermillion, Can ton... ...	85 0 per box of 90		2,65,257	3,52,610	19,890	26,445
	„ Mac do	30 0 bundles...		67	167	5	13
	White Lead	12 0 per cwt. ...		1,43,389	1,76,403	10,755	13,231
	All other sorts, i ... ncluding Brushes	*Ad valorem* ...		5,97,390	4,18,231	44,829	31,426
	...						
	...						
	T... OTAL OF PAINTS, COLORS AND PAINTER'S MATERIALS ...			16,59,645	15,95,960	1,24,545	1,19,691
42	PERFUMERY— Bri						
	Atary, Persian am	15 0 per cwt. ...	7½ per cent....	8,425	1,843	631	139
	Rose flowers, dri ored	10 0 „ ...		12,254	7,920	917	594
	Rose water	1 12 per Impl. gal.		59,141	46,684	4,434	3,504
	All other sorts	*Ad valorem* ...		2,90,142	2,60,331	21,773	19,594
	ep						
	TOTAL OF PERFUMERY ...			3,69,962	3,16,778	27,755	23,769
43	PHOTOGRAPHIC APPAR ATUS AND MATERIALS	*Ad valorem* ...	7½ per cent....	52,634	68,367	3,948	5,129
44	PIECE GOODS NOT O THERWISE DESCRIBED	*Ad valorem* ...	5 per cent. ...	42	5,22,328	2	26,116
45	PORCELAIN AND EART HEN-WARE ...	*Ad valorem* ...	7½ per cent....	7,13,453	7,93,806	53,123	59,486

No.	SCHEDULE A.—IMPORTS. DESCRIPTION OF ARTICLES.	VALUE ON WHICH DUTY IS ASSESSED.	RATE OF DUTY.	TOTAL VALUE ON WHICH DUTY WAS ASSESSED IN EACH YEAR ENDING 31ST MARCH 1868.	1869.	AMOUNT OF DUTY COLLECTED IN EACH YEAR ENDING 31ST MARCH 1868.	1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
46	PROVISIONS AND OILMAN'S STORES—						
	Bacon in Canisters, Jowls and Cheeks	0 9 per lb. ...	...	2,71,536	2,43,224	20,539	18,467
	Hams	0 8 „ ...					
	0	60 0 per tierce of 3 cwts.					
	eef	40 0 per brl. of 2 cwts.		1,30,161	2,11,653	9,571	15,920
	(						
	0	50 0 per tierce of 3 cwts.					
	Pork	34 0 per brl. of 2 cwts.					
				2,39,042	2,49,444	17,969	18,731
	Cheese	0 10 per lb. ...		24,826	10,635	1,862	570
	Chocolate	0 8 „ ...					
	Cocoa, prepared	0 8 „ ...		31,319	1,96,479	2,351	14,451
	Fish Maws	50 0 per cwt. ...					
	„ Sozille and Singally, small	6 0 „ ...					
	Flour	25 0 per brl. or sack of 200 lbs.		1,96,572	1,69,854	14,772	13,017
	Ghee	36 0 per cwt. ...	7½ per cent.	2,30,938	2,20,0.3	17,319	16,500
	Sago	7 0 „ ...		66,044	23,518	4,955	1,786
	Shark Fins	20 0 „ ...		95,757	...	7,189	...
	Tongues, salted	10 0 per keg. of six		...	... 70	...	5
	Vinegar in bottles or in wood, Europe	1 8 per Impl. gal.					
	Vinegar in bottles or in wood, Persian	0 12 „ ...		58,6	39,454	4,406	2,994
	Vinegar in bottles or in wood, Country	0 6 „ ...					
	All other sorts except Biche-de-mer, butter and salted fish, which are free	*Ad valorem* ...		21,87,230	17,92,955	1,63,917	1,34,501
	TOTAL OF PROVISIONS AND OILMAN'S STORES ...			35,32,121	31,57,599	2,64,850	2,36,942
47	RAILWAY MATERIALS—						
	Of Iron	*Ad valorem* ...	1 per cent. ...	2,45,53,162	1,56,27,873	5,12,875	2,97,302
	Other sorts	*Ad valorem* ...	7½ per cent....				
48	RATANS AND CANES—						
	Canes, Malacca	1 0 per dozen ...	7½ per cent....	1,517	2,331	114	188
	Ratans	7 0 per cwt. ...		67,147	91,073	5,043	6,864
	All other sorts	*Ad valorem* ...		37,437	26,792	2,849	2,012
	TOTAL OF RATANS AND CANES ...			1,06,101	1,20,196	8,006	9,064
49	SEEDS—						
	Anchuckuck	10 0 per cwt. ...	7½ per cent.	...	1,887	...	141
	Anise, Europe	28 0 „ ...		...	...	108	...
	Assalia	7 0 „ ...		1,439	...	2,458	...
	Cajoo	3 0 „ ...		82,774	...	7	133
	Castor	4 8 „ ...		101	1,772	5,045	3,787
	Cummin	12 0 „ ...		67,265	50,500	...	...
	„ Black	5 0 „ ...		...	...	...	...
	Esubgool	5 0 „ ...		...	...	...	...
	Linseed	5 0 „ ...		...	...	...	...
	Methee	5 0 „ ...		...	...	...	...
	Mustard	4 8 „ ...		...	...	...	...
	Quince Seed or Badana ...	50 0 „ ...		13,743	8,245	1,030	618
	Rape or Sursee	4 8 „ ...		27,687	5,954	2,077	128
	Sawjeerah	25 0 „ ...		3,969	65,380	297	4,904
	Tookmeria	7 0 „ ...		...	...	...	...
	All other sorts, excepting seeds imported by any Public Society for gratuitous distribution, which are free ...	*Ad valorem* ...		80,109	1,06,651	5,983	8,046
	TOTAL OF SEEDS ...			2,27,087	2,40,389	17,005	17,757
50	SHAWLS	*Ad valorem* ...	5 per cent....	8,494	25,753	425	1,287

No.	SCHEDULE A.—IMPORTS. DESCRIPTION OF ARTICLES.	Value on which Duty is assessed.	Rate of Duty.	Total Value on which Duty was assessed in each year ending 31st March 1868.	1869.	Amount of Duty collected in each year ending 31st March 1868.	1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
51	SHELLS—						
	Chanks, "large shells" for Cam... eos	10 0 per hundred	7½ per cent.	11,791	83,953	884	6,297
	„ White, live ed-...	6 0 „					
	„ „ dead	3 0 „					
	Cowdas, Mozambique and Zanzibar ca-...	3 0 „		...	204	...	14
	„ from other places	0 8 „		...		...	
	Cowries—						
	Bizar, common	4 0 per cwt.		39,343	73,408	2,954	5,559
	Maldive	16 0 „		12,732		955	
	Sunkley	40 0 „		3,490		262	
	Yellow, superior quality	8 0 „		7,435		557	
	Mother o'Pearl	8 0 „		22,414	22,413	1,681	1,680
	Tortoise Shell	6 0 per lb.		18,190	24,239	1,359	1,817
	„ Nuck	1 0 „		...	...	...	...
	Nuckla, and other sorts m ...	*Ad valorem*		13,310	14,119	998	1,059
		TOTAL OF SHELLS ...		1,28,705	2,18,336	9,650	16,426
52	SILK—						
	Floss	8 0 per lb.	7½ per cent.	1,799	2,375	134	177
	Raw, Charon and Cochin Ch...ina	4 0 „		2,888	3,82,456	216	24,964
	„ Mathow ...	1 12 „		16,858	62,750	1,264	4,706
	„ other kinds of China ...	7 0 „		36,49,250	45,15,129	2,73,693	3,40,884
	„ Persian	5 0 „		84,130	1,02,165	6,309	7,659
	„ Punjum and Catchan ...	1 12 „		15,55,236	18,84,787	1,17,522	1,41,359
	„ Siam ...	4 0 „		3,45,628	3,71,568	25,922	27,808
	Sewing thread, China ...	8 0 „		8,145	6,164	611	462
	Other sorts	*Ad valorem*		6,476	2,636	485	198
	Silk Piece Goods of sorts ...	*Ad valorem* ...	5 per cent. ...	44,22,149	48,89,765	2,20,386	2,42,530
		TOTAL OF SILK GOODS OF ALL KINDS		1,00,92,559	1,22,49,795	6,46,542	7,90,807
53	SOAP	*Ad valorem* ...	7½ per cent....	3,50,879	1,91,185	26,318	14,340
54	SPICES—						
	Aloe Wood ...	3 0 per lb.	7½ per cent.	5,932	6,923	443	519
	Aniseed Star ...	40 0 per cwt.					
	Betelnut, white, Sheverdhun ...	18 0 „		23,34,593	16,14,211	1,75,045	1,20,754
	„ all other kinds ...	7 0 „					
	„ in husk ...	2 0 per 1,000		35,242	35,640	2,644	2,673
	Cassia Buds, Nagkessur, Chin...a	0 8 per lb.		3,768	624	282	47
	Chillies, dried ...	8 0 per cwt.		7,18,128	4,55,092	53,865	34,135
	Cloves	12 0 „					
	„ in Seeds, Nurlavung ...	8 0 „		78,609	32,745	5,939	2,456
	Mace	0 9 per lb.		1,76,890	1,12,346	13,302	8,224
	„ false ...	10 0 per cwt.		3,628	...	272	...
	Nutmegs ...	0 10 per lb.		...	...	...	...
	„ in shell ...	0 6 „		8,53,524	6,70,551	64,018	50,392
	„ wild ...	12 0 per cwt.		2,62,016	11,844	19,650	814
	Pepper, Black and Long ...	15 0 „					
	„ White ...	25 0 „					
	All other kinds ...	*Ad valorem*					
		TOTAL OF SPICES		44,72,330	29,39,376	3,35,160	2,20,014
55	STATIONERY OTHER THAN PAPER	*Ad valorem*	7½ per cent.	3,59,326	4,68,325	27,083	35,034
56	SUGAR AND SUGAR-CANDY—						
	Sugar-candy, China ...	20 0 per cwt.	7½ per cent.	53,05,642	64,83,625	3,97,925	4,85,889
	„ Loaf ...	23 0 „					
	„ Soft ...	12 0 „					
	All other sorts of saccharine produce ...	*Ad valorem*		35,422	14,364	2,657	1,075
		TOTAL OF SUGAR, &c. ...		53,41,064	64,97,989	4,00,582	4,86,964
57	TALLOW AND GREASE ...	20 0 per cwt. ...	7½ per cent.	1,03,503	43,566	7,761	3,276
48	TEA	1 0 per lb. ...	7½ per cent.	26,34,855	20,42,909	1,97,822	1,53,205
59	TELEGRAPH STORES—						
	Of Iron ...	*Ad valorem* ...	1 per cent.	2,07,477	16,723	8,242	1,135
	Other sorts ...	*Ad valorem* ...	7½ per cent.				

No.	SCHEDULE A.—IMPORTS. DESCRIPTION OF ARTICLES.	Value on which Duty is assessed.	Rate of Duty.	Total Value on which Duty was assessed in each year ending 31st March 1868.	1869.	Amount of Duty collected in each year ending 31st March 1868.	1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
60	TIMBER AND WOODS—						
	Deal or Pine Planks and Boards, superficial square foot of one inch thickness	55 0 per 1,000 feet	7½ per cent.	78,345	56,321	6,014	4,224
	Mahogany in logs	0 6 per supl. foot of one inch thickness.		130		11	...
	„ Australian ...	60 0 per ton ...		7,048	200	529	15
	Sandal Wood	22 0 per cwt. ...		12,981	467	973	35
	„ Australian and Bastard ...	4 0 „ ...					
	All other sorts, excepting Ebony, Lignum Vitæ, Tuggur wood and Palmyra wood, which are free ..	*Ad valorem* ...		3,26,219	31,277	24,465	2,345
	Manufactures of, including also Pipes, Staves and Casks ...	*Ad valorem* ...		45,709	91,554	3,533	6,959
		TOTAL OF TIMBER AND WOODS ...		4,70,432	1,79,819	35,525	13,578
61	TOBACCO—						
	Manufactured	*Ad valorem* ...	10 per cent.	8,50,879	9,02,700	77,140	88,709
	Unmanufactured	*Ad valorem* ...					
	Articles such as pipes, &c., used in the consumption of ...	*Ad valorem* ...	7½ per cent.	52,580	98,857	4,249	7,449
		TOTAL OF TOBACCO, &c.		9,03,459	10,01,557	81,389	96,158
62	TOYS AND REQUISITES FOR ALL GAMES	*Ad valorem* ...	7½ per cent.	3,97,999	4,09,774	29,893	30,648
63	TRUNKS AND BOXES ...	*Ad valorem* ...	7½ per cent.	8,602	...	646	...
64	UMBRELLAS—						
	Cotton, Steel Ribs	0 13 each ...	7½ per cent.	12,57,251	11,04,718	94,555	86,615
	„ Cane „	0 11 „ ...					
	„ China Paper kettisals ...	45 0 per box of 110.					
	All other sorts ...	*Ad valorem* ...					
65	WOOLLEN GOODS—						
	Piece Goods ...	*Ad valorem* ...	5 per cent.	47,68,093	55,05,714	2,34,441	2,72,450
	Braid ...	*Ad valorem* ...	7½ per cent.	3,79,110	2,28,576	28,431	17,146
	Other sorts ...			10,27,122	13,95,905	55,649	69,468
		TOTAL OF WOOLLEN GOODS ...		61,74,325	71,30,195	3,18,521	3,59,064
	ALL OTHER ARTICLES WHICH CANNOT BE INCLUDED UNDER ANY OF THE ABOVE HEADS, AND WHICH HAVE BEEN CHARGED WITH DUTY, BEING UNMANIFESTED	.. ...		3,31,871	6,29,710	30,429	47,834
		GRAND TOTAL ...		Rs. 31,56,48,673 and Im. gals. 7,05,475*	Rs. 35,96,89,309 and Im. gals. 7,81,631*	1,81,95,634	1,89,66,545

SHARE OF EACH PRESIDENCY OR PROVINCE IN THE ABOVE GRAND TOTALS.

	Rs.	Rs.	Rs.	Rs.
BENGAL	15,67,42,808	15,34,96,411	85,99,846	87,47,478
BOMBAY	11,78,56,666 (and Im. gals. 7,05,475)	12,11,24,713 (and Im. gals. 7,81,631)	72,51,547	75,66,490
SIND	59,79,423	58,57,170	3,02,843	3,26,625
MADRAS	2,64,45,463	2,75,84,432	14,60,982	15,87,606
BRITISH BURMAH	86,24,313	1,16,26,583	5,80,416	7,38,346
TOTAL	Rs. 31,56,48,673 (and Im. gals. 7,05,475)	Rs. 35,96,89,309 (and Im. gals. 7,81,631)	1,81,95,634	1,89,66,545

* Value not stated in local returns.

SCHEDULE B.—EXPORTS.

No.	DESCRIPTION OF ARTICLES.	VALUE ON WHICH DUTY IS ASSESSED.	RATE OF DUTY.	TOTAL VALUE ON WHICH DUTY WAS ASSESSED IN EACH YEAR ENDING 31st MARCH		AMOUNT OF DUTY COLLECTED IN EACH YEAR ENDING 31st MARCH	
				1868.	1869.	1868.	1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
1	INDIGO	... .	3 Rs. per Md.	1,82,09,497 and In. Mds. 960	2,87,20,386 and In. Mds. 2,337	3,47,640	4,07,185
2	GRAIN OF ALL SORTS ...	... .	3 As. per Md.	3,95,98,431 and In. Mds. 4,96,345	4,50,96,921 and In. Mds. 8,11,277	36,40,818	43,23,827
3	LAC—						
	Button	... 28 0 per cwt. ...	4 per cent.	131	2,42,415	5	9,697
	Dye	... 45 0 „ ...		6,35,193	8,06,093	25,408	32,242
	Seed	... 20 0 „ ...		60	43	2	2
	Shell	... 28 0 „ ...		12,23,653	11,09,899	48,941	44,398
	Stick	... 16 0 „ ...		22,240	65,604	888	2,623
	Other sorts ...	... *Ad valorem* ...		11,798	3,580	471	143
		TOTAL OF LAC OF ALL KINDS ...		18,93,075	22,27,634	75,715	89,105
4	OILS—						
	Castor	... 16 0 per cwt. ...	3 per cent.	7,78,719	11,81,637	23,362	35,448
	Cocoanut ... ...chin Ch	... 20 0 „ ...		8,38,565	20,94,518	25,155	62,833
	Fish	... 15 0 „ ...		3,549	8,549	107	257
	Grass	... 2 0 per lb. ...		71,375	89,639	2,140	2,688
	Gingelly or Teel ...ina	... 20 0 per cwt. ...		1,96,665	3,21,940	5,898	9,656
	Linseed	... 18 0 „ ...		94	465	3	13
	Mhowa ... ...hra	12 0 ...		...	...	...	...
	Mustard ...	16 0 „ ...		...	...	...	75
	Poppy	20 0 „ ...		...	...	...	...
	Rape or Sursee ...	16 0 „ ...		66,293	1,05,853	1,989	3,176
	Sandal Wood ...	8 0 per lb. ...		5,109	16,464	152	491
	Other sorts ...	*Ad valorem* ...		58,264	82,279	1,848	2,469
		TOTAL OF OILS ...		20,41,953	39,25,708	61,354	1,17,761
5	SEEDS—						
	Castor Seed (Arundee) ...	4 8 per cwt. ...	3 per cent.	83,900	54,133	2,517	1,624
	Coriander Seed ...	4 0 „ ...		87,077	1,21,835	2,612	3,655
	Cummin Seed ...	12 0 „ ...		39,925	75,408	1,199	2,260
	„ Black (Calcejeera)	5 0 „ ...		...	...	...	...
	Ground Nuts with Shell	5 0 „ ...		138	...	4	...
	„ „ without Shell	6 0 „ ...		...	...	...	...
	Gingelly or Teel Seed	6 0 „ ...		40,67,311	49,73,849	1,22,020	1,49,215
	Linseed ...	5 0 „ ...		1,24,59,072	1,42,19,010	3,73,858	4,26,575
	Meethee Seed ...	5 0 „ ...		11,461	1,01,201	343	3,037
	Mustard Seed ...	4 8 „ ...		50,676	33,624	1,536	1,010
	Poppy Seed ...	5 8 „ ...		7,88,695	2,25,964	23,661	6,880
	Rape or Sursee Seed	4 8 „ ...		40,91,067	13,10,105	1,22,730	39,305
	Other sorts ...	*Ad valorem* ...		6,94,718	10,67,395	20,847	32,028
		TOTAL OF SEEDS ...		2,23,74,040	2,21,82,524	6,71,327	6,65,589
6	SHAWLS—	*Ad valorem* ...	3 per cent...	25,96,533	29,33,686	77,899	88,016
7	COTTON GOODS—						
	Piece Goods—						
	Buftahs ...	.. 30 0 per score ...	3 per cent.	38,75,113	42,49,033	1,16,266	1,27,469
	Gurrah	.. 20 0 „ ...					
	Khurwa ...	.. 25 0 „ ...					
	Mmoodee ...	.. 32 0 „ ...					
	Mirzapore Chintz ...	.. 15 0 „ ...					
	Patna	.. 30 0 „ ...					
	Shans ...	.. 40 0 „ ...					
	Tunjeeb, Oude ...	.. 26 0 „ ...					
	Other sorts ...	.. *Ad valorem* ...					
	Twist, Country, No. 10	.. 0 7 per lb. ...		12,58,930	7,29,055	37,769	21,873
	„ „ „ 20	.. 0 9 „ ...					
	„ „ „ 30	.. 0 10 „ ...					
	„ Handspun ...	.. 0 5 „ ...					
	All other kinds of Cotton Goods	.. *Ad valorem* ...		71,742	1,14,332	2,159	3,431
		TAL OF COTTON GOODS OF ALL KINDS ...		52,05,785	50,92,420	1,56,194	1,52,773

SCHEDULE B.—EXPORTS.

No.	DESCRIPTION OF ARTICLES.	VALUE ON WHICH DUTY IS ASSESSED.	RATE OF DUTY.	TOTAL VALUE ON WHICH DUTY WAS ASSESSED IN EACH YEAR ENDING 31st MARCH		AMOUNT OF DUTY COLLECTED IN EACH YEAR ENDING 31st MARCH	
				1868.	1869.	1868.	1869.
		Rs. A.		Rs.	Rs.	Rs.	Rs.
8	HIDES AND SKINS—TANNED—						
	Hides—						
	Buffalo, Country, Tanned ...	70 0 per score ...	3 per cent.	3,29,406	2,04,297	9,853	6,128
	Cow, ditto	50 0 „ ...					
	Skins—						
	Goat and Sheep	10 0 „ ...		21,56,530	24,31,588	64,696	72,938
	Lamb	5 0 „ ...					
	Any other sorts of Hides and Skins	*Ad valorem* ...		58,956	98,050	1,768	2,941
		TOTAL OF HIDES AND SKINS ...		25,44,892	27,33,935	76,317	82,007
9	SPICES—						
	Aloe Wood	3 0 per lb. ...	3 per cent.	...	1,728	...	52
	Betelnut in husk	2 0 per 1,000 ...		1,66,073	1,91,740	4,982	5,752
	Cardamums	200 0 per cwt. ...		92,013	1,97,782	2,760	5,932
	„ large bastard ...	40 0 „ ...		77	1,175	2	35
	Chillies, dried	8 0 „ ...		1,92,079	1,68,106	5,764	5,043
	Ginger dry (rough) Malabar ...	10 0 „ ...		2,90,238	2,77,562	8,706	8,327
	„ „ Bengal ...	7 0 „ ...		39,609	35,271	1,188	1,059
	„ (scraped) ...	15 0 „ ...		4,54,238	4,15,644	13,624	12,468
	Pepper	15 0 „ ...		3,95,614	5,65,745	11,872	16,972
	Turmeric	7 0 „ ...		1,59,864	2,95,620	4,791	8,873
	All other sorts	*Ad valorem* ...					
		TOTAL OF SPICES ...		17,89,805	21,50,373	53,689	64,513
	ALL OTHER ARTICLES	....		27,118	3,37,292	1,794	17,195
		GRAND TOTAL ...		Rs. 9,62,81,129 and In. Mds. 4,97,305*	Rs. 11,54,00,879 and In. Mds. 8,13,614*	51,62,747	60,07,971

SHARE OF EACH PRESIDENCY OR PROVINCE IN THE ABOVE GRAND TOTALS.

	Rs.	Rs.	Rs.	Rs.
BENGAL	5,36,34,701	6,03,26,140	24,55,742	23,56,937
BOMBAY	3,60,54,400 (and In. Mds. 4,97,305)	71,68,382 (and In. Mds. 8,13,614)	2,77,526	3,74,319
SIND	84,77,143	39,69,534	1,72,478	1,86,792
MADRAS	2,04,98,454	2,19,96,790	8,47,293	9,97,564
BRITISH BURMAH	1,26,16,431	1,89,40,033	14,09,708	20,92,359
TOTAL	9,62,81,129 (and In. Mds. 4,97,305)	11,54,00,879 (and In. Mds. 8,13,614)	51,62,747	60,07,971

* Value not stated in local returns.

STATISTICAL BRANCH,
FINANCIAL DEPARTMENT:
Fort William, 26th March 1870.

R. B. CHAPMAN,
Offg. Secy. to the Govt. of India.

GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 25th March 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding.*

Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble Gordon S. Forbes.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey, C. S. I.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
The Hon'ble F. R. Cockerell.

PAPER CURRENCY BILL.

The Hon'ble SIR RICHARD TEMPLE, in moving for leave to introduce a Bill for the further amendment of Act No. XIX of 1861, said—

"The point of amendment will be found on reference to section X of the said Act, which runs thus—

'The whole amount of the bullion and coin so received for notes shall be retained and secured to pay such notes, with the exception of such an amount not exceeding four crores of rupees such as the Governor General in Council shall fix. The amount so fixed shall be invested in Government Securities.'

"The limit of investment then is fixed by law at four crores of rupees, or four millions sterling. We now propose to increase that limit to six crores or six millions. Before explaining the grounds of this proposal, I should state that it has received the express sanction and approval of the Secretary of State.

"In order to make the above grounds clear, I must ask the Council to revert to the principles on which our Paper Currency was established. These principles will be seen from the following extracts.

"In March 1860, the Secretary of State, addressing the Government of India, wrote:—

'The sound principle for regulating the issue of a paper circulation is that which was enforced on the Bank of England by the Act of 1844, *i. e.*, that the amount of notes issued on Government Securities should be maintained at a fixed sum, within the limit of the smallest amount which experience has proved to be necessary for the monetary transactions of the country; and that any further amount of notes should be issued on coin or bullion, and should vary with the amount of the reserve of specie in the Bank, according to the wants and demands of the public.

'The important condition is thus realised, that the mixed currency of notes and coin should vary in quantity exactly as if it were wholly of coin.

'In this country the smallest amount of notes required had been ascertained by long experience; but what that quantity may be in India, can only be ascertained in like manner; and as it is impossible, at present to say what the minimum amount of notes in India will be, the proceedings for determining this point must necessarily be tentative and experimental.'

* * * * * * * * *

'As the circulation of notes is extended beyond the immediate neighbourhood of Calcutta (and the advantages to be derived from the system will be very incomplete until this is done), a much larger amount of notes will be required; and under those circumstances, the limit of the fixed amount may be raised. But as this should only be done after full experience of the working of the system, I think it better that any change should be made, either by legislative enactment at the time, or by an order of Government, with the sanction of the Secretary of State in Council, to be published in the Gazette, power for doing this being contained in the Act which may be passed on the subject.'

"Subsequently, in 1861, the following year, the Secretary of State addressed the Government of India further as follows—

'4. The principle now adopted is that on which the currency of this country is based, namely, that a fixed amount of notes should be issued on Government security, and any amount beyond that should be issued on bullion or coin. The result will necessarily be, not that the quantity of paper in circulation is identical with the quantity of coin which would otherwise exist in the country, but that the variation in the quantity of paper and coin together corresponds with the variation which must have taken place if the circulation had been altogether of coin.'

"Next, inasmuch as my predecessor, Mr. Laing, took special interest in the existing system of our Paper Currency,—indeed, it was under his auspices that the present law was framed—it is important to see what he recorded at the time. In 1861 he wrote thus:—

'This majority has, however, been divided into two sections, one who hold that, to the condition of convertibility must be added that of absolute identity with the metallic circulation which it displaces; and that these two conditions can only be secured by making all Paper-issues the representatives of actual coin or bullion in the vaults of the Bank or Treasury, beyond a certain fixed issue, strictly limited within the bounds to which experience has shown that no conceivable contraction of the currency can approach.'

* * * * * * * * *

'I assume, therefore, that, in accordance with the opinion intimated by Sir C. Wood, the first consideration, in introducing a system of Paper Currency in India, must be to place its convertibility beyond question.

'For this purpose, I know of no other means than to adopt the principles of the English currency-laws, limiting the amount of fixed *minimum* issue for India to a figure which experience may show to be clearly within the mark to which the Paper circulation can be reduced under any conceivable circumstances.

'The present authorized issues of the three Chartered Banks of India are £5,000,000, *viz.*—

Bank of Bengal	... ...	£ 2,000,000
„ Bombay	... ...	„ 2,000,000
„ Madras	... ...	„ 1,000,000

* The actual issues are—

Bengal	£	1,964,000
Bombay	„	1,087,000
Madras	„	266,000
TOTAL ...	£	3,317,000

'Against which, by the charters, one-third in specie, leaving £3,750,000 as the amount issued against securities*; and the lowest of the issues were ever reduced during the month, informed, about £2,000,000.†

† The lowest issue of Bank of Bengal was £1,030,000.

'I think it would be unsafe, with our present information, to assume a much larger than that of the present authorized Bank-circulation as the *minimum* limit which it prudent to issue, against anything but actual coin or bullion; and even this limit should be approached gradually and with due caution. No doubt this limit may be extended in course of time, as the Paper-circulation becomes generally adopted; but it will be possible to amend the Act, and India has a right to know that the limit which has been fixed upon as safe under existing circumstances, shall not be exceeded on merely speculative grounds, or without a formal application to the Legislative Council for a fresh Act, giving time for reflection and opportunity for discussion.'

"Such then being the principles on which the present law was framed, I have to explain why the limit which it imposed, of four crores for the investments, ought to be extended to six, in accordance with those principles, it having been acknowledged, at the time, that the original limit was only experimental and might thereafter be raised according as circumstances might warrant.

"I have shown that the prescribed and established basis of our Paper Currency in India is this,—that the lowest amount be estimated to which, according to all reasonable experience, the Paper Currency might be expected to fall; that a portion of the money paid in exchange for the notes be invested in Government Securities up to the above amount, and that all notes above that amount must be issued against cash and bullion alone. The question, therefore, now would be this,—what, under the circumstances of the currency, is the lowest amount to which our circulation could reasonably be expected to fall? Then, given that amount, are we not justified in investing up to that limit?

"The four millions limit set forth in Act XIX of 1861 was necessarily assumed on the data of the known circulation of the three Presidency Banks in previous periods (the right of issuing currency-notes was transferred from 1st March 1862 from these Banks to the State). It was considered, in the circumstances of that day, that the circulation could not be reasonably expected to fall below four millions.

"Now, since 1861, what has been the circulation of the Government Paper Currency? I give the amounts of average circulation year by year in millions and fractions of millions:—

	Millions. £
1862-63 ...	4·42
1863-64 ...	5·23
1864-65 ...	6·88
1865-66 ...	7·73
1866-67 ...	8·99
1867-68 ...	9·29
1868-69 ...	10·14
1869-70 to date	10·53

"For the current official year 1869-70, the amounts have been—

	Rs.
7th April ...	9,74,25,840
„ May ...	9,83,86,380
„ June ...	10,72,97,130
„ July ...	10,72,53,300
„ August ...	10,44,63,350
„ September ...	10,07,65,210
„ October ...	10,39,10,050
„ November ...	10,97,12,500
„ December ...	11,33,83,900

"In round numbers our circulation has touched $11\frac{1}{3}$ millions. It has risen from $3\frac{2}{3}$ millions in March 1862 to $11\frac{1}{3}$ at the end of December 1869; in other words, it has increased by $7\frac{2}{3}$ millions in eight years. And though there have been, as fluctuations, still, on the whole, the increase has been steady and in order to revert to the prin the same period, of course, the public revenue, the private principles will be nternal traffic, the external commerce, the monetary transactions

"In March try have proportionally increased. In fact, the increase of the India, wrote:—ation is only an index or consequence of the increase in all these

'The sound cts. When we remember that since the Paper Currency was set in enforced on the e external traffic of the country has increased by some forty millions issued on Gov of annual value; that an internal traffic by rail of six millions of tons the smallest a has arisen; that the public revenue and the public expenditure have of the count increased each by ten millions; that some fifty millions sterling of British capital have been expended in India; that the banking-business of the country has increased beyond calculation,—we see that the development of the Paper Currency has only kept pace with the general improvement of the country.

"Against a circulation of upwards of eleven millions, we have a reserve in Government Securities of four millions, and a reserve in cash and bullion of more than seven millions. According to the experience of other countries possessing a Paper Currency, I should say that, in India, the reserve in Government Securities bears a somewhat unduly small proportion to the reserve in

cash and bullion. In other words, the Government in this country is hardly deriving from its Paper Currency the full advantage to which it is entitled.

"Under these circumstances, what is the lowest amount to which our circulation could reasonably be expected to fall? It might readily be expected to decrease under certain contingencies by two or even three millions; say it might possibly decline to eight millions. But it is difficult to anticipate its declining to five or even to six millions. This would represent a fall of fifty per cent. There has never been an instance of any such fall since we have had a Paper Currency. And this, too, notwithstanding that we have passed through political convulsions. For instance, in the period of the mutiny and rebellion of 1857, the annual average of the circulation of Bank of Bengal notes was £1,524,000, against £1,471,000 in 1856; £1,443,000 in 1858; £1,400,000 in 1855; and £1,717,000 to £1,825,000 during May to August 1867; *i. e.*, it was highest in the worst months of the mutiny. After the fall of Delhi in September 1857, the circulation declined owing to a depression of trade, and it continued depressed up to February 1858, and fell again in June 1858.

"The statistics of the Currency Note circulation are still more encouraging, the fluctuations in any year having been generally within the amount of increase of that twelve-month over the previous year, as may be seen from the Statement which I shall now read. The figures represent millions and fractions of millions.

Currency Note Circulation.

	At the end of the first month of the year.	During the Year.	At the end of the last month of the year.	Monthly average for the year.
	£		£	£
1862-63	4·10	Progressive	5·13	4·42
1863-64	5·01	Stationary till 31st October, when it was... £ 5·63 29th February 1864 ... ... „ 5·08	5·08	5·23
1864-65	6·04	Progressive	7·48	6·88
1865-66	7·46	Progressive till 30th September, when it was ... ... £ 7·84 28th February 1866 ... ... „ 6·87	7·02	7·73
1866-67	7·87	Progressive to 30th November, when it was ... ... £ 10·09 31st March 1867 ... ... „ 8·09	8·09	8·99
1867-68	7·84	Progressive till 31st December, when it was ... ... £ 10·32 31st March 1868 ... ... „ 9·07	9·07	9·29
1868-69	8·92	Progressive till 31st October, when it was £ 10·61 31st January 1869 ... ... „ 10·20 28th February „ ... ... „ 10·63	9·96	10·14
1869-70 to date.	9·80	Progressive till 30th June, when it was ... £ 10·80 30th September 1869 ... ... „ 10·18 31st October 1869 ... ... „ 10·76	31st Dec. 11·31	1·53

"It is seen that, in 1866-67, there was a sudden fall of two millions' but it was the mere collapse after a casual inflation, the amount to which the circulation fell up to 30th April 1867 being still four-fifths of a million in excess of the circulation on 30th April 1866.

"In 1865-66, a fall of one million after the 30th September of that year did indeed reduce the circulation to an amount less by £600,000 than that of 30th April 1865, but coincidently with this fall, the following amounts of silver-bullion were lying in the Currency Department, *viz.*—

(Millions and fractions of millions.)

	£
On 30th September 1865	1·26
„ 31st October „	1·26
„ 30th November „	·96
„ 31st December „	1·56
„ 31st January 1866	1·12
„ 28th February „	1·08
„ 31st March „	1·01
„ 30th April „	·35

"The pressure on the occasion above alluded to occurred in December of 1865, in the Christmas season. But probably it would not have been felt had the bullion been available as coin.

"Moreover, the circulation of 31st December 1869 exceeds that of 30th April 1866 by four millions, while the amount of the invested reserve is the same as in the latter year.* The silver-bullion in the Currency Department on the last day of each month in 1869 has been as follows:—

January	1·49	July	1·58
February	2·10	August	·99
March	2·09	September	·98
April	2·42	October	1·51
May	2·37	November	1·58
June	2·07	December	1·45

This amount of bullion is unduly high, and we may have to issue orders for a portion of it being coined.

"If, then, we cannot reasonably apprehend the currency-note circulation falling to six millions, we might legitimately, under the fundamental principle of the Paper Currency, ask for power to invest up to that amount. But if we hesitate to invest up to that amount at present (as I should hesitate), we might at all events invest up to nearly five millions.

"Supposing the average circulation to be standing at not less than eleven millions with investments up to five millions; then, of the total reserve, there would be 46 per cent. in securities and 54 per cent. in cash and bullion. In that case the proportion of securities would be moderate, and the proportion of cash and bullion strong. In England the total reserve of securities represented, on 31st December 1865, 51 per cent.; on 31st December 1866, 46 per cent.; on 31st December 1867, 42 per cent.; while that of cash and bullion on those dates represented 49, 54 and 58 per cent., respectively, of the total circulation.

"As already stated, I would not exercise the power of investing, if it were given us, up to the full amount immediately. I would do so gradually. For some time to come it might not be desirable to go beyond five millions. But as it might be expedient that such application to the Legislature should be rare, I would ask that the limit be extended to six millions.

"In order to show how careful and tentative our practice has been in making these investments hitherto, and how fully we may be trusted to con[illegible]

"In proceed with equal caution, I would offer the following states revert to tions of the reserve in Government securities from 1862 to principle-n'

In 1862	Rs.	40,00,779
"I[illegible]to October, inclusive, 1862	"	43,48,861
India, [illegible]ember 1862 to March 1863	"	68,48,861
[illegible]il and May 1863	"	67,24,580
[illegible]ne 1863	"	88,24,580
enforc[illegible]uly "	"	89,05,753
iss[illegible] August and September 1863	"	95,44,078
October 1863	"	1,10,44,078
November "	"	1,92,15,729
December 1863 to February 1864	"	2,00,65,770
March 1864	"	2,48,72,787
April "	"	2,70,16,986
May to December 1864	"	3,03,95,011
January to March 1865	"	3,67,45,011
April to August "	"	3,98,01,961
September 1865 to May 1866	"	3,98,02,532
June 1866	"	3,89,55,182
July "	"	3,88,37,833
August "	"	3,71,32,135
September 1866	Rs.	3,64,62,304
October to December 1866	"	3,64,29,410
January 1867	"	3,36,59,923
February "	"	3,36,07,229
March 1867 to May 1868	"	3,25,20,548
June to September "	"	3,25,64,956
October 1868	"	3,30,10,686
November "	"	3,72,80,061
December 1868 to February 1869	"	3,91,73,228
March and April 1869	"	3,91,30,061
May 1869	"	3,95,51,348
June "	"	3,97,61,992
July "	"	3,99,72,635

* This is correct; notwithstanding the fact that we have recently invested more than half a million. In 1865-66 the invested reserve was four millions. Then half a million of that was gradually sold. We have since invested half a million, bringing up the amount again to four millions.

"It will hence be seen that the securities gradually rose in amount from half a million in 1862 to four millions in 1866. Then they fell gradually to $3\frac{1}{3}$ millions in 1868. After October 1868, they gradually increased again to close on four millions, the legal limit.

"Such, then, are the reasons why I propose to raise the limit from four to six crores of rupees, or from four to six millions sterling.

"There is another proposed amendment in the Act which I may briefly explain; it is this: In certain sections of the Act, it is said that the Mint Master may be the Head Commissioner. Doubtless, it was not the intention of the law that the Mint Master must always be the Head Commissioner. Still, while these words remain as they are, it may be often understood that the Mint Master generally ought to be the Head Commissioner. But in reality there is no necessary connexion between the Mint and the Paper Currency Department. The Mint Master may, and often does, make a good Paper Currency Commissioner; but he has no special qualifications for this work; and he has to perform it in addition to his proper duties. As the Currency work more properly pertains to officers who have received training in the Finance and Account Departments, it may often happen that the work can be best entrusted to those officers. I therefore propose to omit the words in question from the Act, and to leave the Government quite free to nominate whom it sees fit for the Head Commissionership.

"There is one more amendment which I may mention, which is this.

"Though there may be nothing in the Act to prevent the Commissioner holding the currency-reserve in the hands of any officers subordinate to him for that purpose, but sanction seems necessary to the deposit of bullion-reserve in the hands of the Mint Master for coinage purposes, and if it be determined to distribute a portion of the reserve in important Mofussil treas[illegible]er to cash notes for the convenience of the public, it might be Dec. 1·31 } 1·53 advantage of this Bill to introduce a clause empowering the Head C[illegible] or Commissioner to hold a certain portion of the reserve or unissu[illegible] any Government treasury fixed with the approval of Governme[illegible]two millions' purpose of affording greater facilities to the public for the issnt to which cashment of notes, provided that all such notes or coin so depos[illegible]of a million be held at the sole disposal of the Currency Commissioner, and sha[illegible] be used for any other purpose than those allowed by Act XIX of [illegible] and shall be separately held from all other Government moneys, and shall be subject to such rules for custody and verification as the Head Commissioner, with the approval of Government, may from time to time appoint."

The Motion was put and agreed to.

LAND ACQUISITION BILL.

The Hon'ble MR. STRACHEY presented the Report of the Select Committee on the Bill to consolidate and amend the law for the acquisition of land needed for works of public utility.

NATIVE PASSENGER SHIPS BILL.

The Hon'ble MR. CHAPMAN presented the Report of the Select Committee on the Bill to make further provision for the regulation of Native Passenger Ships.

ELPHINSTONE LAND AND PRESS COMPANY, LIMITED, BILL.

The Hon'ble MR. CHAPMAN, in moving for leave to introduce a Bill to enable the Elphinstone Land and Press Company, Limited, when in voluntary liquidation, to sell their property to Government, said that this property had been reclaimed by the Elphinstone Company from what was formerly a noisome portion of the foreshore of the harbour of Bombay. The Company was formed in 1858, and was called after the lamented Lord Elphinstone, than whom, he (MR. CHAPMAN) humbly ventured to think, a braver gentleman or a wiser Ruler never governed an Indian Presidency. In 1862, the Company entered into an agreement with the Government to provide upwards of one hundred acres of land for the terminus of the Great Indian Peninsula Railway and other purposes. In return they obtained the right to reclaim from the sea, for their own advantage, about two hundred and fifty acres. At first sight, and, in a simple business-point of view, the bargain was an exceedingly favourable one for Government. They conceded what to them, in its natural state, was quite valueless, and in return obtained property which they were bound to provide for the Railway, and which was estimated to have cost over three hundred thousand pounds to reclaim. He (MR. CHAPMAN) had said that the bargain was a good one, viewed in a purely commercial light; but, politically, it was unquestionably a mistake. By it the Company secured a monopoly of the harbour-frontage immediately opposite the Native town, and were in a position to subject a very considerable portion of the entire trade of the port to wharfage and other dues. He ought to mention that the Government had the foresight to reserve to themselves the right to regulate the rates at which these dues were to be levied. But the transaction was nevertheless one which should not have been entered upon; and for the sake of obtaining an immediate pecuniary advantage, however large, the Government should not, in the interest of the public, have allowed the foreshore to pass out of their possession, and have given the Company so dominant a position. Shortly after the contract had been entered upon, an unexampled tide of prosperity set in to Bombay, owing to the American war, and to the stimulus consequently given to the cotton-trade. The Company, the managers of which were the enterprising firm of Messrs. W. Nicol and Co., set to work with their able and energetic Engineer, Mr. Ormiston, to carry out their contract. He (MR. CHAPMAN) supposed this country had never witnessed such extraordinary vigour in the prosecution of any public work as was then displayed. Gangs of stalwart Chinese labourers were imported, a fleet of barges was constructed on the most improved principles to bring earth from the other side of the harbour, and a regular service of trains was established to bring in material from Coorla on the main land. In short, everything that a combination of capital, skill and energy could do was done. In the meantime the speculation-mania rose to its height, shares in Companies of all kinds and descriptions commanded ridiculously high prices, and, in common with those of the wildest schemes, the shares of this solid *bonâ fide* Company reached quite a fabulous premium—at one time, he believed, as high as eighteen thousand pounds. As the Council were aware the era of prosperity was not of long duration, and a time of humiliation was at hand for Bombay. Consequent, mainly, on the cessation of the American war, and the extent to which insane speculation had been carried, the whole trade of the place collapsed, and the ruin became general. The property of the Company participated in the general depreciation; and the shares fell to fifty per cent. discount. In the meantime the Company had almost entirely completed their agreement with Government. Out of a subscribed

capital of two millions one hundred and sixty thousand pounds, one million two hundred and eighty thousand had, at this time, been paid up, and had been nearly all expended. The Company felt it would be impossible in the then state of affairs to call in the remainder of their subscribed capital. There could be no doubt that, in the year 1866-67, the Company were in considerable difficulty. Government were applied to for assistance, which resulted, he (MR. CHAPMAN) believed, ultimately in a loan of one hundred thousand pounds. During the last two years the value of the stock had revived; and the Company had now agreed to sell their entire property to Government at the par value of the paid-up capital, such value to be paid in four per cent. stock at the price of ninety-three. He understood it would be necessary to issue stock to the amount of one million seven hundred thousand pounds, which, at ninety-three, would represent one million eight hundred and thirty thousand. In consideration of this outlay, Government would secure, he believed, a property of two hundred and fifty-nine acres that had already been reclaimed, inclusive of the one hundred and twelve acres agreed upon in the first instance to be reclaimed for the Railway Company. A further expenditure of about a million would be required to complete the project as originally designed. Looking to the vast commerce that was now certain to concentrate in Bombay, consequent on the opening of the Suez Canal and the completion of the Railway system, the advantage to the public of this fine property, with its extensive water-frontage and facilities for the construction of docks, being in the hands of Government, was great. He understood the idea was that its management should be placed under a Trust, and he thought there was little fear of the State revenue suffering any eventual loss from this investment. He had mentioned these particulars, because he thought it would be interesting to do so. But in point of fact this Council had nothing to do with the past history of the property, or with the policy of the Executive Government in purchasing it. All they were asked to do was to formally ratify, by an enactment, the purchase that had been agreed upon. The Law Officers had expressed a doubt whether, in the absence of an express enactment, Voluntary Liquidators could carry out the sale in the manner proposed, and considered that dissentient shareholders might appeal to the interference of the Court. He wished to explain that there was nothing in this Bill to interfere with the volition of the shareholders. Dissentients, as the law now stood, could not prevent the majority from selling the property if they chose to do so; but they might perhaps prolong the proceedings by objecting to the manner in which payment had been arranged. Hence the necessity for the present Bill being brought under the consideration of the Council.

The Motion was put and agreed to.

The Hon'ble MR. CHAPMAN having applied to His Excellency the President to suspend the Rules for the Conduct of Business,

The President declared the Rules suspended.

The Hon'ble MR. CHAPMAN then introduced the Bill and moved that it be taken into consideration. He said that, as he had already endeavoured to explain, this Bill was of an entirely technical character. It had been drawn in consultation with, and with the concurrence of, the legal advisers of the Company, and it had for its object the formal ratification of a transfer of property which both parties were desirous to effect. They, as he had already said, had no concern whatever with the considerations which had induced the Government on the one hand, and the Company on the other, to enter upon this transaction. The Bill would authorize the Voluntary Liquidators to receive payment for the property in the form of Government paper, and would prevent dissentient shareholders taking exception to this procedure and appealing to the Court.

The Hon'ble MR. STEPHEN said there was just one point which he wished to mention. It might appear rather remarkable that this Bill was not introduced in the legislature at Bombay; but the reason of this was that the effect of the Bill would be to interfere to a certain extent with the jurisdiction of

the High Court of Bombay, which interference was beyond the competency of the Council at Bombay. As the Hon'ble Mr. Chapman had pointed out, it would produce no difference if this Bill were passed by the local Council, except the delay which a single dissentient shareholder might cause (he would have no power to prevent it) by instituting proceedings in the High Court of the Presidency.

The Hon'ble SIR RICHARD TEMPLE said that the arrangement which the Hon'ble Mr. Chapman had described would not involve any annual charge on the general revenues of the country: the charge would be transferred to the Bombay Harbour Trust Fund.

His Excellency THE PRESIDENT said that the negotiations between the Supreme Government and the Government of Bombay, were conducted on the distinct basis that, if the purchase was effected, such measures would be taken by the Bombay Government as would be necessary to secure the payment of the interest of the loan and the creation of a Fund for the gradual extinction of the capital from the Port and Harbour Fund of Bombay, so that, in lending the money, the Government of India did not intend to throw any charge on the general revenues of the country.

The Motion was put and agreed to.

The Hon'ble MR. CHAPMAN also moved that the Bill be passed.

The Motion was put and agreed to.

LOCAL PUBLIC WORKS BILL.

Colonel the Hon'ble R. STRACHEY, in moving for leave to introduce a Bill to facilitate the construction of works of public utility from Local and Municipal Funds, said that, during the last few years, the Government of India had frequently been asked by the various Local Governments to make advances for works of local improvement. In many cases these proposals had been made for State money for carrying out works of local improvement in towns: in several cases the object to be effected had been the improvement of water-supply; in other cases, it had been to improve drainage. Occasions also had occurred in which the Local Governments had asked the assistance of the Government of India in carrying out other improvements. The Madras Government had asked and obtained assistance in carrying out the excavation of a canal called the East Coast Canal, which made a communication between Madras and the districts to the north and south of that city, and admitted of permanent navigation along the Coast during that time of the year when the sea coasting trade would be stopped. There had been other cases in which small demands had been made on the Government of India. In almost all, sufficient grounds had been shown for making such advances, and the Government of India had never hesitated in assisting the Local Governments when satisfactory reasons had been established. But it had been ascertained that, in almost every case, excepting those of the Municipalities established for managing the Presidency towns, the Municipal bodies had not the power of legally entering into obligations under which they could raise money by law. These bodies were administrative authorities appointed to manage Local Funds, and had no power to deal with anything but the revenue that came into their hands year by year. The consequence was that the Government of India, in making these advances, had in reality no security for the loans it made to such bodies. It was the desire of the Government of India to do everything in their power to facilitate the carrying out of works of local public improvement, and with this object it had been considered desirable to obtain by law proper power for enabling the local bodies in various parts of the country to enter into agreements with the Government of India for the purpose of obtaining loans for carrying out such works. The Bill was intended to provide for this object.

REGULATIONS AND ACTS LOCAL EXTENT BILL.

The Hon'ble MR. COCKERELL introduced the Bill to consolidate and amend the law relating to the local extent of the general Regulations and Acts and to the local limits of the jurisdictions of the High Courts and the Chief Controlling Revenue Authorities, and moved that it be referred to a Select Committee with instructions to report in six weeks. He said that the Bill purported to effect a complete consolidation of the existing law regarding the operation of the general Regulations and Acts, and the local limits of the jurisdictions of the highest Courts of Judicature and the Chief Revenue Authorities. That law at the present time was spread over upwards of fifty enactments. As from time to time it had been found necessary to extend the operation of the general Regulations to any fresh territory or to exclude from such operation some tract formerly subject thereto, the extension or exclusion had, in each case, been effected by special legislation. The result of this process was that the Statute-book had been greatly encumbered with enactments of this class, and the ascertainment of the fact of the legal application of a particular Regulation to any place involved the labour of a vast amount of research; whilst, in some cases—as for instance that of the Dehra Doon District, to which he made particular reference when asking leave to introduce this Bill—the ambiguity engendered by repeated legislation in this direction regarding the same tract of country had caused the long-continued misapplication of the law by the judicial authorities. As regarded the territories subject to the control of the Lieutenant Governors of Bengal and the North-Western Provinces and the Madras Presidency, where the area within which the general Regulations were not in force was comparatively small and briefly definable, the object of the Bill was more conveniently and succinctly attained by a detailed specification of the portions of those territories to which the general Regulations did not apply. The first three schedules, consequently, were framed in accordance with this view. The circumstances of the Bombay Presidency, however, did not admit of the adoption of a similar course. In the case of the territories belonging to that Presidency, the application of the general Regulations had been of a very piece-meal character; in no district, apparently, had such application been universal. It had been confined to specified divisions of each district, and the detailed mention of these divisions, which formed the subject-matter of the fourth schedule, could not be avoided. It was to this clause alone that the Bill owed its somewhat cumbrous proportions. It might be objected, in reference to this circumstance, that the design of the Bill being to consolidate and condense the existing law, very little was gained where such lengthened recapitulations as were embraced in the fourth schedule were necessary. The answer to this was, that the scheme of the Bill being of general application, it would have been incomplete if its reference to any particular Presidency had been omitted; and although, on the score of brevity, the gain was far less than in the case of the other Presidencies, yet even in this respect some not inconsiderable advantage was secured by the proposed consolidation; for, as under the existing arrangement of the law there was a double reference to places to which the general Regulations were formerly extended, and which had been subsequently removed from their operation, the effect of the Bill would be to get rid of this double reference, and thus far at least to shorten the provisions of the law on this subject. It could with much reason be urged that a measure of this kind, so far as it related to the minor Presidencies, involving as it did purely local details, and consequently more fit to be dealt with by local experts, should be left to the Local Councils. That course would certainly, for many reasons, be more convenient, but there were legal difficulties in the way of its adoption which were insuperable. The first of these had already been alluded to by his hon'ble friend (Mr. Stephen), in reference to another Bill which had today been under consideration. It was that the Local Councils were not competent to vary or affect by their legislation the jurisdiction of the High Courts. Owing to the legal disability, from this cause, of the Local Council, to legislate in a matter of this kind, it was found necessary, about two years ago, to pass in this Council an Act for removing certain places in the Bombay Presidency from the operation of the general Regulations. The other obstacle to local legislation in this direction was the want of power in the Local Council to set aside or alter any Act passed by the Imperial Legislature since 1861. The Act which he (MR. COCKERELL) had just referred to as passed by this Council in 1868, and which it was now proposed to repeal in this Bill,

could not have been touched by the Local Council; hence the work of consolidation to be effected by this Bill, even if it could have been undertaken by the Local Council, must necessarily have remained incomplete. There were some other provisions of the Bill which, perhaps, called for explanation, as having apparently no connection with its general purport. He referred to sections 15, 16 and 17. The substance of these sections had been introduced into several Acts, from time to time enacted for the purpose of removing certain tracts of country from the operation of the general Regulations. For the purpose of consolidation, it was now proposed to repeal these several repetitions of the same subject-matter, substituting therefor the sections to which he had referred. The present measure was intended merely to affirm the results of past legislation in regard to the local limits of the general Regulations and the jurisdiction of the High Courts and Chief Revenue Authorities. He (MR. COCKERELL) was not prepared to say that the Bill now before the Council accurately fulfilled this intention. If it was referred to a Select Committee, the first step would be to consult the several Local Governments. The aid of local experience was essential to the correct adjustment of the details of the proposed enactment.

The Motion was put and agreed to.

GOVERNMENT RAILWAYS BILL.

Colonel the Hon'ble R. STRACHEY, in moving for leave to introduce a Bill to apply the provisions of Act No. XVIII of 1854 to Railways belonging to, or worked by, Government, said that it had been brought to the notice of the Government of India within the last few days, that the language of the Railway Act was such as to render it inapplicable to Railways belonging to, or worked by, the Government. There was no intention in this Bill to alter in any way the law relating to Railways: all that was proposed was so to modify the language of the Act as to make it applicable, in all cases, to Government Railways, precisely on the same principle as it now applied to Railways belonging to or worked by Companies. Under these circumstances he would give notice, now, that it was his intention at the next meeting to ask His Excellency the President to suspend the Rules for the Conduct of Business, in order to admit of the Bill being then passed. At the present time he (COLONEL STRACHEY) might say that the Calcutta and South-Eastern Railway, leading to Port Canning, was practically, as he believed, under no law whatever, and it was evidently desirable that that condition of things should not be allowed to continue.

The Motion was put and agreed to.

INDIAN WEIGHTS AND MEASURES BILL.

Colonel the Hon'ble R. STRACHEY also presented the Report of the Select Committee on the Bill to regulate the Weights and Measures of British India.

The following Select Committee was named :—

On the Bill to consolidate and amend the law relating to the local extent of the general Regulations and Acts, and to the local limits of the jurisdictions of the High Courts and the Chief Controlling Revenue Authorities ——The Hon'ble Messrs. Stephen, Gordon Forbes and Chapman and the Mover.

The Council adjourned to Friday, the 1st April 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl.
for making Laws and Regulations.

CALCUTTA,
The 25th March 1870.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 15 of 1870.

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, APRIL 9, 1870.

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GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 1st April 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding.*
His Excellency the Commander-in-Chief, K. C. B., G C. S. I.
Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble Gordon S. Forbes.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey, C. S. I.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
The Hon'ble F. R. Cockerell.

LAND ACQUISITION BILL.

The Hon'ble MR. STRACHEY moved that the Report of the Select Committee on the Bill to consolidate and amend the law for the acquisition of land needed for works of public utility, be taken into consideration. He said that the Council would see from the Report of the Select Committee that numerous alterations had been made in the Bill as originally introduced; but those alter-

ations might, with two exceptions, be considered to be of a minor character, not affecting the principle of the Bill as introduced. Two substantial changes in the Bill had been proposed by the Select Committee, and these required some notice from him; in only one of them, however, was there really any novelty. The alteration to which he would first refer was a matter which had long been before the Council. When the Bill was introduced about a year ago—or he ought rather to say immediately after its introduction—it was explained in a note circulated by the Legislative Department, and which had long been before the Council, that while the Bill laid down principles for the guidance of the persons officially employed in valuing land required to be taken up for public purposes, there was nothing to preclude the Executive Government, if it so desired, from giving, by way of percentage or otherwise, something additional to the price fixed, in consideration of the compulsion to which the owner of the land was forced to submit when it was so taken up. Whether, if given at all, this additional sum ought to be given in all cases, whether the owner was really disinclined to part with the property or not, was a question regarding which there was much difference of opinion. The Bill as originally drawn did not attempt to deal with the question, and it was reserved for future consideration. When, in December last, the Bill was referred to a Select Committee, MR. STRACHEY stated that, in his opinion, it would be proper to allow something over and above the market-value of the land, in consideration of the compulsory character of the sale. The Committee had decided in favour of the same view; and he thought, for his own part, that this addition was one which it was quite right to make. This was one of the only two really important alterations which had been made in the Bill as originally introduced.

The other substantial change was one regarding which nothing had been said on the previous occasions when the Bill was before the Council. The matter was raised for the first time before the Select Committee. It was brought to the notice of the Committee that Act VI of 1857 did not really contain the whole law in regard to the acquisition of land for public purposes. Act XXII of 1863 enabled the Government to take up land for works of public utility proposed to be constructed by private persons or by Companies. The first part of that Act regarded the procedure under which the Government was to satisfy itself whether it was really right or not to take up the land, as if it were required for public purposes, for works of public utility proposed to be constructed; and the Act then went on to give power to the Government, in the event of the proposed work being constructed, to prescribe the conditions under which the work was to be allowed, and the measures which should be taken fully to protect the interests of the public and its convenience and security. It seemed to the Select Committee that there was no reason for keeping on the Statute-book a separate law in regard to this particular subject, and that the opportunity should be taken of consolidating the whole law on the subject of acquiring land for public purposes or for works of public utility. The Committee had therefore proposed to repeal Act XXII of 1863, and to re-enact, as part of the present measure, those portions of the Act which were really of importance. Act XXII of 1863 was rather a complicated measure, which had been hardly ever brought into practical effect. It contained, also, many conditions regarding the acquisition of land required for railway-construction by private persons or Companies other than the guaranteed Companies by which the existing Railways had been made. There had been no case in which these particular provisions referring to Railways had been put in force, nor was there any present probability of their being required, because no such Railways were under construction, nor were any such, he believed, contemplated. It appeared to the Committee that, whatever provisions of this kind might be really required, they would more fittingly find a place in a Railway Act, than in an Act regarding the acquisition of land. It had long been admitted, as the Council were aware, that a review of the existing law regarding Railways was

very necessary, and the subject was now under the consideration of Government. Meanwhile, pending the conclusions that the legislature might arrive at regarding the general law regarding Railways, there could be no doubt, he thought, that the repeal of that portion of Act XXII of 1863 referring to Railways could lead to no possible inconvenience, and every thing which that Act really contained of present value it was proposed to include in Part VII of the present Bill.

These were the only two real substantial changes that the Committee had proposed. There were many other alterations, however, as the Council would see from the Report of the Select Committee, and, although he had called them minor alterations, there could be no question that they very greatly improved the Bill. They had made it, MR. STRACHEY was satisfied, a much more complete measure than it was before, and they had rendered it much more likely to be successful. He thought that, if the Council consented to pass this Bill into law, there was every reason to hope that it would remove the gross abuses of which so much complaint had been made, and from which both the public and the State and private interests had frequently suffered.

The intention of the Government, when this measure was first brought forward, was to take the law of England, as interpreted by the English Courts, as the basis of our legislation. He had formerly stated this on the authority of Mr. Maine and of the learned Secretary to the Council, and he thought the Hon'ble Mr. Stephen would probably confirm his statement, if he said that the present measure did little more than endeavour to adopt, in a spirit liberal towards private interests, the principles recognized by the law of England and other civilized countries.

The Hon'ble MR. STEPHEN said that his Hon'ble friend had been good enough to refer to him for confirmation of the statement, that what the Bill supplied was a liberal interpretation and application of the law of England to the circumstances of this country. It gave him great satisfaction to corroborate that assertion in the strongest manner. With reference, in particular, to the leading alteration to which his Hon'ble friend had referred, MR. STEPHEN would say a few words with the view of showing that we had adopted the law of England, and done so in a spirit of somewhat greater liberality towards the public than that which prevailed in England. According to the law of England, the compensation was assessed by a jury summoned by the Sheriff, and generally presided over by an assessor. No rules had been laid down to guide them in the exercise of their discretion, and the consequence was, that a branch of business had grown up in England, eminently profitable to lawyers, eminently profitable, in some instances, to those who received compensation, but in no way profitable, either to the undertaking for which the land was required, or to the general interest which the public had in a fair and equitable arrangement on such occasions. During the early history of this subject, those from whom lands were taken used to get enormous compensation. After that there was a considerable re-action, and cases of hardship sometimes occurred the other way. But at length, without any explicit legislative provision on the subject, but partly by practice, and partly by the decisions of the Courts of Justice, a sort of general rule was arrived at, more particularly in London, with regard to the amount of compensation to be awarded, and that general understanding was, that you were to pay the fair price which a prudent purchaser would accept for the property, plus an addition for the forced sale, which, by practice, was taken at ten per cent. Besides this, special compensation was made for severance, for expenses of removal, and any damage to trade that might result. The law in England thus rested practically on usage, and was subject to great variations: it rested also on a series of judicial decisions known to the public.

The Bill which was now submitted, and particularly that part of it to which his Hon'ble friend had referred, threw into the form of explicit propositions those general principles which had gradually come to be recognized

in England; but it treated the persons subjected to these compulsory sales somewhat more liberally than was the practice of London juries of late years. It gave them the market-value, not the auction-price, but the market-value plus fifteen per cent. He must say, he thought that when this arrangement was made known to the public—when they understood how fully the owner's interests had been consulted by his Hon'ble friend and the Select Committee to which the Bill was referred—the only doubt that could possibly be entertained on the subject would be whether we had not gone rather too far in liberality towards the individual at the expense of the public. MR. STEPHEN could hardly imagine that the Bill in its present form could be regarded as a measure of confiscation, or that it would work with any degree of hardship on persons whose property was taken in order to be used for public purposes.

The Hon'ble MR. COCKERELL said that, in concurring entirely, as he did, in the equity and propriety of the proposed enactment; entertaining also the opinion that, in its progress through Committee, the Bill had undergone most useful elaboration in detail and was now converted into a thoroughly workable measure, he should have thought it unnecessary to offer any remarks on the subject, but that he had seen it stated in a communication, emanating from a quarter from which this Council had, on several occasions, received very valuable opinions and suggestions, that, in proposing to pass this Bill to-day, we were proceeding with unusual and altogether unnecessary precipitancy. Now, it appeared to him that such a statement was wholly inapplicable to the circumstances attending the passage of this Bill through the Council, and to show this, he need only point to the facts that the first step towards the proposed legislation was taken so far back as the time of His Excellency's predecessor; that what might still be termed the main provisions of the Bill were explained at great length and discussed on each of the three previous occasions on which the measure had formed the subject of debate in this Council, and that, in the intervals between the occasions referred to, the utmost possible publicity was given to the policy of the Government in this matter. The call for the expression of public opinion in regard to the measure might be said to have been fully responded to, and the Committee had thus had the advantage of going into the consideration of the Bill with very full information in regard to all its material provisions. As the result of their deliberations, the Committee had framed a report which shewed, as had been explained by his Hon'ble friend the mover, that the main features of the original Bill were considered fit for adoption with but slight modifications. Under these circumstances, it could not reasonably be affirmed that the proposal to take the report into immediate consideration, and thereafter to proceed to the passing of the Bill as amended, was otherwise than in accordance with the usual practice of the Council. With still less reason could it be maintained that this course was, as regarded the measure now before the Council, unnecessary; for the extent to which, under the present state of the law, the whole tax-paying community was defrauded for the benefit of the few owners whose property was needed for public purposes had been fully demonstrated, and it was certainly incumbent on the legislature to apply a remedy to so gross an evil with all practicable dispatch. It had been urged in the communication to which he had referred that, as the Bill had been greatly altered in Committee, the proposed amendments should be published and time given for the public to become acquainted with their purport ere they were finally adopted by the Council. His Hon'ble friend the mover of the Bill had already explained that these amendments comprised only two changes of substance, and he would remark that, of these main alterations, the one to which Mr. Strachey gave the greatest prominence in his statement, namely, the proposal to give a bonus of fifteen per cent. in excess of such ordinary compensation as the owner of land required for a public purpose might be held entitled to receive, was not only sure to be viewed with general favour as a liberal measure, but would also be accepted as a not unexpected concession; for the substance of the proposal was distinctly set

forth, in the statement made by the mover of the Bill immediately before it was referred to a Select Committee, as worthy of consideration, and, if approved by the Committee, likely to be assented to by the Government.

The other proposed change, which had been described as of special importance, *i.e.*, the application of the provisions of the Bill to the case of land needed by Companies undertaking works of public utility, amounted in fact to no more than the consolidation and simplification of the existing law on this subject. The amended Bill contained a large number of other changes, but they were exclusively alterations of detail, and were in no way repugnant to the principles which guided its original construction. Their operation was calculated to improve and simplify the procedure in acquiring land for public purposes; where they affected the interests of the owner of land, they would be found to place him in a better position than he was under the original Bill: it was not likely, therefore, that the proposed amendments would be objected to, and consequently no useful purpose would be served by further delay. There was one, as he thought, very important provision in section 3, to which he wished to draw attention. He referred to the fourth clause, which, purporting to declare the meaning of the expression 'Court,' as used throughout the Bill, in effect provided for the constitution of the tribunal by which all claims to compensation for property acquired under the operation of the law which could not be settled between the Collector and the 'persons interested' were to be adjudicated. This question underwent most careful consideration, and the Committee determined that, ordinarily, such cases ought to be tried by the chief local Civil Court. The alternative provision was intended to be applied only in special cases, the circumstances of which might be such as to make it clearly for the interest and convenience of all parties that some special agency should be employed for the adjudication of those cases. It was hoped that local Governments would very sparingly exercise the special power vested in them by this clause. The intention of the Bill was that cases coming under it, in which the Collector and the owners of the property to be acquired could not settle the terms of purchase, the question should be referred to the most competent, and at the same time most independent, judicial agency to be found in the locality where the acquisition was to be made.

The Motion was put and agreed to.

The Hon'ble MR. COCKERELL stated that, with the concurrence of his Hon'ble friend the mover of the Bill, he would now ask leave to move for the insertion of the following new section immediately after the present section 56. The new section to bear the number 57, and the numbers of the subsequent sections to be altered accordingly.

"No award made under this Act shall be chargeable with stamp-duty, and no person claiming under any such award shall be liable to pay any fee for a copy of the same."

This amendment was designed to repair an oversight in the settlement of the clauses in Committee, and was absolutely needed to give full effect to the policy of the Bill as regarded the relief of the owner who was compelled, for the sake of public convenience, to part with his property, from all loss and annoyance of any kind, arising out of such compulsory surrender, that could be avoided. It would be clearly unreasonable to subject to any tax for revenue-purposes, transactions forced upon the owners of property in which they were not, by the necessity of the case, free agents. The recognition of this principle dictated the exemption of applications for payment of compensation in the recently enacted Court Fees Act; and the framers of this Bill had been careful to relieve persons interested in property acquired for public purposes of all costs of proceeding, taken for the purpose of such acquisition, except in cases where such costs had been clearly entailed by the wrong-doing of such persons.

Colonel the Hon'ble R. STRACHEY said that the awards which the Hon'ble Mr. Cockerell proposed to exempt from stamp-duty would only include awards made by the Collector under section 14 and those by the Court under section 34;

but under Part VI of the Bill, relating to the temporary occupation of land, analogous proceedings took place between the Collector and the person interested. COLONEL STRACHEY desired to point out that there were orders of Court, under section 45, in the case of a difference arising when the land was temporarily occupied. Also, there were agreements come to under section 43. Therefore he thought his Hon'ble friend would not object to treating agreements under section 43 and orders under section 45 in the same way as awards made under the two other sections.

The Hon'ble MR. STEPHEN remarked that there was nothing in the law to render such orders liable to stamp-duty. Nothing, therefore, need be said about them in Mr. Cockerell's amendment.

His Excellency the COMMANDER-IN-CHIEF said that he had listened to what had fallen from Mr. Cockerell and Colonel Strachey, but he had as yet not heard any reason given why this exemption should be made. It appeared to HIS EXCELLENCY to be worthy of consideration whether this particular class of business did show any special features which called on the Council to make a distinction in the application of the provisions of the Stamp Law.

The Hon'ble MR. STEPHEN said that in this instance, the action of the Government in taking land caused the persons interested to give up their lands for public purposes, and then to get an award made, or else to make an agreement, and it would be rather hard if they were compelled not only to give up their lands for public purposes, but also to pay a tax on the instruments by which they would get compensation. That, he thought, was the ground on which the distinction was made.

The Hon'ble MR. COCKERELL said he had already explained that the amendment was in accordance with, and in pursuance of, the policy of the Bill. In his opinion that policy would be incompletely carried out if the amendment were not adopted. The case was one which, for obvious reasons, excluded general considerations of the interests of the revenue. The effect of subjecting to a tax any of the proceedings forced upon the owners of property by the conditions of this Bill was to reduce, *pro tanto*, the amount of the compensation to which they were held to be entitled.

His Excellency the Commander-in-Chief said that it should be observed in the interests of the finances that the Bill was of a peculiarly liberal character towards the person proposed to be ousted from the property which was to be taken for a public purpose. We had only to turn to the forty-second section, and it would be seen that, in consideration of the compulsory nature of the sales, fifteen per cent. was to be added to what was considered the real value of the estate. When we were about to give such large advantages to those who were to part with their property, in the interests of the public, for public purposes, no reason, HIS EXCELLENCY thought, had been made out why these parties should be exempted from the small dues of the revenue by which their interests were affected. All exemptions from the operation of financial laws were greatly to be deprecated.

The Hon'ble SIR RICHARD TEMPLE concurred with His Excellency the Commander-in-Chief.

The Hon'ble MR. STRACHEY said that it appeared to him that no question was involved in the motion before the Council which could affect the imperial revenues at all. He did not suppose that the revenue realized from these fees could possibly amount in the course of a year to £5; at the same time it seemed quite clear that justice required that if we took a man's property for public purpose, against his will, he ought to be in every possible way protected against unnecessary loss and inconveniences of every kind, and MR. STRACHEY thought that it was clear that the owner ought to be exempted from liability to payment of stamp duties

in consequence of transactions forced on him by the Government, and although, as he had said, the loss of these duties was a matter of absolutely no importance to the Government, it was quite possible that their payment might be a matter of very considerable importance to the extremely poor people, whose land would not unfrequently be taken up. Consequently he entirely concurred in the propriety of the amendment proposed.

The Hon'ble MR. COCKERELL then moved, by way of amendment, that the following section be substituted for that which he had at first proposed:—

57. "No award or agreement made under this Act shall be chargeable with stamp-duty, and no person claiming under any such award or agreement shall be liable to pay any fee for a copy of the same".

The Motion was then put, and the Council divided:—

AYES.	NOES.
His Excellency the President.	His Excellency the Commander-in-Chief.
Major General the Hon'ble Sir H. Durand.	Hon'ble Sir R. Temple.
Hon'ble Mr. Strachey.	
Hon'ble Mr. Stephen.	
Hon'ble Mr. Gordon Forbes.	
Hon'ble Mr. Cowie.	
Colonel the Hon'ble R. Strachey.	
Hon'ble Mr. Chapman.	
Hon'ble Mr. Bullen Smith.	
Hon'ble Mr. Cockerell.	

So the amendment was carried.

The Hon'ble MR. STRACHEY also moved that the Bill as amended be passed.

The Motion was put and agreed to.

PAPER CURRENCY BILL.

The Hon'ble SIR RICHARD TEMPLE applied to His Excellency the President to suspend the Rules for the Conduct of Business, to enable him to introduce the Bill for the further amendment of Act No. XIX of 1861.

He said—"In making this application, I have little to add to what I stated at the last meeting of the Council (on the 25th March) when I moved for leave to introduce the Bill. I then shewed by statistics (the result of which will be in the recollection of the Council) how the progress of our Paper Currency justifies us in asking for power gradually to raise the limit of that portion of the reserve which is invested in Government Securities, from four crores or millions sterling to six crores or millions of rupees. In addition to those statistics there is one set of figures which, I think, would now interest the Council, and which I will present, in reference to remarks which have been made in some public quarters. It seems to be believed by some that the mass of our notes is held in the Presidency towns, and by a few parties or corporations like Banks, and that the circulation in the interior of the country is comparatively small.

"Now, how stands the circulation in the interior, and how is it to be measured? I will take the figures of the circulation for the month just expired (March). It then stood at Rs. 10,27,50,640, or 10¼ crores or millions, of which 9 crores or millions pertained to the Presidency towns, leaving 1¼ crores or millions for the circles in the interior. This sum was divided as follows among the circles of the interior; Allahabad £355,000, Lahore £244,000, Calicut £77,000, Trichinopoly £43,000, Vizagapatam £33,000, Nagpore £274,000, Kurrachee £233,000, Akola £87,000.

"Or, again, let us take the month of January last, when the circulation stood at its highest, namely, Rs. 11,48,06,470 or just 11½ crores of rupees or millions sterling. Of that, 10 crores or millions pertained to the Presidency towns, leaving 1½ crores or millions for the circles of the interior. This sum was divided among the interior circles as follows:—Allahabad £362,000, Lahore £274,000, Calicut £66,000, Trichinopoly £57,000, Vizagapatam £34,000, Nagpore £277,000, Kurrachee £266,000, Akola 196,000.

"Now, this circulation in the interior is considerable and increasing, though still very much below what we hope it will be some day. And it is the product of the Government system of Paper Currency within the last few years. Though the greatest part of the circulation is in the Presidency towns—which is only what might be expected, inasmuch as they are the great centres of trade—still, the circulation in the interior of the country is growing fast.

"Further, I have heard it remarked in some quarters that, in England, when there is a demand for money, then money is taken quite as much in notes as in coin, and that, at such times, the note-circulation often increases. Now, if I understand the argument rightly, it is assumed that, in India, the process will be virtually different; that is to say, when there is a demand for money, the money will be taken, not in notes, but in coin; or, in other words, when the money-market is in tightness or distress, there will be a rush, not for paper-money, but for cash; or, again, that the Banks, which generally hold large quantities of notes, would present their notes for encashment. Now, I cannot find that there is any reason for supposing that, in the above respects, the commercial centres of India are different from those in England or elsewhere. I have compared the rise and fall of the accommodation rates of the Bank of Bengal with the fluctuations of the note-circulation from 1865-66 to the present time, and I fail to find that when those rates have been high the note-circulation has been low. For instance, in April and May of 1865, the Bank's rates were thirteen and eleven per cent. for private bills; the note-circulation in the Calcutta Circle stood at £2,909,000. In April, May, June and July 1866, the Bank's rates were sixteen, fifteen, fourteen, and twelve, per cent.; the Calcutta circulation stood at £2,600,000, £2,713,000, £2,817,000 and £2,924,000. At both these troublous periods the note-circulation was well sustained, for the average circulation of 1865 stood at £3,033,000 and of 1866 stood at £2,799,000. In short, looking at the figures month by month for the last four years, I cannot perceive that the fluctuations of the note-circulation are materially, if at all, affected by the tightness or easiness of the money-market, as evidenced by the accommodation-rates of the Presidency Banks. Indeed, the absence of any relation between the two sets of phenomena may be accounted for by the steady progress of the Paper Currency.

"I regret to see that in some quarters it seems to be supposed that, if the power of investing up to six crores or millions is conceded to us, it will be exercised at once and not gradually. I trust that it will suffice to remind this Council of the assurance which I gave at the last meeting, on behalf of that Department of the Government of India which I represent, to the effect that it is our intention to exercise the power, if it be voted us, in a tentative and cautious manner. If the Council will bear in mind the statistics I presented at the last meeting, of the very gradual manner in which the investments were brought up to the present limit of four crores or millions, it will be apparent that in the past our practice has been cautious; and that is the best guarantee that the intention I now declare of continuing in the same cautious course will be fulfilled.

"I may conclude by observing that the measure I now propose has the support and approval of our distinguished colleague His Excellency Sir W. Mansfield, who, as the Council knows, has for many years paid special attention to currency-questions, and was President of the Commission which sat four years ago and reported on the whole subject of the Paper Currency of India."

The President declared the Rules suspended.

The Hon'ble SIR RICHARD TEMPLE then introduced the Bill and moved that it be referred to a Select Committee with instructions to report in a week.

The Hon'ble MR. COWIE said that, as this measure had called forth a certain amount of adverse criticism, he wished to record his opinion that he thought it a correct and advantageous system, and one which the Government could not have postponed much longer. He had formed this opinion on the assumption that the approach to the new maximum of six millions would be as carefully made and would be as guardedly approached as was done some years ago to the present maximum of four millions.

His Excellency the COMMANDER-IN-CHIEF said that, having been appealed to by his hon'ble friend for his opinion, he begged to say that the Bill had his entire support. He thought it not impossible that the uncertainty created in the public mind by the proposal of his hon'ble friend had arisen from the terms in which the Secretary of State for India announced his views in 1860 with regard to the manner in which the Paper Currency should be organised in this country. If the Council referred to the Despatch of the Secretary of State quoted at the last meeting, they would find that he made use of these words:—

"The sound principle for regulating the issue of a paper-circulation is that which was enforced on the Bank of England by the Act of 1844, *i. e.*, that the amount of notes issued on Government securities should be maintained at a fixed sum, within the limit of the smallest amount which experience has proved to be necessary for the monetary transactions of the country; and that any further amount of notes should be issued on coin or bullion, and should vary with the amount of the reserve of specie in bank, according to the wants and demands of the public."

Perhaps it would appear strange to the Council that that which was announced by Sir Charles Wood to be a sound principle, was condemned by many great banking authorities in England. There was perhaps no question with regard to the Paper Currency which had excited so much adverse criticism at the remark that it was prudent to issue paper as against securities. It was laid down with an authority which HIS EXCELLENCY believed it to be impossible to controvert, that if you committed yourself to this principle in its integrity, you embarked in the channel which, in the days of Law under the Regent Orleans, in France, and again in the South-Sea time in England, and with regard to the convulsions which fell on the commercial world four years ago, led to wholesale ruin; that if you adopted this principle and accepted it in its integrity, you were liable to consequences, from which sooner or later escape was impossible, such as those to which he had adverted as the most serious instances presented by financial history. Perhaps it might seem that His EXCELLENCY was splitting words, because it was clear that Sir Charles Wood wished to guard himself, and believed himself to be guarded, from any such dangerous consequences by the precautions he described. Yet there was always a danger in describing a system to exist on a basis the soundness of which was open to question, and which was questioned by scientific authorities, one result being, as it appeared to him (SIR WILLIAM MANSFIELD) in this instance, that a wrong impression had been produced in the minds of the public with regard to the very innocent measure under consideration. The principle, as he understood the various works which he had consulted on this point—the fair principle—on which a Paper Currency should be founded, was that it should have a solid basis; that it should be issued on a metallic foundation alone, partly bullion and partly specie. That, he thought, was the principle generally admitted, and which alone could be admitted as sound. Having laid down a solid basis and issued paper against bullion and specie, it was then for the Member in charge of the finances to determine how much of this currency we could afford to face, with regard to the absolute convertibility of the note, without the corresponding portion of bullion and specie in hand; that, as was said by McLeod in his valuable work on Banking,

was a matter of experience. His Excellency would read to the Council a short passage in which that proposition was maintained:—

"As all Paper Currency is a 'promise to pay' gold or silver bullion at some definite time, it is quite evident that the 'promises to pay' floating in a nation must bear some proportion in quantity to the actual quantity of the bullion. It is quite impossible to fix any definite proportion, because that depends upon a multitude of peculiar circumstances; experience is the only guide on the subject."

Well, then, as His Excellency had attempted to explain, the currency of the country was founded on the principle of the notes being issued against bullion and specie. Then, at a certain point, the Hon'ble Member who was in charge of the finances declared that it was safe to invest a certain quantity of bullion and specie in hand, because it could not in any possible manner be called upon to assist in the convertibility of the note. His Excellency drew particular attention to that point, because he considered that, if from the nature of things it were possible that the whole of the notes in circulation could return to the vaults of the Currency Department, it would be absolutely unsafe to invest even the smallest portion with regard to the principle stated in the paper from which he had quoted. Then it appeared to His Excellency, according to the best investigation he had been enabled to give to the subject, that such a currency-system as that introduced by the late Mr. Wilson, and which had now been in progress for eight or nine years in India, was founded on a thoroughly sound and solid basis; and it was within the province of the Hon'ble Member in charge of the finances to tell the Governor General in Council when he considered that the proper point had been reached, demanding further investment of bullion and specie. In support of that, His Excellency would venture to read a definition he had prepared for his own guidance.

"The currency-reserve, whether as held in the Bank of England, or in the Indian Currency Department, is, in point of fact, a kind of trust-investment made under certain legislative enactments, for the purpose of giving the utmost assurance to the respective Governments and the public for the redemption of the Paper Currency, without causing that loss to the treasury and to the public which would ensue on the retention of many millions of specie in Bank or Currency Department cellars, which cannot from the nature of things be possibly wanted."

The figures placed before the Council by his Hon'ble friend showed a most remarkable development of the Note-circulation. Of those who had first listened to Mr. Wilson's proposition ten years ago, and who had been called on to investigate its development since, there was hardly an authority who would not say that this development of the currency in this safe and solid manner had surpassed our anticipations. Well, having reached this point, we might ask, has not the time arrived when, as the Hon'ble Mr. Cowie stated it, the four millions of investment should not be gradually extended to six millions? His Excellency had no doubt that that time had now arrived.

It was said, in some circles, that this question was first raised with regard to certain projects which Sir Richard Temple would state to-morrow with reference to his Budget; but His Excellency could affirm that this question first received the attention of the Government of India many months ago, when his Hon'ble friend was in England; the matter was discussed, and we had made up our minds that there could be no harm in the matter. On his return, Sir Richard Temple found the Council Notes, and having turned his attention to the subject and agreed in the conclusions arrived at during his absence, the result was the measure before the Council. This Bill had nothing in any way to do with the Budget projects which would be announced to-morrow.

His Excellency had nothing to add, except that, as far as he had been able to judge, he believed that there was no currency-system in the whole world which was at present on a more solid and scientific basis than the Paper Currency of this country.

The Motion was put and agreed to.

OBSOLETE ENACTMENTS BILL.

The Hon'ble Mr. Stephen presented the Report of the Select Committee on the Bill for the repeal of certain obsolete enactments.

HINDU WILLS BILL.

The Hon'ble Mr. Stephen also presented the Report of the Select Committee on the Bill to regulate the Wills of Hindús and Buddhists in the Presidency Towns.

INDIAN WEIGHTS AND MEASURES BILL.

Colonel the Hon'ble R. Strachey moved that the Report of the Select Committee on the Bill to regulate the Weights and Measures of British India be taken into consideration.

The Hon'ble Mr. Forbes said that he had opposed the Bill before the Council, as the Hon'ble Mover was aware, on various points during its progress, and he wished, before the Bill became law, to say a few parting words of disapprobation regarding some of its provisions. He was aware of the labour and ability which his Hon'ble friend had devoted to the construction of this Bill; but, looking to the result which he had produced, it seemed to him (Mr. Forbes) that the Hon'ble Mover had to some extent enacted the part of Frankenstein, and produced, not a monster perhaps, but a very unsymmetrical creation. The Bill was neither the fulfilment of the views expressed by Government in their despatch, dated November 1868, to the Right Hon'ble the Secretary of State, and approved by him, nor was it the metrical system in its proper form. Here was indeed the body, or rather the members of the metrical system, but joined together after a fashion devised by the Hon'ble Member. He (Mr. Forbes) knew that the reason which his friend alleged for this course was, that he believed the measure in this shape would encounter less opposition than would be offered to the metrical system. He (Mr. Forbes) could not see this. He thought that it was a mistake, and that the Indian public would prefer the metrical system to the creation of the Hon'ble Member. For his own part he (Mr. Forbes) believed that the wisest and best course would be to pass a measure which should introduce standards of weight and capacity only; a less ambitious measure certainly, but one better suited to this country. In order that he might justify the terms by which he had characterized the Bill, he begged the attention of the Council to the latter part of section 5, which provided that, unless it should be otherwise authoritatively notified, sub-divisions of weights and measures should be expressed in decimal parts. If the Hon'ble Mover had introduced the metrical system in its proper form, decimal numeration would have followed as a matter of course; and would have been intelligible to the simplest mind; but it seemed to him that his Hon'ble friend had done too much and dared too little, and in this Bill decimal numeration simply appeared as an arbitrary condition. He (Mr. Forbes) was quite sure that the addition of this condition would prove a great obstruction to the cordial acceptance of the Bill by the people of India, and that they would shrink from what would otherwise be regarded as a boon and a benefit. Every one who was acquainted with India knew that the Hindú system followed the currency, and used the factors and multiples of sixteen. He thought that most of the members of this Council must have observed the operations of a shroff counting a heap of rupees; he drew the coin to him by fours and numerated accordingly. Many of the members must also be aware that a cultivator, in describing a crop, spoke of it as a twelve-anna crop, meaning that it was a three-quarter crop, or a fourteen-anna crop, and so on, as the case might be. This system was familiar to Hindús of all ages; it was simple and led to no confusion. He was persuaded that to attempt to substitute the decimal numeration for it would be to encounter as great a difficulty as

the removal of any caste or religious custom. He thought that the Council ought to reject the concluding part of section 5, and, if he met with any encouragement to do so, he was prepared to move its rejection from the Bill.

Colonel the Hon'ble R. STRACHEY said that he had intended to have explained the form into which the Bill had been finally thrown by the Select Committee before the Hon'ble Mr. Forbes made the remarks which had just fallen from him, and he would now offer a few remarks on this subject. As to the change which had been referred to in the scope of the proposed legislation, all that had to be said was that in fact the present Bill did nothing more than what the Government of India recommended to the Secretary of State, and what the Secretary of State agreed should be done. What the Government of India proposed was that, as regards any general change of weights and measures in British India, nothing should at present be carried out excepting a change in the weights; and that the change in weights should be made very gradually and with very great care. There was no specific allusion made in the despatch of the Government of India to the Secretary of State to measures, but it was understood at the time when that despatch was written that the time had not come for dealing with the question of measures at all. Before the Bill now before the Council was prepared, and during the interval between the writing of that despatch and the preparation of the Bill, it had been brought to the notice of the Government that for the purposes of some of the departments of Government, it might be found to be expedient—he might almost say necessary—that the metre should be adopted as the unit of length simultaneously with the adoption of the new ser, which it was determined should be equal to the Kilogramme as the unit of weight. Consequently, in framing the Bill, it was thought right that a distinct reference should be made to the metre, and that it should be defined in the same general way that the new unit of weight was defined. There would be a manifest inconvenience if the Government adopted in any of its departments, or required the Railway Companies to adopt, any measure which could not be legally substantiated in India. The only way in which legal form could be given to any measure which the Government proposed to adopt, was to declare by law what should be the standard by which such measures were to be tested. Provisions were made in the Bill for testing and verifying weights. It was evident that, if the machinery which the Government proposed to create for the purpose of testing and verifying weights could not be applied to the testing and verifying of measures, the community at large, in its dealings with the Government or in its dealings with the Railway Companies, would not have that amount of protection afforded to them which they had a right to demand from the Government. Under these circumstances, it was thought proper to define in the Bill what should be the metre. The application of the metre however merely extended to the transactions of the Government Departments, Municipal Bodies and Railway Companies. As he had explained on a former occasion, the Government practically had the power, in respect to such Departments, Bodies and Companies, in its executive capacity, to order the adoption of any of the measures referred to in the Bill without having recourse to legislation. But, for the reasons he then explained, and which he had now again repeated, it was considered better, when the Bill was put before the Council, to include in it a reference to the metre. He might add that these views had been agreed to by a large majority of the Select Committee.

As regards the form given to the Bill and the manner in which the metrical units had been dealt with, the Hon'ble Mr. Forbes was, he thought, somewhat under a misapprehension. As COLONEL STRACHEY had endeavoured to explain before, the idea of establishing any theoretical units of weight or length had been entirely given up by scientific men, and the only basis on which any system of weights and measures could be safely framed

was now universally admitted to be the basis of material standards. On that basis it was proposed to construct the system of weights and measures to be adopted in British India. There was no reference to any theoretical connection between the unit of length and the unit of weight; there was no necessity for any such reference, and in fact any such reference that could be made must be incorrect. Consequently, in the Bill as it now stood, the units of weight and length were defined, in the one case as a weight of metal in the possession of the Government of India, and in the other case as the distance between the marks at the end of a rod of metal in the possession of the Government of India.

In connection with these remarks, he might add that the Committee unanimously adopted the conclusion that any reference to English weights and measures in the definition of the units was objectionable. It was brought to the notice of the Committee that the figures originally inserted in the Bill were questioned. Those figures, he should say, were inserted in opposition to his own views of what was proper, and on its being explained to the Committee that no figures could give a precise or certain equivalent, in English weights or measures, of the new weights and measures, the Committee unanimously agreed that it was proper to omit all reference to English weights and measures and to define the new units as had now been done in the Bill, that was, by reference to certain precise material objects, the Kilogramme des Archives, and the Mètre des Archives which they were to represent.

An addition had been made to the portion of the Bill which referred to the compulsory introduction of the new system. It was brought to the notice of the Committee that, in many parts of India, particularly in the South, the ordinary transactions of the people in grain were carried on with measures of capacity and not with weights. It was true that these measures of capacity represented certain weights of grain. The introduction of measures of capacity, which, under the new system, were also based on the unit of weight, did not in fact introduce any reference whatever to the new standard of length. The unit of measure of capacity was defined to be a measure containing a ser of water. Therefore, although there was an apparent departure from the original intention of confining compulsory action to weights alone, measures of capacity were in fact representatives of weight, and therefore there was no divergence on that point from the original intention.

An important addition had been made to the Bill by the proviso which had been added to section 22, which declared that the possession of any weight or measure in accordance with the standards of weights and measures established throughout the United Kingdom of Great Britain and Ireland would not subject the possessor to any penalty. This was an addition obviously very proper, as transactions between India and England would, to a very great extent, be carried on with the weights and measures of England.

Although it would perhaps have been more proper if he had reserved his reply to the particular remarks the Hon'ble Mr. Forbes had made on some of the details of the Bill to a later stage of their proceedings, he might save the time of the Council if he now made one or two observations in reply to those remarks. Mr. Forbes had particularly referred to the last clause of section 5, which said that, unless it be otherwise ordered, the sub-divisions of all weights and measures should be expressed in decimal parts. The manifest scope and intention of section 5 was to give power to the Executive Government to declare what new weights should be adopted, but subject to the proviso that they were to be exact multiples or sub-multiples of the units. This had been done advisedly and altogether in opposition to the views of the extreme partizans of the metrical system. Such persons affirmed that the only proper way to proceed was to introduce the decimal system once for all in its integrity, however troublesome such a radical change might be, and they deprecated any gradual change. COLONEL STRACHEY personally did not entertain those views, and the Committee, he saw, had adopted the view found in section 5, that it should be left

to the Executive Government to prescribe the precise form of the new system of weights and measures that should be adopted, in addition to the new units. The provision that had been introduced empowering the Government not to make decimal multiples compulsory, unless they were fully convinced that such divisions should be made, so far from suggesting that the divisions should necessarily be decimal, would obviously be quite in the opposite direction. There was no doubt, as his hon'ble friend Mr. Gordon Forbes had remarked, that there would be great difficulty in carrying out any decimal system of weights and measures, or any change of the units such as was contemplated by the Bill. There was no question that the difficulty in India, of carrying out these changes effectually, would be greater than in any country in which education was further advanced. If it was really desirable to introduce, early, a good system of weights and measures into the country, the sooner we began it the sooner would it really take effect. That the change was difficult was no reason why we should shirk it. If the ignorance of the people was to be received as a reason for not adopting improvements, he thought India would be in a very bad way indeed. It would be for the Government to see that all changes of the sort contemplated in respect to the weights of the country were carried out with great caution, and that nothing should be done to force any change on the people until they had been gradually prepared for that change by the adoption of the new system in the Government Departments. The transactions of the Government Departments and the Railway Companies were on so large a scale, that the community at large would, in a measure, be forced to adopt whatever the Government and those large Carrying Companies adopted; and there was no reason to doubt that the people in the districts and towns in the vicinity of the larger Government establishments and of the lines of railway would soon become habituated to the use of the new weights, and that it would then become possible and reasonable to extend their use to such localities.

Major General the Hon'ble SIR HENRY DURAND said that there was a point in connection with this Bill which he did not see touched upon, but which was, incidentally, rather important. He wished to be informed whether, as the statement mentioned that Government offices were to adopt the new system of measures, it was intended that the unit of measure should extend to the great geodesical operations carried on in the country on the basis of English measures, involving a long series of most scientific observations and labours carried on for a long series of years. There were volumes based on those calculations. Was it intended that the whole of those labours was to be of no effect, and that we should remodel the whole triangulation of the country, all the maps based on it, and the whole of the revenue-surveys in connection with those labours? If that were so, it would be a very serious proposition indeed.

Colonel the Hon'ble R. STRACHEY said, in reply to the Hon'ble Sir Henry Durand, that section 9 merely declared that, whenever the Governor General in Council considered that proper standard-weights and measures of the new system had been made available, he might direct that any of such weights and measures should be used by Government Offices, Municipal Bodies and Railway Companies. All that he could say in reply to the question put by the Hon'ble Member, as to the probable effect of the passing of this Bill on the operations of the Survey Department, was that he was not aware that there had been under consideration till the present time any proposal to make any alterations in the operations of any Public Department in connexion with the proposed change of weights and measures. The question had been incidentally raised in the Public Works Department, whether, for some branches of that Department, the adoption of the metre simultaneously with the kilogramme might not be desirable, but the question had not taken a definite form, and no decision to do anything had as yet been come to. He presumed that, if the Executive Government considered that it was proper to alter the scale on which the public maps were constructed, it would be optional with it to do so. The departmental officers of the Government would necessarily be asked to advise the Governor General in Council on the subject, and the Government, after full consideration it may be presumed, would come to a decision as to any change that might be suggested. There was, however, nothing in the Bill which implied that any such change as had been referred to was contemplated; all that it said was that, when the Government considered it proper to make a change in the unit of length, it should be made in a certain way. Obviously, the executive Government could do this whether the Bill became law or not, and he could not see how it could be supposed that the Government could be in any way forced to make changes merely because this Bill contained a declaration of the indisputable fact that they could on their own authority order their own offices to make changes.

Major General the Hon'ble SIR HENRY DURAND said, he was aware that the Bill was permissive and left much to the discretion of the Government, but the reply was not satisfactory; for the Bill and statement intimated a clear intention as to the early introduction, through the Government offices, of the new system of measures, and it was a very material question whether the whole of those scientific operations, on which all the surveys and maps of the country were based, should stand fast or not, whether, in fact, the Great Trigonometrical Survey was to continue to work with the old English measures hitherto employed, or with the new.

The Motion was put and agreed to.

Colonel the Hon'ble R. STRACHEY then moved that the Bill as amended be passed.

The Motion was put and agreed to.

NATIVE PASSENGER SHIPS'. BILL.

The Hon'ble MR. CHAPMAN moved that the Report of the Select Committee on the Bill to make further provision for the regulation of Native Passenger Ships be taken into consideration. He said that he had to request the special attention of the Council to sections twenty-four, twenty-five and twenty-six. These sections constituted the back-bone of the Bill. By the first of them all ships sailing from any port in British India to any port in the Red Sea were bound to touch at Aden and there obtain a clean bill of health, and the owners, or masters, were liable to a civil penalty of rupees five thousand if they omitted to do so. By section twenty-five, all ships sailing from any port east of the Cape of Good Hope and commanded by persons to whom the Bill applied were liable to a criminal penalty of two thousand rupees if they did not touch at Aden and obtain a clean bill of health. The reason of the difference between the two penalties was this. In the case of ships clearing from British ports, the officers of the Government would be able to insist on the owner or commander entering into a civil bond before allowing the ship to clear out; whereas, of course, in the case of vessels sailing from foreign ports, there would be no opportunity of doing so. The only way in which the criminal penalty could be enforced in the latter case would be by information on the part of some one of the crew or passengers on the arrival of the ship at a British port, or by an inspection of her papers.

Section 26 provided that the bill of health which ships were bound to obtain would be withheld in all instances where there were more than the authorized number of passengers. When MR. CHAPMAN took charge of this measure, it became his duty to devise the most effectual means he could think of to prevent the fearful amount of overcrowding which there was

reason to believe prevailed on board these pilgrim ships. Looking to the geographical position of Aden, it at once occurred to him that the best plan would be to overhaul them there. It would be impossible, considering the number of foreign ports in the Straits and elsewhere, to arrange, in concert with the several Governments of these ports, for the examination of ships before departure. He admitted that the provisions of the present Bill were very stringent, and were likely to occasion considerable inconvenience and expense. All he could say was, that he should be happy to make less objectionable provisions if he thought they would secure the desired ends. The practical result of the measure would be that pilgrims would have to pay more for their passage than they now did. He had received a petition signed by some members of the Muhammadan community, in which, while approving generally of the measure, they suggested that, in cases where the wind was favourable and there was ample time to reach Jeddah at the proper season for making the pilgrimage, the ship should be obliged to touch at Aden; but if not, she should be permitted to proceed direct to Jeddah, and there the passengers should, previous to landing, be subjected to an examination by the Consul. He need hardly remark that, in point of practice, it would be impossible to give effect to this suggestion. In his opinion, if the Government were to legislate at all on these matters, it was advisable to do so in a complete and effectual manner.

The Hon'ble MR. COCKERELL said that as a member of the Select Committee on this Bill, he wished to state that the Committee had not lightly, or without a full sense of their rigour, adopted the very stringent provisions contained in sections 24 and 25. Indeed he might say that his Hon'ble friend's proposals in this direction were very reluctantly assented to. It was felt, however, as had been stated by his Hon'ble friend, that the very objects of the present legislation, which had been undertaken in the paramount interests of the cause of humanity, could not be effectually attained in any other manner. The obvious objection to these provisions was, that they imposed a similar obligation and burden on all masters or owners of Native passenger ships, including those who might have never carried more than a fair complement of passengers, with those who, for personal gain, had disregarded the dictates of humanity and rendered necessary such strong preventive measures as were provided by the Bill. As regards the expense entailed by the proposed provisions, it was within the power of the Executive to mitigate the burden to a considerable extent. He understood that, quite recently, vessels touching at Aden for the sole purpose of using the telegraph had been exempted from the payment of port-dues.

It was only reasonable, under the circumstances in which Native passenger ships were compelled to enter that port, that a similar exemption should be applied to them, and he had no doubt but that this would be done.

The Motion was put and agreed to.

The Hon'ble Mr. Chapman then moved the following amendment. That in section 24, line 12, after the word "Aden," the words "on her outward and also on her homeward voyage" be inserted.

These words were omitted by an oversight. The effect of them would be to subject the ship to examination both on going to, and returning from, the Red Sea. The practice of overcrowding prevailed on both occasions.

The Hon'ble MR. CHAPMAN also moved that the Bill as amended be passed.

The Motion was put and agreed to.

GOVERNMENT RAILWAYS' BILL.

Colonel the Hon'ble R. STRACHEY introduced the Bill to apply the provisions of Act No. XVIII of 1854 to Railways belonging to, or worked by, Government. He said that the object of the Bill was perfectly explained in the title. As he had stated when he asked for leave to introduce the Bill, it had been observed that the language of Act XVIII of 1854 was such as to make that Act inapplicable to railways belonging to the Government, and it was necessary to correct this.

Colonel the Hon'ble R. STRACHEY having applied to His Excellency the President to suspend the Rules for the Conduct of Business,

The President declared the Rules suspended.

Colonel the Hon'ble R. STRACHEY then moved that the Bill be taken into consideration.

The Motion was put and agreed to.

Colonel the Hon'ble R. STRACHEY also moved that the Bill be passed.

The Motion was put and agreed to.

The following Select Committee was named:—

On the Bill to amend Act No. XIX of 1861 *(to provide for a Government Paper Currency)*—The Hon'ble Messrs. Stephen, Gordon Forbes, Cowie, Chapman, Bullen Smith and Cockerell and the Mover.

The Council adjourned to Saturday, the 2nd April 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

CALCUTTA,
The 1st April 1870.

GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Saturday, the 2nd April 1870.

PRESENT :

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I. *presiding.*
His Excellency the Commander-in-Chief, K. C. B., G. C. S. I.
Major General the Hon'ble Sir H. M. Durand, C. B., K. C. S. I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble Gordon S. Forbes.
The Hon'ble D. Cowie.
Colonel the Hon'ble R. Strachey, C. S. I.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
The Hon'ble F. R. Cockerell.

FINANCIAL STATEMENT.

INCOME TAX BILL.

The Hon'ble SIR RICHARD TEMPLE, in moving for leave to introduce a Bill for imposing duties on Income and Profits, said—MY LORD, "I have now to present the Budget for British India for the official year 1870-71, this being the eleventh annual statement presented to the Legislative Council. During my absence from India for six months of the year 1869-70, the finances were administered by my hon'ble colleague Mr. John Strachey, and some of the measures which I shall hereafter have to mention were commenced or carried on by him. The ability and carefulness with which he conducted the administration are too well known to your Lordship and to the Council to require any further commendation from me.

On this, as on former occasions, my statement will be divided into three parts, namely, the actual account for the past year 1868-69; the regular estimate for the year just closed 1869-70: and the budget estimate for the current year 1870-71, now commencing.

Before adverting to the three divisions in the order above named, I must explain certain improvements now made for the first time in the mode of exhibiting the figures.

In the first place I am about to show the account of the working of the State railway, and the account of the Government with the several guaranteed railway companies, in the same manner as all other parts of the public accounts, that is to say, the real receipts will be shown on the receipt side, and the full payments on the expenditure side. Hitherto, as the Council will remember, the plan followed has been a different one. For instead of showing the receipts on one side and the payments on the other, that is treating the account in the gross, we have shown nothing at all on the receipt side, and only the nett payment (after deduction of receipts) on the other side. This has been the meaning of the item which has hitherto appeared in our financial statements, under the designation of guaranteed railway interest, less nett traffic receipts. In my exposition of last year, I furnished a summary of the main facts from which that important item was derived, namely, the gross amount of interest

payable by the State to the shareholders of the guaranteed companies, then the amount recovered by the State from the traffic receipts, and so on. Whether the Council was able to follow me through that explanation, I cannot say. But I felt at the time that it was hardly a satisfactory circumstance that so much had to be said to elucidate an item which ought not to need such elucidation at all, and which ought to be in its nature apparent from the face of the statement. Subsequently this consideration further forced itself upon me. The figures of all other departments are exhibited not in the nett but in the gross. No other heavy payment is shown in diminished proportions by reason of a set-off. If this were to be done generally, then the financial statements would lose half their clearness, and the publicity half its value; and the real nature of the income and expenditure would not be intelligible. Why then should an exception be made in the case of the railway expenditure, which has been for years a large and growing item in the charge side of our financial accounts? There is no good reason whatever for this. On the contrary the public has a clear interest in seeing this part shown in the same way as all other parts of the account. For the payments by Government of interest now approach the sum of 4½ millions sterling annually. How is the rapid accretion of this interest to be appreciated, if it is not shown in the annual statements? On the other hand, the set-off against this is the amount of nett traffic receipts, that is the gross traffic receipts, less working expenses. This also is happily growing fast, and now exceeds 2½ millions sterling. But still it is, and will probably for some time remain, inadequate; in other words it is and will be less than the interest payments. But we hope that this may gradually approach nearer to the balance of the account; and it concerns every one to know how far this desirable approximation is or is not being attained. This depends on the development of railway traffic and the economy of working expenses. Indeed the working expenses now amount to nearly four millions sterling per annum, and constitute virtually a branch of public expenditure in which the public is as nearly concerned as in any other branch. These points are not only fraught with general interest, but also affect the ultimate financial result and the determination of surplus or deficit. I therefore propose to show the two great items each on its proper side of the account. This course too strictly accords with the terms of the contract between the State and the Companies. After providing for the regular payment by Government to the Companies of the five per cent. interest on the capital paid up, the contract goes on to say that "all monies received by or on account of the Railway Company in India * * * shall be paid into the Treasury" of Government; that the "nett receipts after deducting all sums * * * for the current expenses of working the railway" * * * "shall be applied in the first place towards the discharge of the interest payable" by the Government.

In the second place, as the Council will recollect, the practice has been to exhibit the expenditure in India in detail under the main heads or branches, and then to show the expenditure on account of India in England in the lump or aggregate. Nevertheless the expenditure in England was for the most part not divisible under any new or separate heads, but really pertained to the several branches of the administration in India. Still it was not divided nor classified in our financial statements. Its amount is very considerable, being almost 12 millions, or more than 22 per cent. of our total expenditure. Though of course classified for official purposes, it has heretofore remained absolutely unclassified in our financial statements. One consequence has been this, that the expenditure shown separately in our regular financial statements has never represented the full and complete cost of many of our greatest departments, such as Army, Marine, Public Works, Interest, and others. That the arrangement is so far improvable seems to be beyond question. Last year I did present a supplementary statement calculated to meet the want. But this year I have prepared the statement with a combination of the figures derived from India

and from England; so that they now display the full cost of each branch, whencesoever derived and wheresoever incurred. The formal and principal statement being thus comprehensively prepared, supplementary statements are added, showing how much is spent for each head in India and how much in England.

In the third place the water rent paid by the landholders for the water obtained from the State canals, has been transferred from the heading of public works income to the heading of land revenue. The amount is important, being more than £500,000, or half a million. The public works income properly includes only sale proceeds of old stores and other items technically called recoveries, with which canal water rent has of course nothing to do; whereas this water rent is income derived by the State from its measures for improving the land by means of irrigation.

In the fourth place, the item of "allowances to village officers" has been combined with the expenditure relating to land revenue, and is no longer shown in a separate heading; and for it has been substituted a heading "Minor Departments" under which will be shown the charges of the trigonometrical, topographical, and geological surveys, and other Departments not readily assignable to any other existing head.

In the fifth place, from the heading of "Education, Science, and Art," we have eliminated, as just explained, the cost of the Survey Department. The surveys, though scientifically conducted, are executed in but a small degree for purposes of science and almost entirely for fiscal, engineering, and other practical purposes. On the other hand, it is of consequence to all those who are interested in the moral and intellectual progress of India that the true charge for education should be shown on the face of the statement. Heretofore the precise progress of this important item has not been perceptible from the statement; and never could be so, while other and foreign charges were mixed up with it. On this occasion, then, the figures which I exhibit are those for education alone.

In the sixth place, the abstract which the Council will remember having seen on former occasions under the title of "statement of estimated cash balances," has been superseded by an improved cash statement, exhibiting an abstract of the entire financial transactions of British India, and showing in a clearer form how for each year the total disbursements of all kinds are actually met, or, in other words, how the ways and means of each year are provided.

So much then for the improvements in the form of the Statements, and I must ask the Council to remember that by reason of these improvements, the figures I now give will not be comparable in detail with those I gave last year, though the ultimate result will be duly comparable.

After this preface (the length of which will be excused from regard to the importance of the topics), I proceed to the actual account of the past year 1868-69.

The receipts were £51,657,658, or more than 51½ millions sterling. The ordinary expenditure amounted to £54,431,688, or near 54½ millions, causing a deficit of £2,774,030, or 2¾ millions of receipts as compared with ordinary expenditure.

In my last financial exposition I explained that there would be a deficit in that year of income as compared with ordinary expenditure. The deficit was then estimated at £970,471, or 1 million. That estimate was necessarily incomplete, being based on eight months' actuals and four months' estimate; the last four months too constituting the most important and critical part of the year. Still the difference between the estimate and the result is very considerable; and I must, as briefly as possible, recapitulate the reasons.

These reasons have arisen in small part only from shortcomings of receipts on the whole. Exclusive of the railway earnings, the receipts in India indeed were £49,077,007, actual, against £49,288,700, of the regular estimate, the

difference less being £218,458, or ¼th of a million. I attribute this to the fact of the yield of the Malwa or Bombay opium having been over-estimated by us. The amount indeed taken was fair enough as compared with the actuals of the two preceding years; but the last four months of the year proved abnormally unproductive, and these were the months which did not come within the regular estimate.

The difference, then, between the estimated and the actual deficit was caused mainly by excess of expenditure. In the first place an item of £505,922 is brought about by charging in the accounts the liabilities of the Government in respect to the late Military and Medical funds, which existed chiefly for the benefit of the widows of deceased officers. The arrangements made on the transfer of the fund provided that assets should be gradually year by year appropriated by the Government, which was on the other hand to pay all the pensions and allowances. The transfer occurred during 1867-68. It commenced in that year, and came into full operation during the year under consideration, 1868-69. At the outset these pensions disbursed in England by the Secretary of State were not charged in the English expenditure, but were held by the Secretary of State in a suspense account, that is in the account current between England and India, and were so held at the time when my last financial statement was made. But inasmuch as the Secretary of State has ruled that the pensions are to be included in the expenditure in England, and as they now constitute a real charge against the revenues, we have deemed it best to include them (subject to the sanction of the Secretary of State) in the English expenditure once for all; and to finally adjust the account. The amount thus to be charged comes, as above stated, to £717,734, of which two-thirds relate to the year 1868-69, and the rest to the previous year 1867-68. Of this sum, £211,812 had already been provided for, being charged in the Madras accounts. The remainder, or £505,922, has now been added, and the whole charged in the English accounts.

Another cause was an excess of £492,004 on the expenditure on public works ordinary. This arose partly on works emergently undertaken in districts suffering from drought or famine. Owing to certain defects in the control of the Public Works Department, some portions of the grants for extraordinary works were made use of for the ordinary works, and the circumstance was not known to the Department when it rendered its estimate to me at the time of my last financial statement. The occurrence of this excess, and the fact of its not being known in time, undoubtedly indicated, as I have above stated, defects in financial control. Those defects have now been carefully searched out, and remedies are being applied, which will we hope prove effectual for prevention in future. Their efficacy will be tested by experience.

Then there was an excess of £186,346 in the Army expenditure, arising partly from the high prices of provisions in drought-stricken districts, and partly from field operations on the frontier. There was a nett excess expenditure again in the Civil departments, chiefly in Marine, Interest, and Miscellaneous, amounting in all to £350,541.

These several items, together with a few others with which I cannot detain the Council, account for the difference between the estimated deficit of one million and the actual deficit of 2¾ millions.

Besides the ordinary expenditure above alluded to, there was during the year an extraordinary expenditure of £1,370,613, or 1½ millions devoted in nearly equal proportions to irrigation, to Bombay special fund works, and to the purchase of the State Railway in South-Eastern Bengal.

Thus, the past year 1868-69 ends with a deficit of 2¾ millions; and this circumstance suggests the following observation. The Council will remember that in my last financial statement, I put the deficits of the three years 1866-67, 1867-68, and 1868-69, at 4½ millions. This was on the supposition that the deficit of 1868-69 would be one million, whereas it is now seen to be 2¾ millions. Thus the 4½ comes up to 6¼ millions. I then showed that there had been an

expenditure of 3½ millions on new barracks, which had been undertaken partly in the belief that they would not be treated as ordinary works, and would be excluded from the ordinary account. From that point of view the new barracks would have mainly accounted for the deficits. But now this can no longer be said. The deficits being 6¼ millions, of which only 3½ can be accounted for by the barracks, and are susceptible of special justification, it must be admitted that the remainder, 2¾ millions, are due to excess of expenditure accepted as chargeable against current income, and represent deficit pure and simple without such special justification.

So much then, in brief, for the actual account of the year that is passed 1868-69. I now have to advert to the year just expired 1869-70, the figures for which are derived chiefly from actual accounts and partly from estimates.

For 1869-70, then, the receipts are taken at £52,942,482, or 53 millions, which amount exceeds by £699,542, or ¾ of a million, the sum of £52,242,940, or 52¼ millions estimated in my financial statement of March 1869. The Council will remember that these figures will not admit of simple comparison with that statement by reason of the inclusion of the nett railway traffic receipts and of the receipts in England.

This increase of receipts has arisen notwithstanding failure of the customs and the opium to yield the amount estimated in the budget. The customs revenue was taken at £2,773,500; it is now expected to yield only £2,416,500, showing a difference less of £357,000, or about ⅓ of a million. The opium revenue was taken at £8,286,540; it is now expected to yield only £7,953,800, showing a difference less of £332,740, or ⅓ of a million. This falling off of opium revenue has occurred entirely in Bengal, where the price per chest was estimated at Rs. 1,330 or £133, while only an average of Rs. 1,199 or £120 has been realized. In the Madras and Bombay Presidencies, the rate of duty on salt has been raised from Rs. 1-8-0 per maund to Rs. 1-13-0 for the latter half of the year. Had it not been for this additional duty, the deficiency in the salt revenue would have been considerable. On the whole, it may be said that the salt estimate has been just maintained and no more. There have been also other items of deficiencies, which, together with the above two main items, bring up the gross deficiency of regular estimate below budget estimate to £899,222, or nearly one million.

The Council will then ask how, despite of this deficiency, is a nett result of increase on the whole arrived at? Well, it is arrived at as follows. There is an increase of £461,778, or nearly half a million in land revenue. This is caused partly by the adjustment in account of the accumulated proceeds of the sale of waste lands, the Government promissory notes in which these funds were invested having been cancelled, and debt to that extent having been reduced. Also in the Punjab and notably in the Madras Presidency, the collections of the revenue have proved more favorable than was expected. There is an increase of £71,943 in tributes; this arises from the partial capitalization of the political contributions payable by His Highness the Maharaja Holkar. The increase of £151,600 under the head of assessed taxes is entirely produced by the additional one per cent. income tax imposed for the latter half of the year, without which there would have been a deficiency. The yield of the additional duty is estimated at £350,000. There is taken an increase of £448,472 under the head of miscellaneous; this arises chiefly from adjustment of accounts consequent on the arrangements regarding the Police superannuation fund and the transfer to Government of the Bombay Medical fund. The army receipts show an increase of £181,760. These main items, together with some lesser items, bring up the total increase to £1,598,764, or over 1½ million. And thus on the whole the receipts of the year are now taken at an increase over the budget.

On the other hand, the ordinary expenditure in 1869-70 was estimated in the budget at £52,190,290, or nearly 52½ millions; it is now expected

to rise to £53,568,076, or upwards of 53½ millions, showing a difference more of £1,377,786, or 1⅓ million.

This excess has occurred notwithstanding that the expenditure on public works ordinary has been reduced to £5,040,395, instead of £5,834,160 provided in the budget, showing a reduction of £793,765, or ¾ of a million. There have been also various savings, such as £33,938 in the Post Office, £47,673 in the Electric Telegraph, £39,300 in Education, which, together with other items, bring up the total decrease of charges to £1,107,131, or over one million.

Here again the Council will ask, how comes it that, despite these reductions, the total charges and expenditure show an increase on the whole? The answer is that in several departments there have been increases over the budget estimate, some of which I must now explain.

In the two items of interest on public debt and on other accounts, there are increases of £73,516 and £124,925. This has arisen from the proportion of unclaimed dividends having been less than was expected: from the charging to our accounts of certain interest payments on account of the expedition to Abyssinia, which amount we had hoped to recover from Her Majesty's Government: and from the raising in India of a loan of two and a half millions for public works extraordinary. When the budget was framed, we believed it most probable that this public works loan would be raised in England, and during the latter half of the year, in which case instalments of interest would not fall within this year. Subsequently we received the Secretary of State's sanction to raise the amount in India, and we preferred to bring the loan out at an early period: consequently the payment of interest has fallen within this year.

The increase on forests of £35,084 leads to more than corresponding increase of revenue. The same remark applies to the increase of £123,870 in the payments for opium. This arises from the yield of the opium crop being better than was anticipated when my budget was framed, and consequently greater quantities of the drug being brought to the store-houses. Under the contracts with the cultivators, the quantity brought by them must be paid for. Such payments in a fiscal point of view are not indeed to be regretted, as they conduce on the other hand to enhancement of revenue.

The Police charge was estimated at £2,374,290, and has now risen to £2,440,900, showing an increase of £66,610. This difference, which would have been larger but for counteracting economies, has been caused by the delay in carrying out the abolition of the Police superannuation fund. The delay has arisen (notwithstanding this Council having passed the requisite law) from the difficulty of arranging the details with the several local Governments. The excess charge caused by the delay is neutralized by the consequent increase in the assets credited under Miscellaneous.

There is an increase of £381,882 in Marine. This partly arises from our having charged off finally as expenditure the sum of advances on account of the Mutla or Port Canning port fund, which it is prudent to treat as irrecoverable; and from our proposing, after protracted enquiry, to remit a portion of a long outstanding debt due by the Calcutta port fund to the Government. In this heading, too, is included a sum of £45,000 as a contribution by the Government of India towards the cost of the naval force which Her Majesty's Government is to maintain in the East Indian waters. This is a new charge, entered under instructions from the Secretary of State. It was hardly possible to provide for these in the original estimate, as there was no information at that time as to whether these charges would accrue at all, or in what year they would fall.

The increase of £448,728 in miscellaneous is mainly due to difference between the actual and the estimate of the loss by exchange on Secretary of State's bills and to the charge for the freight of stores from England. The charges of the Political department have increased by £152,290. This increase arises from

the payments and presents made to the Ameer of Cabul, which were inadvertently omitted from the estimate.

The increase of £303,972 in superannuation allowances arises from the adjusting of the accounts of the Military Fund already explained. When the budget was framed, the amount of these pensions (£396,292) was entered by the Secretary of State in his remittance account, and not (except the Madras portion (£120,000), which was entered in the estimates in India) included in the charges. But we have deemed it necessary (subject to the sanction of the Secretary of State) to take the remainder, £276,792, out of the English remittance account, and to charge the whole in the regular expenditure in England.

There is an increase of £122,831 in the army charges, of which £292,831 accrued in England for stores, furlough allowances, and pensions, and the rest in India, from the high prices of food and a variety of lesser causes which it would be tedious to detail.

These items, together with some others, for which I need not stop, bring up the total increase to £2,484,917, or 2½ millions.

I have now stated the causes of all the variations in estimate on both sides of the account. That the amount of these variations should be so large is matter for regret. One main cause is traceable to the difficulty of adjusting the accounts under a necessarily complex system dealing with a great variety of interests. And if it be difficult to adjust these accounts with certainty, how much more difficult is it to estimate beforehand what form the adjustment will ultimately take, and what its precise result will be. This year special efforts have been made to clear off all old accounts and to have the books as unencumbered as possible for future years. The subject has my unceasing attention.

The items of expenditure as above specified are taken from the combined figures, Indian and English. It may be interesting however to the Council to note exactly what has been the increase on the English figures taken separately under the old heading of "nett expenditure in England including stores." The amount then for this total set down in the budget, as taken from the Secretary of State's estimate, stood at £10,996,950, it is now expected to stand at £11,868,869, showing an increase of £872,119. This has arisen partly as already explained from the Military Fund payments (£396,292) not having been included in the estimates of charge, partly from the cost of stores for the different departments in India, and partly from the increased allowances payable under the new rules to civil and military officers.

This particular part of the expenditure is, as the Council knows, under the control of the Secretary of State, and so far no remark is required from me. I should say however that as regards the "stores," the Secretary of State only acts on behalf of the Government of India, like an agent, if the expression may be allowed. The stores are ordered by the India Office in London on indents received from the Government of India; and the Secretary of State's estimate is framed in reference to those indents. It sometimes happens that emergent indents are sent home from India within the year, and these must, *pro tanto*, disturb the estimate, and for that much of disturbance the Government of India is solely answerable. Such has been the case this year in reference to a portion of the stores. I must add that heretofore the financial control in India over the indents sent hence for stores from England has been defective, and measures are being adopted to render it more efficient in future.

Thus much on the details of the receipts and expenditure. In the budget it was estimated that there would be an equilibrium with a small surplus of £52,000. But the receipts being now expected to stand at £52,942,482, or nearly 53 millions, and the expenditure at £53,568,076, or more than 53½ millions, there is anticipated a deficit of £625,594, or more than ½ a million, of receipts below ordinary expenditure.

Besides the above ordinary expenditure, there has been an expenditure extraordinary of £2,616,743, or upwards of 2½ millions, on reproductive public works during the year, such as irrigation, State railways, and on Bombay special fund works.

Instead of an estimated equilibrium, then, the year has ended with a deficit of a considerable amount. In some respects, the adjustment of accounts has improved the figures on the receipt side; while in some respects it has made the figures worse on the expenditure side. If there are windfalls on the one side, there are unexpected drawbacks on the other. Also some share in the responsibility rests with the home authorities. But after allowing for all these considerations, I must fully acknowledge a deficit, for which we are clearly responsible, and regarding which I desire to offer the following observations.

As already seen, we suffered a heavy disappointment in respect to our estimate of the opium revenue on the Bengal side. This arose from a fall in the market price, which fall again is believed to have been caused mainly by the extension of opium cultivation in China itself. We were indeed aware that such cultivation was being in some degree extended, but there was no information at that time to lead to the apprehension that this extension would spread so much as it now appears to be spreading. The further information since obtained of the extension, was not then available. For two years and more previous to the framing of the estimate, the prices had ranged at very high rates which indeed were well sustained up to the eve of the budget being produced. There was no known fact to warrant the rate being taken lower than what was then actually ruling. Still on general and prudential considerations, we took the price at an average of the realizations of the past three years, which brought out a rate less by Rs. 50 or £5 a chest less than what we were then receiving. This estimate has indeed partially failed by reason of events in the interior of a remote, half civilized, and comparatively unknown country like China, the nature of which circumstances is even now but vaguely ascertainable by us.

Then the Customs duties have fallen not only below the budget estimate, but also below the actual realizations of the two preceding years. There has been, as the Council knows, a depression of trade not only in India but in many other countries; and this has mainly caused the falling off in our Customs. But when the budget was produced, there was not a single fact to indicate that such a depression was about to set in. Up to that date the Customs revenue had been increasing yearly for several years; that very year they both increased as was proved by the latest statistics and fiscal returns. The authoritative commercial reports up to date, though noticing fluctuations, and not in all respects sanguine, were yet on the whole favorable and hopeful. There had indeed been drought in some parts of India, but that had not up to date affected trade or Customs, and the prospects of the season had recently improved. There had also been some modifications in the valuations of the tariff in favor of the merchants, but this was allowed for in the estimate.

From the several financial statements made in this Chamber, the Council knows how constant has been the increase in the State income of India. However, not even that normal increase was estimated for. The revenue was estimated at just the sum which had been received in the preceding year, and no more. A slight increase only was taken on account of additional taxation. Does not this look *primâ facie* as if the estimate was moderate?

These causes (which were, as I contend, misfortunes hardly to be foreseen), together with lesser circumstances with which I need not now trouble the Council, threatened the Government of India with the prospect of a serious deficit. How has this prospect been met? Why, by increasing resources, that is by additional income tax, and additional salt duty on the one hand, and by reducing public works ordinary expenditure on the other. Moreover there have been numerous savings and retrenchments carried out in all the provinces of India (for which the general finance is much indebted to the cordial exertions of the several local Governments), which it would be tedious to specify, but of which the total effect is estimated at £200,000. The condition of the year's finance

has been bettered by the above measures to the extent of £530,000 on the receipt side and £993,765 on the expenditure side, the total improvement being represented by £1,523,765, or 1½ million.

When introducing into this Council in November last the Bills for extra taxation, I stated that every "effort would be made to destroy the remaining deficit, to run it hard, to break its back so to speak." This promise related of course to receipts and expenditure in India. The figures show that it is in a fair way of being fulfilled.

These last figures, however, are not altogether actuals, but belong to the regular estimate. In India these regular estimates have sometimes been so far falsified by results as to have acquired an ominous significance. On previous occasions the practice has been to frame these regular estimates on eight months' actuals and four months' estimates. In some respects the actuals did not extend to eight months, but only to seven or even to six. This method left a large margin for uncertainty, for the four months of estimate were, as I have explained once to-day, about the four most important in the year, and the very ones when the financial transactions were the largest. The regular estimate which I now present, however, ought to be of a better kind, for it is based on eleven months' actuals for nearly all the receipts and for all civil expenditure in India and ten months for army, marine, and public works; leaving only one month, or in some cases two months, for estimate, which estimate is based again on the actuals of the last months of former years. But even for the last month we have obtained actual data for some important branches on the receipt side especially.

Another cause of the uncertainty in the regular estimates has been the adjustment of many items in the twelfth month. And this cause may perhaps to some extent operate to throw out parts even of the regular estimate I now present. We have striven to ensure these adjustments being made more and more regularly month by month; so that the pressure may cease to be thrown on the close of the year.

Still after allowance shall have been made for all that can fairly be said in defence of our estimates and accounts,—the recurrence of deficits in time of peace, and the discrepancies between estimates and results which have so frequently happened, do compel us to search for and remedy whatever defects there may be in our system. Despite the many improvements that have been effected, the result proves that some defects must still remain. Two main defects I have above indicated—one of which was vital certainly. They have been, as we hope for the most part, remedied. We shall strive to make the remedy more and more complete after each year's experience.

Over and above these, however, there doubtless are lesser defects. Addressing this Council in November last, I said "we must examine more thoroughly than heretofore the monthly statements of actual receipts * * * we have such an examination now; but we must have it more strictly in future; we must check our financial conclusions more immediately by actuals up to the latest day; we must base our estimates more strictly on the actual results up to date, and less on general conclusions."

I need hardly add that we are acting and shall act more and more closely on these views.

Having thus dealt with the years 1868-69 and 1869-70, I arrive at the third and most important part of my exposition, namely, the budget estimate for 1870-71.

The receipts are taken at £52,327,755, or 52⅓ millions, to be compared with the £52,942,482, or 53 millions estimate for the year just closing, 1869-70.

The land revenue estimate is an aggregate of the estimates received from the local Governments, which have not been materially departed from in any case. There is a decrease of £515,646 as compared with the previous

year, of which the return was swollen by the inclusion of the waste land receipts and the collection of some arrears. The effects of the drought of 1868-69 have been felt throughout 1869-70. The stocks of grain in some parts of the country are believed to have become exhausted. The rains of last season, though somewhat delayed, were ultimately abundant. In many provinces the harvests have been good. In some districts, however, there are still fears. On the whole, the advent of the ensuing rains must be looked for with some anxiety.

The decrease of £28,070 under tributes arises from the capitalization of the Holkar tributes in 1869-70 already alluded to.

The forest revenue shows a continued increase, more than balanced, however, by increased cost on the expenditure side.

Under excise we venture to expect a small increase of £39,300.

The item of assessed taxes I shall reserve for further mention hereafter.

For the Customs we have only taken £2,416,500, being the same amount as that which we have received in the year just expired, during which so much commercial depression has prevailed. That the present yield should not be greater than it is, must be regarded as an unfavorable indication respecting the condition of the people of India. In some places the inhabitants are impoverished by the late drought, or are still apprehensive about their crops; and are unwilling to buy European cloths or other things comparatively luxuries, until they are sure of their food; all which circumstances cause the up-country markets to continue slack. Still in most parts of India the people are advancing in prosperity as much as ever; and regard being had to this consideration, a revival of trade might be hoped for. Again, there have been fluctuations in the trade: January, a very important month, turned out badly; but February was better. March, the month just over, has been a little more favorable. On the other hand, the reports issued by the Calcutta Chamber of Commerce have been and still are unfavorable, and the opening of the Suez Canal has caused some forestalment of imports, and consequently of duty. I trust that things will not become worse than they are, and that we shall receive at least as much in the year 1870-71 as we have received in 1869-70, but I know no fact which would justify me in raising the estimate.

We have carefully considered the expediency of reducing or remitting the export duty on rice exported from India and from Burma. This branch of trade was for some months much depressed, but has of late shown signs of improvement. The depression, however, arose, as we believe, from other causes besides the duties. The prices of produce are rising rather than falling. The demands in China and Japan seem likely to become more brisk; indeed, scarcity is understood to prevail in some parts of Japan. Though fully sensible of the objections which can be urged against these duties, yet looking to the circumstances of the case and to the financial exigencies of the time, we have decided not to propose any change in the duties at present.

We propose to remit the export duty on shawls and on a few insignificant articles; and on the other hand to include some others in the tariff, and to levy the duty on galvanized iron *ad valorem*. These modifications are not expected to cause any loss of revenue. The shawl duties have operated as virtually transit dues on the shawls from Cashmere, and as regards the British Indian shawls, it is well that they should not be weighted in their competition with the shawls of other countries.

In my last statement I alluded to the progressive increase in the foreign trade of British India, and I stated that the sum total of value had risen from 95 millions in 1866-67 to 101 millions in 1867-68. Since then the ascertained trade of 1868-69 has amounted to 106 millions in value. But after some years of satisfactory progression, the year 1869-70 is almost certain to prove one of retrogression. We now possess the complete returns for nine

months of that year, and they show a decrease of 8 per cent. in value and 5 per cent. in quantity as compared with the corresponding period of the preceding year. That the comparison as regards value should be less favorable than that as regards quantity is accounted for by the fact that there has been a reduction of the valuations by tariff. Still there is a falling off of 5 per cent. on the whole; and this is specially perceptible in some important staples of import, such as piece goods and metals, and of exports, such as cotton, rice and indigo. One important item of export, namely jute (fibres) has kept its place as well as ever. The cotton export of 1868-69 amounted to 700,000,000 lbs., or $1\frac{3}{4}$ millions of bales; but the quantity for 1869-70 will prove considerably less. In 1868-69 there were $11\frac{1}{2}$ millions of lbs. of tea exported; the quantity for 1869-70 seems likely to prove as great. In 1868-69 there were 48 millions of lbs. of coffee exported; the quantity for 1869-70 will certainly prove less. The causes of the depression of trade must doubtless be sought for in other countries besides India. But they have been aggravated by the drought and distress which have prevailed in some parts of India itself.

The salt revenue has been taken at £6,177,370, an amount considerably over that of the previous year, chiefly because the increased duty in Madras and Bombay (5 annas per maund) is to operate for the whole of 1870-71, whereas it operated for only half of 1869-70.

For the opium revenue we have taken £6,922,281, of which £4,905,281 pertain to Bengal and £2,017,000 to Bombay. The Bengal estimate has been taken at Rs. 975 or £97-10 per chest on 49,000 chests. For the first three quarters of the year, the provision is, with the exception of a small deficiency of 1,104 chests, actually in store. For the last quarter, from the information given by the Local Government, we trust that the number of chests is tolerably certain. To provide it we ought to sell 52,000 chests in 1871, a supply which we hope to be in a position to bring forward, but which is certainly not likely to be much exceeded. The real doubt is as to the price per chest, the calculation of which solely depends on forecast. The price, as the Council know, averaged Rs. 1,379, or £137-18 per chest in 1868-69. In 1869-70 it has averaged Rs. 1,199 or £119-18. It has fallen with an unfortunate regularity from Rs. 1,324 or £132-8, at the beginning of the year, to Rs. 1,093 or £109-6 at the close. So far as we can judge from China advices and from local prices, the tendency is downwards. The Government of India possesses now a mass of information, which, though not always clear, does in the main show that the cultivation of the drug is increasing, and is likely to increase further, in China itself. So far as opinion goes, nearly all authorities believe that the opium trade of India with China will be subjected to a degree of competition not heretofore experienced. Taking all these things together, I anticipate the possibility of a further fall in prices, and have considered the rates to which prices have fallen within recent experience. They have gone as low as Rs. 900 and 850 a chest. Though hoping that they will not again fall so low, yet I consider that no estimate of a higher average than Rs. 975 or £97-10 a chest would be safe; and a reasonably safe estimate we must have. So also with the Malwa opium, having regard to the manifold fluctuations of the Bombay market from year to year, even from month to month; and to the probability of its sympathizing with any fall on the Bengal side, I do not consider that any estimate much over 2 millions would be safe. We are indeed receiving $2\frac{1}{3}$ millions (£2,357,000) for the year just closed, which quite fulfils the estimate. But then we only received £1,800,000 in the preceding year, when circumstances were more favorable than this. The estimate of the current year, though realized at last, has been a constant source of anxiety. The present crop is reported to have been seriously injured by unfavorable weather. Judging by all known circumstances, I should fear that a falling off may shortly be looked for. So recently as November last, we were confidently assured by the authorities at Indore that we should not realize even two millions in the year just closed.

On the whole, it will be seen that our opium estimate stands at £6,922,281, or $6\frac{3}{4}$ millions, being less by £1,031,159, or one million, than the receipts of the previous year; while our expenditure is expected to rise by £164,910, making a total deterioration under this head of £1,196,069.

It will be observed that a decrease of £1,604,600, or $1\frac{1}{2}$ millions under stamps, is balanced by an increase of £1,692,700 under law and justice. This represents the transfer of the receipts of judicial stamps (now levied under the new Court Fees Act) from the one head to the other.

The large decrease of £677,298, or $\frac{2}{3}$ million under the head of miscellaneous, arises from the fact of there having been extraordinary receipts, commonly known as "windfalls," in 1869-70 which are not expected to recur.

The railway receipts net are taken at £3,125,258 at an increase of £211,084 over the year just passed, that is £6,795,058 gross earnings less £3,669,800 working expenses, the traffic being represented by seven millions of tons and fifteen millions passenger journeys; and all this on 4,840 miles of open line. These are high figures: if realized, they will indicate a satisfactory progress of railway traffic; they are rendered by the Public Works Department. Seeing that some 600 miles of new line are to be opened in the year, increase of traffic may be looked for; but then there will be increase of working expenses. On the whole, this item must be regarded as necessarily uncertain, as being dependent on traffic the growth of which we cannot exactly foresee.

I now turn to the expenditure side, and shall notice together firstly the items of the increase; and, secondly, the items of decrease.

There is an increase of £270,032 in interest. This increase is due to our having to pay a full year's interest on the loans of 1869-70, on which only half a year's interest fell to be paid in that year; to a large amount of interest properly pertaining to 1869-70 being thrown forward to 1870-71, owing to the late arrival of the last English mail, and to a new loan to be raised this year, the particulars of which I shall explain presently.

There is an increase of £117,606 for forests, which is almost met by the corresponding increase of revenue. Also there is, as already stated, an increase of £164,910 in opium, owing to extension of cultivation, and of £27,944 in excise for the purchase of opium for home consumption: these items also tend directly to increase of revenue. Similar remarks apply to the increase of £103,299 in salt, attributable chiefly to the arrangements for the manufacture of alimentary salt at the Sambhur lake in Rajpootana and in various parts of North-West Provinces and of Oude, all which measures are connected with fiscal improvement.

The increase of £178,698 in law and justice is due chiefly to the transfer of discount from stamps, the revenue from which is now to be credited as law and justice receipts, and to the charges for the service of processes, which with the corresponding receipts are now entered in the imperial accounts.

The increase of £66,498 in education will not be regretted.

The increase, £126,681, in superannuation allowances is due to the reductions in the police (which involve gratuity payments) and to the anticipated operation of the rule for the compulsory retirement of public servants at the age of 55 years.

There are small increases under several civil departments, such as land revenue, ecclesiastical, medical services. These are inevitable, as they are brought about by the progressive scale of salaries so frequently allowed of late. In recent years it has been thought more economical to sanction gradual progress towards a maximum than to allow the maximum at once. Of course, this practice, however good in itself, does at first cause the expenditure to rise slightly from one year to another. The increase in law and justice arises partly from a transfer of charge from the head of stamps, which department shows a corresponding decrease.

An increase will be observed of £56,181 for the Electric Telegraph department, not counterbalanced by any increase of receipts from this source. This arises chiefly from stores not having been sent out from England during the current year, so that an extra supply must be paid for in 1870-71.

The increase of £275,268 in railway charges relates chiefly to interest, and is due to more capital being raised in England for the prosecution of the works.

The increases of all kinds amount to £1,496,219 or 1½ million, apparently a large sum. But the above analysis shows that £678,964, the aggregate of the increase under forests, excise, assessed taxes, salt, opium, and railways, is absolutely necessary to be laid out in order to bring in a more than corresponding return of revenue. Again, £452,894, the aggregate of the increase, under interest, telegraph, and superannuation allowances, is inevitable, and under existing rules is not preventible by any action we could take. Thus the sum of £1,131,858, or nearly three-fourths of the total increase, is demonstrably indispensable. To this category the increase for education forms, of course, a special exception.

On the other hand, among the decreases of expenditure, there is the item of £129,633 under interest on service and other accounts; this arises from cessation of payments on the Police Superannuation and Medical funds and to the Presidency Banks for temporary advances.

There is a decrease of £120,936 in the Police department, of which however, a part is owing to the reduction of pay from gross to nett upon the abolition of the Superannuation fund, the rest being due to reduction of establishments. The decrease of £481,009 in the Marine department is mainly owing to the large adjustment in 1869-70 of irrecoverable advances. Here also is included a sum of £70,000 as the contribution of the Government of India towards the maintenance of naval squadron to be kept up by the Admiralty in the Indian seas as already explained.

In the army charges, there is an important reduction of £731,551, or ¾ million: the total being lowered from £16,476,892 to £15,745,341; this is partly nominal, the expenditure in England in 1869-70 having been, in some respects, abnormal. But about two-thirds are real, brought about chiefly by the reductions in the general staff in India, and in the European cavalry and infantry, as sanctioned by Her Majesty's Government after some correspondence with the Government of India. We have been only able to take a very small decrease on account of the reductions in the artillery and the native army, regarding which the recommendations of the Government of India are under the consideration of Her Majesty's Government in England. After setting off the diminished recoveries which we expect, the net estimated saving in the army is £554,016, or ½ a million, the net expenditure for the army being estimated at £15,009,116, or just 15 millions, a lower sum than has been paid in any year since 1863-64.

The grant for public works ordinary exhibits a reduction of £1,041,995, or more than a million; the amount for 1870-71 being £3,998,400 against £5,040,395 in 1869-70 and £5,834,160 in 1868-69. Thus in the course of a year, we have lowered our grant by £1,835,760 or more than 1¾ millions, or 31½ per cent. on a total of about six millions. The necessity for such reduction, which must of course retard the completion of many useful works, is much to be regretted. But financial exigency is imperative.

I should add that out of the above grant of four millions, £658,955 or more than ½ million represents the expenditure on the new barracks for the European troops.

The total of these decreases amounts to £2,883,669, or nearly 3 millions. This for the most represents real reductions of establishment or of works; and y it may be measured, to some extent, the efforts made by the Government of India to meet the financial exigency of the time.

The Council—remembering that retrenchments made on paper have sometimes failed to be carried out, and that reductions in estimate are sometimes found to be not realized in actual accounts—may ask me how I can affirm that the above large amount of reduction will really be effected? To this I should answer that the largest part of the reduction, that relating to public works, is so far certain in that the disbursements depend solely upon the grants. No more than what has been granted will be disbursed, and the orders in detail regarding the grants have been sent already to the several Local Governments. So with the army reductions; those which I have allowed for have actually been sanctioned by the Secretary of State, and the orders have gone to the proper authorities: some have even been carried out,—for instance two cavalry regiments have actually embarked for England. Some further reductions are almost certain, but we have ventured to allow for them only the sum of £70,000. So with the interest reduction, the charges in question have actually ceased. Again, as regards the police reduction, a part of it is quite certain, nothing more being needed than orders to the audit department; and to the rest of that reduction the Local Governments have actually signified their agreement.

The increases being balanced against decreases, the result is an expenditure of £52,164,315, or 52⅕ millions, against £53,568,076, or more than 53½ millions of the preceding year, with a net reduction of £1,403,761, or nearly 1½ million of expenditure.

In framing the estimate I have not forgotten that there are certain pecuniary claims on the part of His Highness the Náwab Názim of Bengal, still pending. I cannot at all foresee whether they will be found sustainable. We have decided that we are not justified in making any budget provision in this year on this account.

After this analysis of the receipts and expenditure of the current year now commencing, I must ask the Council to revert to the heading of assessed taxes which I reserved for separate consideration. We have taken for this the sum of £2,180,000 or nearly 2½ millions sterling. The additional rate of one per cent., levied by Act XXIII of 1869, in order to bring the one per cent., rate up to 2 per cent., expired on the 31st of March. As the law stands then at this moment, the one per cent., is all that is leviable. According to the experience of the year just over, 1869-70, the yield of one per cent., would amount to £700,000. Now, if we were to take that amount only instead of the £2,180,000 now taken, there would be a difference less of receipts to the extent of £1,480,000, or 1½ million, and this difference would cause a deficit on income below ordinary expenditure of £1,316,560, or 1⅓ million. As the Council so well knows, we could not at this time appear before the public with a deficit in our budget. At least we could not adopt such an alternative, while any legitimate or reasonable resource remained to us.

My exposition of the estimate of the receipts will have proved to the Council that the revenues generally are flourishing, though not quite so prosperous as they sometimes are. But in one important item, opium, there is a serious falling off, mainly owing to events and circumstances in China.

I have shown to-day what large reductions of expenditure have been effected, always with hard effort, and sometimes with much sacrifice. Then I have shown how inevitable are most of the increases of expenditure. Still after reckoning the sum of these as a set-off, the net result is a decrease on the whole of nearly 1½ million (£1,403,761) of expenditure. I by no means intend to imply that reduction has reached its final limits; we shall continue to strive for further reduction more and more. But it is impossible to say at what time or on what date additional reductions may take effect. Indeed the incessant demands made on the treasury for countless objects of reform and improvement are too well known to the Council to require recapitulation here. Meanwhile we must take the receipts and expenditure as they are expected to

stand. And with a deficit of 1⅛ million distinctly apparent, some recourse to additional taxation, some resort to means of enhancing income, becomes altogether unavoidable. Considering the actual deficits which have occurred in past years, and the circumstance that the year just over is expected to close with a substantial deficit, instead of the equilibrium that was expected, and this too despite all the exertions that have been put forth, we regard it as essential to the due administration of the finances and to the maintaining of the financial credit of the country, that yet further exertions should be made. Moreover, this is, if possible, even more needful than ever, since, as shown in my last financial statement, the public credit is to be pledged for the construction of extraordinary public works of a character remunerative to the State and beneficial to the people.

We are, therefore, compelled to propose, however reluctantly, to raise the income tax to 6 pies in the rupee or 3⅛ per cent., and to apply to this Council to vote us the power of thus covering, by additional taxation, the deficit which must otherwise be presented.

As explained in my last financial statement, there are great difficulties in immediately adding to our resources by any other means than direct taxation. If then the revenues are to be immediately enhanced, this can only be effected by the help of the income tax.

Such then is the proposal which I have, on behalf of the Government of India, to make to this Council, together with a request for leave to introduce a Bill for the imposition of an income tax, at the rate of six pies in the rupee.

I need not repeat the arguments used in my last financial statement regarding the imposition of an income tax in India. It is with regret and reluctance that we bend to the necessity of raising the rate from 1 to 3⅛ per cent. within so brief a period. But the recurrence of deficit at this time cannot otherwise be prevented.

I have stated the rate at 3⅛ per cent. In England, as the Council knows, there is no percentage rate adopted for this purpose; the duty being levied at so many pence in the pound sterling. We have determined to adopt, as in England, a poundage in place of a percentage rate. Following that principle, I have to propose that the duty be for the future taken at so many pies in the rupee: two pies would be assumed as the approximate equivalent of one per cent., four pies of two per cent., and so on. I should add that this mode of rating the duty will be somewhat (though very slightly) in favor of the revenue.

But if the rate is to be thus raised, then the principle of rough assessment by classes in the schedule which regulates the existing tax, can no longer be adhered to. A system which may have worked sufficiently well while the rate of duty was low (that is, one per cent.) will no longer work satisfactorily when the rate becomes higher. When people come to be assessed to 6 pies in the rupee income tax, they will assuredly demand a more precise mode of assessment than that which now prevails. The tax-payer will require that the assessment be made upon some fair estimate of his particular income, and will not be content to be assessed upon an average derived from the maximum and minimum incomes of a class. Now, if anything like an assessment on estimated income of each individual tax-payer is to be attempted, returns of income must be called for from the tax-payers. Or even if with the lower classes of income the Collector may be able to dispense with the returns, he must clearly have the power of calling for such returns in all cases of more considerable income, and with the higher classes of income he should be obliged to call for such returns. The new Bill, then, which I have to lay on the table provides for the assimilation of the procedure to the more regular methods of assessing income tax: care having been taken to render it as simple and easy as possible, consistently with the important object in

view. If the Council shall grant me leave to introduce the Bill, I shall have further opportunity of explaining its provisions.

Having thus explained the principle of the tax, I must advert to the method by which the estimate of its probable yield has been framed. As the Council will have observed, the amount is taken at £2,180,000, of which £2,100,000 is assumed at the known rate of £700,000 for each one per cent., and £80,000 for the gain by the substitution of 6 pies in the rupee for three per cent. I say known rate, inasmuch as the regular estimate of the one and a half per cent., income tax of 1869-70, based on data of eleven months' actuals, gives £1,051,600, which again gives £700,000 for one per cent. This seems a sure foundation to proceed upon, especially as it is known that in 1869-70 the tax was exposed to disadvantages which will not recur. Some portions of the tax collected in the first month had to be credited to the preceding year; the extra one per cent., imposed in the middle of the year, could not be fully realized at first; some arrears are indeed known to be outstanding. This consideration justifies our expecting more than £700,000 for one per cent., and our assuming £700,000 for each one per cent.; though otherwise it might be apprehended that each ascending step in the percentage would yield somewhat less and less. The estimates of the local Governments embodying what they intend to demand and collect, framed for a 1⅛ per cent. tax, amount in the aggregate to £1,103,740, which at three per cent., would yield £2,287,480, which is more than what we have ventured to take. Then we have compared the yield of the first income tax of 1860. The only year in which that tax was fully collected was 1861-62, when it produced £2,054,696, or just over two millions at four per cent., on incomes down to Rs. 500 (£50) and at two per cent., on incomes between Rs. 500 and Rs. 200 (£20). What portion of this belonged to the division between Rs. 500 and 200, I cannot state; but it must have been small. On the whole it may be said that we now expect to get from a three per cent. tax rather more than what we got from a four per cent. tax ten years ago, showing an expected improvement of 25 per cent., and more. This seems a reasonable expectation, when it is considered not only that the income of the country has greatly increased within the ten years, but also that our administration of these kinds of taxes has improved. As a proof of the improved administration, I may observe that in 1864-65 there was a three per cent. income tax like the one now proposed. It yielded £1,300,000, which gave £433,000 for each one per cent. But then the assessments made at the outset had been continued without alteration from year to year, and the administration was less strict than it now is; though it is still far from being as strict as it might be. But we have seen that in 1869-70 one per cent. yields £700,000 for one per cent., showing an improvement of 61·7 per cent. over 1864-65.

As to the duration of the new income tax, I can make no promise whatever. It is our earnest hope that the tax may not last beyond the current year 1870-71, at its present rate. But the realization of any such hope must be entirely dependent on circumstances.

Such then is the budget for 1870-71, the estimate of receipts amounting to £52,327,755 or 52⅛ millions, and of ordinary expenditure to £52,164,315 or 52¼ millions, leaving a small surplus of £163,440, a balance which hardly amounts to more than an equilibrium. We bear in mind that the above estimated surplus is very small; smaller than we should wish it to be; smaller indeed than it ought to be. But then what difficulties, what sacrifices we have had to undergo, in order to make it even the little that it is! The Secretary of State has enjoined us to provide a substantial surplus if we possibly can. His Grace, commenting on my last financial statement, wrote thus:—"In previous financial despatches to the Government of India, it has been stated that your estimates should be so framed as to show a probable surplus of from half a million to a million sterling; in that opinion I concur* * * I have already called your attention to army charges* * * and I shall hope to find that you have been able to effect reduction of expenditure also in some other branches of adminis-

tration. Unless this can be done, it is clear that it will be necessary to devise some means of increasing the annual income, or otherwise a failure in the full estimated receipt from opium, the loss of any portion of revenue from unfavorable seasons, or any extraordinary military charges, would certainly convert the estimated surplus into a large deficit."

My exposition to-day will have shown how hard we have striven to act up to these instructions. We have reduced the army charges and other expenditure. We have devised means of increasing the annual income. But we have not yet been able to provide a surplus of half a million in the estimate. To effect this, we must have proposed a greater reduction of expenditure than what we can surely reckon on effecting within the year; or else we must have proposed additional taxation even beyond the proposals I am announcing to-day; and the difficulty of doing this is manifest. But though we are unable to provide the surplus to-day, the necessity of such provision within the earliest practicable time is constantly present to our consideration. Until this is fully effectually provided, I shall not be able to affirm that our finance is in a satisfactory condition. As yet I can only express my hope that it will be found to be improving.

Besides the ordinary expenditure, we are prepared for an expenditure of £3,062,300, or over 3 millions, on public works extraordinary, to be provided for by loan, of which £1,732,500 or $1\frac{3}{4}$ millions are for irrigation works, and £1,229,800 or $1\frac{1}{4}$ millions for State railways. The irrigation works relate to projects in Bengal, in Madras, in Bombay, in the North-West Provinces, in the Punjab, in Oude, and in the Central Provinces.

The principle of constructing some portion of the railways in India by direct State agency instead of through companies, has been further affirmed during the year by the Secretary of State. The lines on which the above expenditure is to be incurred, are the Lahore and Peshawur Railway, the railway between Delhi and Jyepore passing through the salt-producing districts of Rajpootana. Within the year it has been decided that the Bombay special funds works shall no longer be classed as extraordinary, but shall be included in the category of ordinary works: they are, therefore, not included in the above description. I may here note that the purchase of the property of the Elphinstone Land Company will not form any charge to the State.

I may here add that negotiations are in progress with the Maharaja Holkar, whereby His Highness will provide funds at $4\frac{1}{2}$ per cent. interest for the construction of a railway from Malwa to join the trunk line of the Great Indian Peninsula Railway.

A desire has been often expressed that an audited account should be promulgated annually of the sums raised for, and spent on, public works extraordinary. Such an account is now being prepared, and is to be kept up from year to year. We have decided to commence the account from 1869-70, being the year when the classes of works to be reckoned as extraordinary were for the first time defined, and when the raising and the expending of money for those purposes were regulated on that principle.

I have now to advert to the loan arrangements of the year 1870-71.

It will be recollected that in my last financial statement I announced a series of loans aggregating five millions, of which one million consisted of renewal of old debt, $3\frac{1}{2}$ millions of loans for public works extraordinary, and $\frac{1}{2}$ a million to recoup the cash balances for advances made to municipalities. The renewal of one million has been effected within the just expired year. Of the $3\frac{1}{2}$ millions for public works extraordinary, 2 were to be raised in India and $1\frac{1}{2}$ in England. The $\frac{1}{2}$ million has been raised in England, instead of being raised, as was first intended, in India.

In my last financial statement, however, I mentioned that the cash balances are not even yet restored to their due proportions, and I added that "if, as

the year proceeds, the accounts shall be unfavorable, some additional temporary resource will have to be provided." Within the year, the Government of India has accepted an offer of the Maharaja of Puttiala to invest £400,000 in our public securities. This having now been treated as permanent debt, we have decided to consider it as having been raised for public works extraordinary.

This sum, added to the sums raised on account of the three millions and a half loan which were slightly in excess of that amount, brings up the total to upwards of four millions.

Out of the four millions raised as above for public works extraordinary, and held at the credit of this branch of the public works department, £2,616,743, or more than $2\frac{1}{2}$ millions, are being spent in the year, leaving £1,383,257, or, nearly $1\frac{1}{3}$ million, balance in hand due by the loan department to the public works, and to be carried on to credit in the State account of the works.

So much for the year 1869-70; then for the year 1870-71, the proposed arrangement is as follows.

As I have already explained to-day, the proposed expenditure during the year on public works extraordinary amounts to £3,062,300, or just three millions to be provided for by loan.

The Secretary of State has intimated his intention of raising two millions in England, leaving us to borrow in India such sums as may be found necessary to carry on the works on the scale intended. But, considering that we have as shown above, a balance in hand of loan money to the sum of $1\frac{1}{3}$ millions from 1869-70, we are unwilling to borrow if we can help it. And in the present state of our cash balances, there is no apparent necessity for bringing out any loan in India at all. It is not then our intention to raise any funds by loan until the autumn at least. By that time, the prospects of the year will be more clear, and our position in respect to ways and means can be reviewed, and a further decision as to the necessity or otherwise of raising any loan can be arrived at. But it is our hope (as at present informed) to conduct the finance of the year without further loan.

I should here add that in December last, we decided that the holders of the 5 per cent. public works loan of 1855, amounting to two millions, which fell due for repayment on the 31st March, should have the option of either receiving payment in cash, or of accepting fresh stock of the four and a half per cent. loan. The returns are not quite made up, but about $\frac{7}{8}$ of the stock has been or is being tendered for conversion; so that it may be said that our terms have been generally accepted. This indeed is only what might have been anticipated, inasmuch as for some time past the $4\frac{1}{2}$ per cent. stock has been quoted at or above 2 per cent. premium.

Such being the provision made for the ways and means of the year, I have to explain the returns of the cash balances. In my statement of last year I explained what a variety of large items, over and above the revenues and expenditure proper of the Government, contributes to make up this great account. It has been found, however, that the old form of statement was in some respects obscure, and an improved form has been devised, as the Council will see, according to which the figures are exhibited for the years 1868-69, 1869-70 and 1870-71. As the returns received from England often affect those obtained in India, both categories have been combined in this statement. I shall just glance at the main features of the statement for 1870-71, so as to make the technical designations intelligible. The headings of ordinary income, of ordinary and of extraordinary expenditure, are taken from the budget of the year as to-day presented. The heading of deposits and advances comprises the finances of the local funds, the funds of the civil services, the judicial deposit branch, the advances for local works and for a variety of purposes. The heads of local remittances and inter-provincial and inter-departmental transactions represent the unadjusted expenditure of India, and are interesting items. The remittance account between England and India comprises a large

amount of civil service pensions, and a variety of petty advances in the military branch. There are also a good many unadjusted items under this head. The bills of exchange represent the amount remitted from India annually to meet the expenditure in England. The railway capital heading means the amount raised in England for the construction of railways in India. Here it may be observed that year by year we are spending more in India than we raise in England; this arises from the fact that in previous years we spent less in India than we received in England, and that we have now to make up the difference. The last item, namely, "borrowed," must be taken together with the item of "debt paid." This year we are to borrow 5¾ millions (£5,808,770) but then we are to pay off old debt of 2¼ millions (£2,220,470), which leaves £1,830,000 for the Elphinstone property at Bombay and £1,758,300 or nearly 2 millions new loan in England. In all £3,588,300 or 3½ millions will be added to our debt.

I must now advert to the amount of the cash balances. According to my last statement we hoped to commence the year just closed, 1869-70, with a cash balance of £ 11,917,473, or close on 12 millions, but we really did commence it with a balance of only £10,175,804, or less than 10½ millions. In case this discrepancy be attributed to some fault in the Account department, I should, in justice to that department, explain that such is not the case; for that part of the statement which depended on the Account department turned out correct enough; the discrepancy occurred in that part of the estimate for which the Government of India is responsible. The difference indeed arose solely from the income of the year 1868-69 being less, and the expenditure more, than was anticipated. The causes I have already explained to-day in the earlier part of this exposition. Again, in my last statement the cash balance at the close of the year 1869-70, was estimated at £11,627,310, or 11½ millions. It is now expected to amount to £13,644,859, or more than 13½ millions. The Council will naturally ask, how it is that, notwithstanding the financial troubles of the year, we end with more money in the treasury than was expected? The answer is, that out of the 3½ millions borrowed for public works extraordinary during the year, we have still one million in hand, and that there was the Puttiala loan besides to the amount of £400,000. Also the accident of the first English mail of last month, March, not having reached Calcutta till just after the close of that month, has caused a quarter of a million of bills and drafts, which were expected to be paid in March, that is in 1869-70, to fall into the following year, 1870-71. This too partly accounts for the difference observable in the cash statement between bills drawn and bills paid. The last-named sum of the cash balance is still, however, to some extent only an estimate which may be disturbed by variations in items on either side of an account, which, both sides taken together, amounts in all to 168 millions. This estimate then of cash balances is nothing more than the balancing entry at the end of a really vast account. It has however been further checked by the actual assets in the various treasuries in India at the latest dates. On the 31st January last, there were actually £11,839,097, or nearly 12 millions in hand; on the 28th February (the latest month), there were £12,692,129, or over 12½ millions. Telegraphic estimates received from the several local Accountants General so recently as yesterday, make the actual cash balances on the 31st March £13,500,000. These estimates being framed with a knowledge of the actual balances at the presidency towns and with recent information as to the state of the balances at the more important treasuries in the interior, are not likely to be far wrong. The result—thus derived from opposite and independent data—corresponds very nearly with the amount (£13,644,859) worked out from our estimate and gives me considerable confidence in its general accuracy. The estimate must be exhibited in this manner, under our existing system, although it is exposed to so many chances. But I have now endeavoured to narrow the uncertainty by the comparison with the actual assets at the commencement of the eleventh month of the year, and at even later dates, which leaves a margin of one month only, or even less than one month, for uncertainty.

Commencing then the current year 1870-71 with a cash balance of 13½ millions as above seen, we estimate the receipts of our general treasury, including revenues, deposits, recoveries, loans, and the like at £84,265,466, or 84¼ millions on the one side: and the disbursements, including expenditure, ordinary and extraordinary, payments on account of debt, of Secretary of State's bills and the like at £73,699,023, or 73⅔ millions on the other side, leaving a balance of £10,569,443, or 10½ millions, as the cash balance at the close of the year. It may be here asked why we expect the cash balances to be less by three millions this time twelve month than they are now. The answer is that we are to spend one million on public works extraordinary more than we borrow; that we are to advance half a million for the construction of railways in India more than we receive on that account in England; that the remittance account shows an adverse balance; that in the deposit and advance account the payments are slightly to exceed the receipts. These several items fully account for the difference.

Having now completed my exposition of the finances, I shall, before concluding, mention that the subject of the financial relations between the Supreme Government and the several Local Governments is still under the consideration of the Government of India. I have of course formed and recorded my own opinion on the whole subject. But it is really not in my power to say anything regarding the matter on the present occasion, as I cannot tell what decision will be arrived at, or by what time, if formed, it could be carried out.

I may here add that some additional portion of the cash reserve of the Paper Currency department will probably be invested in Government securities. The Council may remember that in my last financial statement, I mentioned that the note circulation had risen to an amount above ten millions; it has since then risen further at one time to a sum between 11⅓ and 11½ millions, though of course there are fluctuations from time to time. The gradual and progressive increase in the circulation has been held to justify our enhancing a portion of the reserve which is held in Government securities. The amount thus to be held in securities is limited by law to four millions. We propose to extend that limitation to six millions, and for this we have the express sanction of the Secretary of State. I have introduced a Bill for this purpose into this Council. The operation if authorized would be cautiously tentative, and some considerable time may elapse before the limit is approached.

It is a source of much regret to me that we have not yet been able to promulgate the rules, long since prepared, for the further development of Savings Banks in the interior of the country. But it has been necessary to consult many local authorities, and some delay has been unavoidable. The matter is however receiving attention.

As the Council probably knows, no marked result has as yet been produced by the Notification of November 1868, whereby it was announced that the sovereign would be taken at the Government treasuries as an equivalent for ten rupees four annas, instead of ten rupees as before. The total number of sovereigns received in the Calcutta Treasury alone since that date exceeds 150,000. The importation of gold into India from November 1868 to January 1870 amounted to 7 millions sterling against 6 millions of the corresponding previous period.

In my last financial statement, allusion was made to the satisfactory condition of our public credit as proved by the prices of the Government stocks of all denominations. This favorable indication has again lasted throughout the year 1869-70, and this notwithstanding the prospect of the revenues turning out less, and the public expenditure more, than was estimated for. During this year the premia on Government 5 per cent. stock reached 9½ per cent., which rate was maintained through the months of June and July 1869; at the same period the premia on 5½ per cent. stock exceeded 14 per cent., the price of 4 per cents. at that time ranged between 94 and 95, a rate that has since been steadily maintained. The gradual decline since 1868 in the value of 5 and 5½

per cent. stocks may of course be attributed to the diminution of the period for which the loans at those rates have currency. The loan of two millions bearing four per cent. interest, which was raised in India in April, the first month of the year, was subscribed on favorable terms, that is to say, at the average rate of 90 $\frac{3}{16}$ for every hundred rupees; the result being that the money was obtained at just over 4$\frac{1}{2}$ per cent. Subscriptions were invited by tenders, that is by open competition. Though the amount required was not more than two millions, yet the aggregate of tenders came to upwards of 5$\frac{1}{2}$ millions, and the number of persons who made tenders came to 611. Of the amount of tenders accepted, about one-fourth belonged to Natives of India; again out of 246 parties whose tenders were successful, 121 were Natives.

Such then is the budget for 1870-71. The main points in my exposition have been—

that, for 1868-69, the deficit of income as compared with the ordinary expenditure, originally estimated at one million, has, from various causes, swollen to 2$\frac{3}{4}$ millions;

that, for 1869-70, instead of the equilibrium expected to be maintained between income and ordinary expenditure, there will be a deficit;

that, nevertheless, this deficit, which at one time threatened to be great, has been much reduced by additional taxation and by retrenchment of expenditure;

that from this additional taxation and this retrenchment of expenditure, the total gain to the finances within the year has amounted to 1$\frac{1}{2}$ millions;

that, for 1870-71, there is estimated a small surplus of income over ordinary expenditure;

that this estimate is arrived at after doubling the income tax, and reducing expenditure in the army and on the public works by 1$\frac{3}{4}$ million;

that after balancing increases against decreases of all kinds, there is still a nett reduction of 1$\frac{1}{2}$ million on the total expenditure of all descriptions;

that, in 1870-71, there are to be two millions of new taxation as compared with 1868-69, and three quarters of a million as compared with 1869-70; which taxation, however, for the most part, falls on the middle and upper classes, and but little on the poorer classes of the Natives of India;

that the expenditure on public works ordinary which stood at 6$\frac{1}{2}$th millions in 1868-69, has been reduced to 5 millions in 1869-70, and to 4 millions for 1870-71;

that, besides the ordinary expenditure, there has been an extraordinary expenditure on reproductive public works, to be provided for by loan, in 1868-69 of 1$\frac{3}{4}$ millions, and in 1869-70 of 2$\frac{1}{2}$ millions, and that in 1870-71 there is proposed to be an expenditure of 3 millions;

that while the expenditure on public works ordinary has been falling, the expenditure on public works extraordinary has been proportionably rising;

that for the public works extraordinary, in 1869-70, there were borrowed 4 millions, out of which 2$\frac{1}{2}$ millions have been actually expended in the year, leaving 1$\frac{1}{2}$ million in hand;

that for the carrying on of public works extraordinary in 1870-71, at an expenditure of 3 millions, there are 2 millions to be raised in England, and that no new loan is to be raised in India at present; save the $\frac{1}{4}$ of a million to be advanced by the Mahárájá Holkar for State railways.

that the object of our financial arrangements at present is to surmount the difficulties of the time, without adding any thing to the national debt for ordinary expenditure;

that we are striving to adhere strictly to the principle of accounting separately for sums borrowed for extraordinary and reproductive public works.

In concluding my exposition last year, I spoke of growing commerce and of expanding income. To-day, unfortunately, I have had to speak of trade depressed and of income diminished. But last year, I spoke also of an ordinary expenditure held in control; of the application of State capital to material improvement; of the resources furnished by public credit. And to-day, fortunately, I have been able again to speak of these. Last year the burden of my exposition was the existence of deficit. My hope then was that the deficit would be put an end to, but to-day I have had to acknowledge that the evil still exists, despite our efforts for its extinction. Once more, however, we have endeavoured to provide for at least an equilibrium, and even for a surplus. It remains to be seen whether this will be accomplished; but at all events no exertion will be spared for its accomplishment. And although great financial difficulties have occurred, still the general condition of the people, and the continued progress of the country, encourage us to hope that those difficulties, already so strenuously encountered, will be ultimately overcome."

His Excellency the COMMANDER-IN-CHIEF,—"MY LORD, the time being very short which is to elapse before I quit India, I trust Your Excellency in Council will excuse me for offering a few remarks to-day, instead of waiting for the discussion on my hon'ble friend's projects, which will take place at a date prohibiting my presence with regard to my engagements.

"In the first place, I would venture to say that the proposal to raise the income-tax has, under the special circumstances which have been stated, my full support. I have always been opposed to a high income-tax in India, and I am opposed to it still, and I have been engaged in many a struggle against such a tax for this country when reasons could not be assigned sufficient to satisfy my judgment. I believe that a sound policy, under ordinary circumstances, demands that an income-tax should not exceed one per cent. in India, and that a higher rate should be reserved as the resource for extraordinary emergencies.

"It must, I think, be admitted, with regard to what was published under the authority of Government last year, that although it may be inappropriate to apply the word 'crisis' to our difficulties of the autumn, it is certainly accurate to say that an extraordinary emergency had arisen. Unfortunately, as so clearly shown by my hon'ble friend, we are still labouring under the difficulties which may thus be called extraordinary, the inference being that the Government is justified in having recourse to what, I for one, must characterise as extraordinary.

"In support of this position I need hardly remind the Council that, whatever the good-will of the departments of administration, the financial effect of reduction, even if as large as described by my hon'ble friend, stands, as he has so forcibly impressed on the Council, in need of other assistance. In short, it is to the development of resources, as well as to ministerial reduction, that we must look for relief of an effective kind. Perhaps, however, with my views about an income-tax, I may express the hope that, at no great distance of time, other financial arrangements may lead to a reduced income-tax. I may give utterance to the belief that the Budget, now produced by my hon'ble friend, is one of transition; a Budget which, by its trenchant, but as I hope temporary, dealing with the income-tax is to afford the time which is required for the elaboration of other plans—plans calculated to add to the responsibility of local administration, to add to its independence with a corresponding relief of the imperial revenues. In support of this view I may mention that the Income Tax Bill is framed so as to affect but one year only, and that it will expire on the 31st March 1871.

"I now pass on, from the general question of the policy of taxation announced by my hon'ble friend, to a subject with which I am more immediately connected.

"It is apparent to the Council from the figures laid before it, that certain credit is taken for military reductions, which either have been ordered, or which are expected to be ordered, in the course of the current financial year. The actual nett financial result has been stated at half a million of decreased expenditure. This result might have been larger but for circumstances beyond our control. Rather more than a year ago we received a very peremptory order from the Secretary of State to revise our military expenditure with the view, if possible, of reducing it by a million and a half of money. The challenge was fairly accepted by the Government, and after prolonged and careful consultation, comprehensive schemes were sent to England, which, if carried into execution, would not finally have fallen far short of a million in their economical results. These schemes affected the British Cavalry and Infantry in India, the British Artillery and the three Native Armies. It was believed that these schemes had overcome the practical difficulty of all military reductions, namely, the combination of economy with the maintenance of existing strength where it was really wanted, the insurance of a considerable saving of money, without in any manner sacrificing military efficiency or political security. The strength of the British Forces was to be maintained at the same number as that comprehended in the existing establishment, the staffs, both of the Army and of the Administration, were to be clipped, while the Native Forces were to be reduced in the provinces where, with the advance of civilization and in a peace which has now lasted for three-quarters of a century, the Government is able to dispense with a large part of its Army.

"This opinion, with regard to Madras, is not only that of this Government, but we learnt from the Governor of Madras in Council two years ago, that he considered his military establishment too large: this opinion was uttered emphatically, and, to the best of my recollection, without solicitation from elsewhere.

"My testimony may not be worth much, but when appealed to for an opinion as Commander-in-Chief of the Bombay Army about the year 1864, I admitted that that Army was capable of reduction with regard to the wants of the peaceful provinces it guards. At the same time some regiments were employed in guarding jails, that is, performing the duty of policemen.

"I now understand that Madras is willing to do something of the same sort with her soldiers. But I believe I am not wrong when I assert that the cost of a military sepoy is actually more than double that of a police sepoy, this difference of cost being produced by the larger number of officers connected with the former, the more expensive armament and clothing and so on.

"Now it is clear that, if the expensive military sepoys are not wanted for other purposes, it is an extravagance to keep them up for civil ones, which would be as well, some say better, performed by the inexpensive policeman.

"I have often heard it asserted,—I am not sure that I have not myself made use of the argument in former times—that it may be well to keep up a military reserve beyond immediate actual wants, and to employ this reserve on such duties I am led to believe, now, that such an argument is hardly defensible, the more especially since our modern means of movement cause the State to hold at its disposal a military reserve not previously existing, namely, in the power for rapid combination and concentration of the Forces from almost any part of the Empire.

"I believe that my hon'ble friend the Lieutenant Governor of Bengal has strong opinions on this matter, it being one of his recommendations, for an important part of the territory subject to him, to substitute military policemen for soldiers, on the ground of economy first, and, with regard to the special duties required, of efficiency also. I am not prepared to say that I entirely go along with my hon'ble friend, as I cannot hide from myself that the effect of military demonstration on the mind of a barbarous and uncivilized people is not without considerable political advantages, even if the soldiers be kept

in a state of idleness as compared with the activity of policemen in discharge of duties. I am not prepared to admit that any duties of a military nature, which may be done by military policemen, may not be at least equally well done by the regimental sepoys. If there be failing with the latter, either as regards efficiency or mobility, this failing of efficiency or mobility is not really to be attributed to a particular organization, but to those who direct forces, whatever may be their denominations. But this I do say, that that opinion is right in principle which asserts that a given duty, if it can be done by economical means, should be so performed, and that we therefore should shut out from our consideration all proposals having in view more expensive means of action for the avowed purpose of cherishing ancient establishments.

"In this Presidency it may be said, without fear of contradiction, that the Government of India has long been superior to any such considerations, the Army having been treated and considered solely with a view to its public uses only.

"Accordingly, when reviewing the Forces last year, when considering our wide frontiers, and the extremely dangerous character of a large portion of them, the necessity of occasional concentration for the prosecution of a campaign almost at a moment's notice, we came to the conclusion that we must maintain the number of British and Native Troops in Upper India as an absolute military and political necessity, although we might do something, by the reduction of some corps with their officers and the manipulation of the remainder, towards the reduction of expense, and also to show that the Bengal Army would not escape its share of the general discomfort following on a large measure of reduction.

"I would ask the attention of the Council to consider the enormous area guarded by the Bengal Army, stretching as it does from Pesháwar in the West, over twenty-five degrees of longitude, to Debrugarh in the East; I would invite you to consider the object of an Army posted in the Panjáb, which not only looks to the peace of the frontiers and of the province, but is the guarantee of our foreign relations. I would ask you to recollect the duty of the Government of India as a paramount power to insist on peace being kept by the numerous feudatories subject to her.

"In a speech which I lately read, of Mr. Grant Duff's, I observed that he could find no proper illustration of the areas and distances in India but the map of the whole of Europe excluding Russia,—in point of fact the hon'ble gentleman was referring to arrangements and distances in this our Presidency of Bengal only. In an Empire of this magnitude it is interesting occasionally to scan the forces holding the possession. I think their slender numbers, when they come to be investigated, may fairly excite the surprise of the civilized world, if those numbers are compared with the duties performed, and the absolute security provided for the vast provinces and populations and outlying dependencies of this Empire. I invite the attention of the Council to a return I hold in my hand furnished by the Military Department at my request.

Return of Nominal Establishment and of actual Strength of Troops in India, 29th March 1870, according to latest Returns received in Military Department.

	Nominal establishment.	Actual Strength.
British Forces in India	61,634	55,333
Bengal Native Army (including Panjáb Frontier Force)	63,131	60,900
Madras Native Army (including 4,729 serving in Bengal, China and Straits)	32,431	31,202
Bombay Native Army	26,880	25,178
	184,076	172,613

NOTE.—The establishment of British Troops has been recently altered to some extent, but details of future establishment are not exactly known.

The establishments given do not include 7,086 officers, including those in civil and miscellaneous employments.

The nominal establishment includes certain Corps under the Foreign Department in Rájputána. They are not included in the column of "Actual Strength of Troops under this Department."

Owing to the overland relief being in progress the actual strength of British Troops is lower than it would otherwise be.

"Well, my Lord, from these slender numbers we proposed to reduce ten thousand Native troops on the understanding that they would be taken from the Provinces where they are admittedly not wanted, but that military strength is to be carefully preserved where it is wanted.

"As a Commander-in-Chief about to hand over my not inconsiderable responsibilities to a successor, I can only say that I dare not recommend a reduction on any other principle. If we reduce our troops to a minimum, we must have them in places where they are really wanted and where they are quickly available, and we must pay much attention to the military character of the tribe or population from which our Native regiments are recruited.

"I am sorry to say we have not as yet been able to come to an agreement with the Secretary of State on this matter. I venture to think his advisers have not appreciated the value of the principle I have stated with regard to the slender general figure of our modern military resources. Agreed as we are, both in England and in India, that a reduction is proper, I trust this Government will be permitted to give effect to it in that manner alone which appears to be safe and sound. Otherwise there should be no reduction.

"Financially, this becomes the more important when it is recollected that the troops in Southern India are much more expensive than those in this Presidency.

"So far for the general question of distribution and reduction of troops.

"With reference to our European Forces, according to the figures I have already read, it must I think be clear to the meanest apprehension that we have reached the absolute minimum. I believe that, by means of certain changes which have been laid before the Home Government, these Forces may be actually rendered more efficient than they now are, while their cost is considerably reduced. Our proposals are before Her Majesty's Government, who to a certain extent have moved in the directions indicated by us with regard to the Infantry, although, as respects the Cavalry and Artillery, we are as yet unacquainted with the conclusions formed at home. The number of infantry-corps has been reduced, but the number of infantry-soldiers remains as heretofore.

"My Lord, I have been in the most important situations in these armies for more than twelve years. I have been an acquiescing party to the successive reductions in European strength which began with the cessation of hostilities in 1859, because, till the last reduction of four years ago, I held the opinion that we were still maintaining war-establishments. But I am convinced that we should not go further, and that to attempt a diminution of the existing British Forces in India is an expedient fraught with so much danger as not to be thought of.

"Although it is a mistake to say, as it is so often alleged, that the British Empire in India is merely one of the sword, and although we recollect that this Empire really rests on a policy founded on justice and the rugged British character, it is nevertheless true that a certain armed British demonstration is absolutely necessary for dominion over public opinion, and the insurance of the institutions to which we trust for the civilization of the country. It is, to your administration, what iron is to the blood—on the due proportion of the iron, vital power depends.

"I came out to India in 1857, to assist in putting out the terrible conflagration which had been caused by the forgetfulness of this simple truth on the part of the authorities responsible for India in this country and at home. I pray to God that such blindness may not overcome, again, those who have to answer for the destinies of this magnificent country!

"My Lord, there are many things on which I could willingly descant with reference to the systems, and the recourse to more economical arrangements, which might be pursued in these Armies. In those with which I am acquainted, namely, of Bengal and Bombay, I believe the existing system is working

fairly well. So far as I am able to judge, the discontent which was rife some years ago has generally died out. For Madras I cannot answer, as I have no personal knowledge of the Army of that Presidency. But the changes which have been stereotyped with us, and have now lasted for many years, are comparatively new to Madras. For such things, the action of Time is at least as much required as any artificial resource. This, as yet, Madras has not enjoyed.

"Your Excellency has had an opportunity of seeing the troops of this Presidency on two great occasions, and also, I believe, in Bombay; and I will leave it to you to say whether in appearance they can be surpassed by troops of other countries. During the last few years, there have been the campaigns of Bhután, Abyssinia and Hazára; and it is but right to say, for the troops, that their zeal, readiness, mobility and forwardness in the field were not to be surpassed. There is one thing, of which in the interest of true economy and of political safety, I would warn the Government, and, perhaps, I may say the officers of the Army. I would warn them against the vice which is apt to creep insidiously over all Armies in times of peace, namely, the tendency to press for more comforts, more material advantages, in short, for things which cause the soldier to forget the object of his enlistment, and to believe that he is to be preferred to the public economy.

"In a country of caste like India, unless the officers who deal with the Native troops watch themselves, the influences of caste are apt sometimes to affect even the British officers, and to cause them occasionally to think caste-interests of greater importance than military ones. This mischief was actually seen in the old Bengal Army. It does not, I believe, now exist, at all events in this Army of Bengal; but I must repeat, it requires never-ceasing vigilance to prevent the vicious tendency from cropping out.

"In the British Army we have not this to contend against; but we have something else which also requires the utmost watchfulness. I allude to what may be called the exaggeration of sanitation-theories, which, while exhibiting at times the utmost difference of opinion among the authorities proffering their advice, would, not seldom, if listened to in their integrity, deprive the British soldier of his usefulness altogether for the purposes on account of which he is brought to India. Whilst warning against the exaggeration, I gladly admit the facts of the great improvements of late years for the health of the British soldier, and I believe I have not been slow to forward them during my long term of office in Bombay and this Presidency.

"I have had the great satisfaction of urging forward the two new Hill-stations of Chakráta and Ránikhet, the former of which is already occupied by a British Regiment, and the latter will receive some 500 men this year. I think this policy may be still further extended, and that we may safely create Hill-stations for three more British Regiments, in addition to those already occupied. Then, in addition to our sanitary depôts, we should never have less than seven or eight entire Corps on the mountains in this Presidency; that is to say, a fourth of the Infantry Regiments quartered in the Himalaya as entire Corps, while very large detachments from the remaining Infantry, the Cavalry and Artillery, would fill the depôts. My recommendations to this effect have been before the Government for some time.

"As a matter of economy as well as of humanity to our countrymen, this policy should be extended to the utmost limit consistent with political security.

"In the course of my remarks, I have adverted to the new military strength accorded to us in these days, as compared with former times, in the power for immediate combination and concentration. This reflection leads us at once to another point, namely that, in the combination of the Military Departments of the several Presidencies into one War Department under the Government of India, with a corresponding change in the system of Command-in-chief, may be found a measure giving at once improvement in economy and increase of

strength. There should be but one War Department, which would at once involve the consequence of one Ordnance Department; in short, the concentration of the Army in the largest sense in the hand of the Government of India. This need by no means interfere with the local character of the Native Forces of the other Presidencies, a character which, I believe, a sound policy bids us carefully to maintain.

"It has always appeared to me that, in this country, many things are centralized which ought to be local and dependent on the Local Governments; whereas those establishments are kept separate, and, as it were, almost distinct from the immediate control of the Supreme Government, which, from the nature of things, especially belong to it. Such is the case with military administration. We do not see the Federal States of America maintain distinct military organisations for the payment of which Congress is responsible, although, in other matters, the provincial Governments of the States exercise a very large power.

"There is no reason for separate military administration in Madras or Bombay, which would not equally apply to the several Governments making up this Presidency. So long as the separate system lasts, I am hopeless of real economy or of breaking down the influences and jealousies which meet your Excellency at every turn when economical schemes issue from this Council. I need hardly remind this Council that I ventured to utter these opinions very many years ago, when they might have been supposed to be contrary to my personal interests. A long and practical experience of government and command, first in Bombay, and afterwards in association with the Governor General, have only tended to convince me that these opinions are right and should be carried into execution. Whenever reforms in such a direction take place, I may say, with regard to the office I am about to lay down, that some modification is necessary.

As your Excellency is aware, I received the instructions of the Secretary of State for India, when I was appointed to this command, to be as much with Government as possible, regard being had to my essential military duties. That instruction was enforced by the orders of His Royal Highness the Field Marshal Commanding in Chief. Well, I have tried to fulfil those instructions, and have been more assiduous in my seat in Council than, I believe, the great majority of my predecessors. Not sparing exertion and activity, I have sought to carry out my duties of inspection in hurried Spring and Autumn tours. I believe that, in consequence, the troops have been visited by Head-quarters quite as much as in former commands. But the strain imposed in the attempt to carry out the instructions with regard to the two sets of duties has been often such as almost to exceed the strength of any man, while my visits to the several stations and my residence among the troops have been shorter than I could have wished; this not unnaturally caused my mode of exercising command to be misconstrued in many quarters. I think, then, that, in any revision of the establishments with regard to economy or other considerations that may be entertained hereafter, the points I have mentioned, although personal to myself, are not without significance, and should be duly weighed. How the necessities of the administration, on account of what is now done by three Military Departments, and how the military command should be dealt with in the three Presidencies, in order to overcome the inconvenience and the want of economy now experienced, I have more than once during the last ten years suggested to Government. It is sufficient to say that we have, in my opinion, the right model in France, where the Head of the Army is the executive War Minister, while the Military Command of the Corps d'Armée is conducted by Lieutenant-generals, whatever their titular military rank.

"There is one more point to which I would invite the attention of the Council, that being the tendency to growth of non-effective establishments. I need not advert to the statements of General Hanyngton and Colonel Broome,

beyond uttering the remark that, while these distinguished authorities differ in detail, they are agreed in presenting a picture of future liability which is positively alarming. In short, we are threatened with the serious danger of all our economies in India, in the combative Forces being eventually greatly more than swallowed up in the growth of the non-effective expenditure. Under such circumstances, a further greater danger might be forced on by public outcry, involving perilous reductions to meet non-effective charges.

"It has been my duty, more than once, to submit my views as to how this difficulty may be fairly and properly encountered while there is yet time. It would be premature to dwell on the suggestions of one member of this Government on this particular subject, which I presume must be sooner or later dealt with in an authoritative manner, and may be said to be still *sub judice*, although this Government and the Secretary of State have not as yet come to an agreement on the subject. But I need not suggest to the Council that the subject is one of great and of increasing importance. My Hon'ble friend in charge of the finances cannot press his attention too strongly to it.

"In conclusion, my Lord, as one who has been intimately associated with the Armies of India for more than a quarter of a century, and, for the latter half of that period, has been in places of the greatest responsibility, who has watched the causes and progress of change through this long period, and has been in general one of the chief executive authorities for carrying out the reforms impressed on us from time to time by Her Majesty's Government, I may, at this last moment of my discharge of duty, declare my confidence in the military arrangements sanctioned by your Excellency in Council, and my belief that the Army does justice to the care bestowed on it by the Government.

His Excellency THE PRESIDENT—"I am anxious on this occasion to deviate somewhat from the usual course, and to make to my colleagues in this Council a statement with regard to the proceedings of the past and ensuing year of the Department of Public Works, of which I am the Member of Council in charge.

"I believe that great advantage would be derived if this practice were more generally adopted, and if Members of Council in charge of the great expending departments of this Government would take advantage of the production of the Budget to lay before their colleagues a short abstract of the mode in which these great sums of money have been and are to be disposed of, in order to give to the public an opportunity of knowing in detail how these sums are likely to be expended.

"I think, therefore, that in adopting this course, I am adopting a course which is now pursued in almost every Government in the world, namely, that at certain periods of the year, even under the most absolute rule, ministers do, on their own responsibility, make statements on the position of the departments over which they preside.

"Should the course that I now propose to take with regard to Public Works in India receive the general approval of the public, I propose to extend that practice to another year, and endeavour to induce some of my colleagues to make similar statements.

"No other opportunity is likely to occur—I regret that the present hour is so late, but still I am anxious that at the earliest possible moment the public should be placed in possession of those important facts to which I now invite the consideration of my colleagues.

Many of these facts which I now bring forward and state to the Council would, in ordinary course, hereafter be laid before the public. But we are all aware that when facts such as these are merely stated in various departmental reports, they are necessarily stated at great length and in a somewhat disjointed form, and my belief is, that these matters do not receive from the Indian public that fair attention which their importance deserves, and I think the

Government would obtain much advantage from wider criticism and greater discussion of these subjects by those who take an interest in public affairs.

With this preface, I propose to make as brief a statement as I can as to the expenditure of the Public Works Department during the past and ensuing years.

The total expenditure on public works in England and India for 1869-70 will be about £8,000,000.

I give the figures as nearly as possible in round numbers.

This great sum will be divided into two heads, *viz.*, Ordinary and Extraordinary expenditure; the Ordinary expenditure representing that which we expect to be able to pay out of the revenues of India, and the Extraordinary, that which is to be defrayed by loan.

Under the head of Ordinary we shall have spent in the year which has just come to a close a sum of something like £5,300,000.

Under the head of Extraordinary we shall have spent the sum of £2,600,000.

Of the £5,300,000 which I have just mentioned under the head of Ordinary, £5,000,000, as nearly as possible, will be spent on public works. The remainder will be made up of smaller items, such as State railways, official expenses connected with guaranteed railways, and loss by exchange.

In the Extraordinary expenditure for the past year, the great item will be that of two millions of money spent on Irrigation works; a small sum has also been taken for the commencement of State railways.

The principal items of expenditure in India under the head of Ordinary will be—first, for Military works nearly a million and a half sterling, of which the original works will take about £1,200,000 and repairs £227,900.

£478,000 will be spent on Agricultural works, of which £192,000 will be taken for original works and £279,000 for repairs.

£680,000 will be spent on Civil buildings, of which the original works will cost £562,000 and the repairs £122,000.

We then come to the important item for communications, which really means the construction and repairs of ordinary roads. In the year that is just closed we shall have spent under this head, as nearly as possible, £1,000,000—£600,000 of which will be spent on original works and £4,900,000 in repairs.

A smaller item of £58,000 follows for miscellaneous and public improvements, and then there will be the great item of £1,000,000 for cost of establishment, of which £70,000 will go for tools and plant.

These will form the principal items of the Ordinary expenditure of the Government of India in the Public Works Department for the year just closed.

Of the million and a half spent in India on Extraordinary works in 1869-70—

Irrigation Works will take about...	...	£ 950,000
State Railways about ...	...	„ 144,000
The Bombay Special Fund ...	...	„ 350,000

and the remainder will be made up of smaller items.

It will be interesting to the public to know how this large expenditure of 6½ millions was distributed among the various Presidencies.

Madras will have received for its public works about		£ 835,000
Bombay	...	„ 1,450,000
Bengal	...	„ 1,360,000
N. W. Provinces	...	„ 865,000
Panjáb	...	„ 866,000
Central Provinces	...	„ 328,000

The remainder will be distributed between British Burma, Oudh, Hyderabad, Rájputána, Central India, Coorg and Port Blair.

In the middle of the year 1869-70, as the Council are aware, upon investigation and enquiry made at Simla into our financial position, the absolute necessity of an immediate reduction in the Public Works Department became apparent to all the Members of the Government. After the fullest and most careful consideration, we came to the conclusion that unless a large reduction was made in this item of expenditure, it would be impossible to look to financial safety in the year. We, therefore, with very great reluctance made up our minds to a reduction of the public works expenditure of the Government of India to an amount of nearly £800,000, the actual sum being £792,500.

Well, the necessity of the case was speedily recognized in a manner that was almost surprising, and with scarcely a single exception, the local Governments so far seconded our efforts that the result has been obtained, and it appears that a saving will have been effected in the Public Works Department's Ordinary expenditure during the year even to a greater extent than was suggested.

There are only two cases in which local Governments will have exceeded their grant. Madras will have exceeded its grant by the small sum of £3,000, while according to the latest accounts Bombay will have spent £29,700 more than the reduced grant.

This is the only case where a local Government has been unable to carry out to the full the orders and wishes of the Government of India.

I find that Bengal will spend less than the reduced grant by £2,400, North-West Provinces £500 less, Panjáb £82,700 less, Central Provinces £14,300 less, British Burma £30,900 less, while the smaller Governments will show a proportionate reduction. The result will be that, under this head of public works expenditure, the reductions that were ordered in so unusual a way will be entirely and successfully carried out.

When we think of the very great sacrifice that the local Governments have been called upon to make, when we know the great interest they take, and justly take, in all these works, I must say that the Government of India are deeply indebted to those Governments for the manner in which they have adopted our recommendations, and for the way in which, at very great sacrifice, they have been able to carry out our wishes.

Well, so much for expenditure in the Public Works Department in the year that is just passed.

I now propose to lay before the Council a similar statement with regard to the expenditure of the year upon which we have entered.

I must, however, remind the Council that both as regards the past and the future years these statements are to a certain extent approximate. It is impossible, speaking on the second day of the financial year, that the fullest information with regard to the past can be at the disposal of the Government of India, and, as every one knows, with regard to the future the statement I am about to make is one entirely of estimate. All I can say is that in respect to large expenditure much power rests in the hands of the local Governments, if they choose to exert it, which I am sure they will, to keep the expenditure within the estimate, and in some instances to realize even more than the suggested saving.

The expenditure, then, for the ensuing year in the Public Works Department will be placed at about £7,475,500.

Of this £6,900,000 will be expended in India, and £500,000 in England.

Under the head of Ordinary, £4,300,000 will be expended, and under the head of Extraordinary £3,100,000.

Of Ordinary, the large sum of £3,900,000, or nearly £4,000,000, will be spent entirely on public works; the rest will be made up of the smaller items, such as official expenses connected with guaranteed railways, Calcutta and South-Eastern Railway, and loss by exchange.

In Extraordinary, that is, the loan-works for the ensuing year, the two great items will be £1,730,000 for irrigation, and £1,220,000 for State railways. This head of expenditure appears for the first time in any magnitude in the public accounts. The remaining item is a smaller one for Port-trust works at Bombay.

Well, then, of the £4,300,000 to be devoted to Ordinary works, the Military works will take about £1,120,000; of that £900,000 will be expended on new works, and £200,000 on repairs.

The Ordinary agricultural works will take £490,000, the greater part of which will be spent on original works, repairs, with a small outlay on guaranteed irrigation works.

£518,000 will be spent on Civil buildings, of which the new works will demand £390,000, and the repairs £120,000.

£840,000 will be spent on communications, that is, on roads. The expenditure on roads and repairs will be divided very nearly in equal parts, as the original works will come to £400,000, and the repairs £430,000.

There will be a small sum of £40,000 spent on miscellaneous public improvements.

The cost of establishment which directs the whole will stand at something less than it did last year, being £900,000, and £60,000 for tools and plant.

As I said before, of the £3,100,000 which will be spent on Extraordinary works—

	£
Irrigation will take	1,700,000
Original works	1,200,000
Establishment	300,000
Tools and Plant	180,000
State railways	1,200,000
And Port-trust works	150,000

This gross sum will be as nearly as possible distributed to the different local Governments in the following proportion: —

£	
817,000	to Madras,
1,370,000	to Bombay,
1,212,000	to Bengal,
1,137,000	to N. W. Provinces,
1,800,000	to the Panjáb, and
300,000	to the Central Provinces.

The reason for the Panjáb figuring for such a large sum this year is, that the great State railway from Lahore to Pesháwar is to be commenced this year in that province.

"The remainder of this large sum will be divided between British Burma, Oudh, Hyderabad, Rájputána, Central India, Coorg, and Port Blair.

"In round numbers, then, the expenditure on public works in 1869-70 will have been £8,000,000; in 1870-71 £7,500,000, or 7½ millions. But a heavy payment of an unusual character took place in 1869-70. Of the £1,400,000 which was spent in England in 1869-70, £1,040,000 was paid to the shareholders of the East India Irrigation and Canal Company for their property, which is better known under the name of the 'Orissa and Soane Irrigation Company.'

"If, therefore, this heavy item be left out, it will bring down the real expenditure in 1869-70 to £6,900,000.

"From this point of view, therefore, the total estimated expenditure for 1870-71, namely, £1,400,000, is in reality half a million more than the corresponding expenditure for the past year; so that if we exclude from the expenditure of the year that is just closed the payment for the property of the Orissa Company, we hope during the ensuing year to expend on works of public utility a much larger sum than we spent during the past year.

"But I must remind the Council that those great sums of 8 millions in 1869-70 and 7½ millions in 1870-71 by no means represent the whole of the expenditure on works of public utility, and for which the Government is responsible in India.

"We shall pay in 1869-70 £1,570,000 in interest and nett charge on account of railways. The Railway Companies under Government guarantee will spend in the same year upwards of four millions on construction; so that in reality the gross expenditure on works of public utility in India during the past year, and the necessary expenses, that is, payment of interest on loans expended for similar objects, will amount to the enormous sum of nearly fourteen millions.

"In 1870-71, that is, in the ensuing year, in addition to the 7½ millions before referred to, we shall spend as our nett charge on account of railway interest £1,600,000, and the Railway Companies under Government guarantee propose in the same year to spend upwards of £5,100,000 on construction, making in all a total for the present year of upwards of £14,288,000.

"I wish the Council particularly to note these facts, because I do not believe that it is generally known that there is such an enormous expenditure going on in India for works of public utility.

"If we put these two great sums together, we shall have expended in the two years ending 31st March 1871, either from ordinary revenue, either from loan for interest, or through the agency of the Railway Companies under Government guarantee, the enormous sum of 28½ millions upon works of public utility in India, and their cognate expenses.

"This sum that we shall spend in two years is considerably more than the annual revenue either of Spain, of Italy, of North Germany, and three times as much as that of Holland.

"Now as to the proportion that these great sums bear to our own revenues. I find that in a calculation which has been kindly made for me by the Secretary of the Financial Department, the amount of nett available revenue of the Government of India for the year 1869-70 can only be counted at £28,900,000. When I say available revenue, I mean those sums placed at the disposal of the Government of India the distribution of which is within their power; that is to say, that in making this calculation I deduct all imperative charges over which we have no control, such as costs of collection, charges, payments of interests, and charges for pensions, any payments made under treaty engagements, &c.

"If after making these deductions we take the nett available revenue of India for this year, we find that it only amounts to about £28,000,000. We shall have spent out of that sum in the year just closed, out of the revenue of the year, as I stated before, a sum of £4,800,000 on public works ordinary, which is nearly 17 per cent. on our nett available revenue. In the year 1870-71 we expect that our nett available revenue will be £28,090,191, and that we shall spend on public works ordinary £3,800,000, which will be nearly 14 per cent. on those resources over which the Government may be said to possess control.

"To look at it in another way, I find that the whole expenditure on public works—that is, the nett expenditure (deducting recoveries)—amounts to £13,800,000 for this year, so that comparing that with our nett available revenue, we shall have spent on works of public utility during the past year something like 47 per cent. The percentage will be increased during the present year, so that in reality we expect to spend within the ensuing year on works of public utility in India a sum nearly equal to half of our entire available revenue, and I believe this is an effort in the direction of public improvement that has hardly ever been attempted by any other nation in the world.

"But I wish now to explain to the Council the different proceedings which are to be undertaken during the ensuing year by the Government of India under various heads in the Public Works Department, and for this purpose I shall place what I have to say under the heads of Military works, Civil works, Agricultural works, Irrigation, &c., and Railways.

"Under the head of Military works, the total sum spent in 1870-71 will be £913,000 for original new works, and £214,000 for repairs, making a grand total of £1,127,400.

"The sums for new works may be classed under the following main heads, *viz.*—

	£
Accommodation for troops generally	654,305
Ordnance factories	147,100
Gas-works	5,500
Water-supply	21,495
Works of defence...	61,000
Roads to important hill stations	19,000
For Port Blair	4,650
Making in all a sum of	£913,051

"Of the total sum assigned for 1870-71 under the heading of 'accommodation of troops,' *viz.*, £654,304, the bulk has been devoted towards carrying on the great scheme of barrack accommodation for the British soldiers that has now been in progress for the last five years.

"It has been necessary to sub-divide the allotment over nearly all the stations at which European troops are quartered, in view to provide for the urgent requirements at each station in the way of shelter; but it has been an object to concentrate the expenditure as much as possible, on the completion of barracks and hospitals now in progress, rather than on the commencement of new buildings, for by so doing, it will be possible to complete a very considerable amount of shelter at each station during the year. The largest assignments have been made for the most unhealthy stations, or for stations at which the accommodation is most backward, thus—

	£
Saugor	29,000
Morar and Gwalior Fortress...	25,000
Mhow	19,000
Nusseerabad	19,000
Belgaum	22,000
Kurrachee	20,000
Peshawur	15,000
Ahmednugger	17,000
Jubbulpore	15,000
Fyzabad	20,000

"At other stations, where the call for accommodation is not so urgent, the allotments are somewhat smaller than the foregoing, thus—

	£
Ambála	11,800
Ráwal Pindí	7,500
Seetapore	9,000
Neemuch	14,000
Nowgong	10,000
Bellary	5,000
St. Thomas' Mount	5,000
Kirkee	10,000

"The allotment for Barrackpore, £7,700, will complete the barracks for both the single and married men of the two companies of artillery at that station.

"The allotment of £8,000 for Allahabad will also complete the accommodation of the regiment of infantry and battery of artillery at that station; so also will the allotment of £5,000 complete the buildings for the single and married men of the regiment of infantry at Cawnpore.

"Liberal provision for extending the accommodation at hill stations has also been made. A sum of £7,500 has been set apart for completing the temporary accommodation of the regiment of infantry at the new hill station at Chakráta.

"An allotment of £10,000 has also been made for proceeding with new barracks at the new hill station, Ráni Khet, and an aggregate sum has also been allotted to the old hill stations at Dugshai, Kussowlie, Subathoo, Baloon and Murree.

"The next item for consideration is that of the ordnance factories. The most important works under this head are the Snider factories and ordnance buildings in Bengal and Bombay,—we do not yet know whether we shall be able to proceed this year with the Madras factory,—and are specified as follow:—

Snider Factory, Dum-Dum,
Ditto Kirkee,
Ditto St. Thomas' Mount, Madras,
Gun Carriage Agency buildings in Allahabad,
Powder Works, Gun Carriage buildings, and Magazine, Kirkee,
Hydraulic Lift, Graving Dock, Bombay, and we hope some progress may be made in the new Gun Foundry at Cossipore.

"Funds are provided for completing the gas-works for lighting the barracks and cantonments at Allahabad and Rawul Pindee. These works are now far advanced, and are expected shortly to be completed.

"The next item is that of the water supply. The important projects under this head are—improved water supply for the large station of Ambála, and also for Trimulgherry, Kirkee, Ulsoos Tank (Bangalore).

"With regard to defence works, the most important of these are the harbour defences of Bombay and the Rangoon pagoda and harbour defences.

"With regard to roads to hill stations, the sum allowed for this work is for opening up communications from the plains to the important hill stations of Ráni Khet and Chakráta.

"This, then, is a description of the works proposed to be undertaken during the ensuing year under the head of Military works.

"Under the head of Civil works, one of the principal grants will be made to Kurrachee Harbour. The grant for these works for 1869-70 was £26,500, which was subsequently reduced to £25,500. The grant for next year is £26,500.

"The estimates for these works aggregate about £130,000, of which it was expected that about £260,500 would be expended up to the 31st March 1870, so that at the present rate it will take many years to carry out the scheme.

"But I wish to say, with regard to these works, that we hope to place them upon a somewhat different footing, and we are already engaged in seeing whether a local trust may not be created by which advances may be made, and therefore it might be possible hereafter that a portion of this expenditure may fall under the head of Extraordinary.

"With regard to the Godavery navigation, the original grant for 1869-70 was £70,000, which was reduced to £50,500. The grant for 1870-71 is £30,500 only; all these figures being exclusive of establishments. The grant for the First Barrier Works will practically complete them, and a good deal of progress may be expected with the anicut and locks at the Second Barrier.

"The construction of the road from the Dharwar Frontier to the Port of Karwár is a very important work.

"The grant for the year 1869-70 was £13,340, and for 1870-71 it is £15,000.

"This will probably complete that line of road.

"A sum of £147,500 has been passed for improvements to the Bombay Harbour, £100,000 of this being for the Moody Bay Reclamation.

"The whole of the expenditure it is proposed to debit against the Port Trust, which, it is hoped, will soon be constituted, on arrangements for the purchase of the property of the Elphinstone Company being concluded.

"With regard to the Madras jails, the great progress made within the past two years with the new central jails in that Presidency has allowed of a considerable reduction in the grant assigned to them in 1870-71, namely, from £32,400 in 1869-70 to £9,768 in 1870-71.

"This latter sum will practically complete the principal jails.

"In Calcutta a sum of £40,000 has been assigned for the new High Court, which sum will complete it if the estimate be reliable.

"It has, however, been found necessary to leave the University and the Imperial Museum without any grant, as it is considered that it is much better to complete one work at a time than to endeavour and only partially to complete four or five.

"Amongst Civil works the reduction in the grant made in 1869-70 was distributed nearly equally between buildings and roads, so that the percentage of the reduction on the latter head was considerably smaller than on the former. The diminished expenditure on ordinary roads is, however, far more than compensated for by the increasing expenditure on Railways.

"I now come to the important item of Agricultural Grants.

"There never was a year in which the benefits of irrigation were more decidedly evidenced than in the last year. The interesting reports from the North-Western Provinces on this subject have attracted the notice of the public, and the statements which have been made are most remarkable and encouraging.

"In the unusually dry season of 1868-69 a great calamity was averted. It is stated on the authority of the Government of the North-Western Provinces and of the Canal Officers engaged there, that in that Province alone 1,125,702 acres were kept in a state of fertility which would otherwise have been unproductive.

"Colonel Brownlow and his officers exerted themselves to the utmost, and the result was that by their influence and constant energy, they persuaded the people to make use of the water principally for this purpose. The result was that in those irrigated districts, there was a considerable increase in the production of the lower class of cereals, and I find that the 2,786 acres of that description of crop, which were under irrigation in 1867-68, have increased in 1868-69 to the amount of 85,281 acres.

"The returns exhibit an increase of the extent of land watered of 665,023 acres over the preceding year, 96 per cent. more than that irrigated in 1860-61, the most recent year of scarcity, and 45 per cent. greater than in 1866-67, the previous maximum of irrigation. In the Meerut Division irrigation reached the extraordinary extent of 308,161 acres, or 30 per cent. of the entire culturable area of the district, exhibiting an increase over the preceding year of 103 per cent. These facts tend completely to show the enormous value of irrigation works.

"The Ordinary grant for Agricultural works for the current year now stands at £478,279, of which £192,199 are for new works, £279,580 for repairs, and £6,500 for State outlay on guaranteed works.

"The Extraordinary grant was originally £1,650,000, but the expenditure is not likely to exceed £900,000.

"For 1870-71 the following amounts are provided:—

Ordinary.	£
New works	169,420
Repairs	322,500
State outlay on guaranteed works	5,380
	£497,300

Extraordinary.	£
New works	1,246,400
Establishment	300,700
Tools and Plant	185,400
	£1,732,500
Grand Total	£2,229,800

making thus £1,415,820 for actual construction of new works, and £322,500 for repairs.

"It will be seen that the greater part of the Ordinary grant will be devoted to 'repairs.' This arises from the necessity of maintaining in good working order the extensive systems of Irrigation works already in operation in different parts of India, particularly in Madras, Scinde, in the Panjáb and the North-Western Provinces. Also, in Bengal, a considerable sum is required for the maintenance of the numerous lines of embankments in the Orissa and other districts.

"The original works to be carried out from the Ordinary grant are numerous, but, with few exceptions, of no great magnitude individually.

"Numerous important works are in progress, and will be continued during the ensuing year from the extraordinary grants in Madras, Bombay, Bengal, North-West Provinces, and Panjáb.

"In Madras the most important work that now engages attention is the completion of the canals in the Godavery and Kistna Delta. The local Government is furnished with such sums as it requires for this object, but owing to the limited supply of labour available, the extension and enlargement of these canals to the standard ultimately required must at best be a slow and gradual operation. During the current year the sum of £52,760 was allotted

for these works, but the expenditure is likely to be somewhat less. Other projects on a smaller scale, but still of considerable importance, have been in progress in the Nellore, Madras, Tanjore and Tinnevelly Districts, and several entirely new schemes are now under investigation. For the latter the allotments proposed by the local Government have been allowed to stand, but as the estimates will have to be submitted to the Secretary of State for approval, it is not likely that much, if any, progress will be made with them in the coming year.

"In Bombay estimates to the amount of £545,494 have been sanctioned as extraordinary, of which £305,898 pertain to a reservoir and canal near Poona.

"Several other large projects are under consideration, of which the most important is a line of canal from Roree on the Indus to Hyderabad, which is likely to cost upwards of two millions sterling. The estimate for this work is, it is understood, nearly ready, and, in the event of its receiving the sanction of Her Majesty's Government, will probably be commenced in the ensuing year.

"In Bengal the extensive works which had been in progress in Orissa under the management of the East India Canal Company, having been transferred to Government, have been vigorously prosecuted, and the new works on the Soane, estimated to cost £2,100,000, have been commenced. Also a canal, which is likely to cost half a million sterling, from the Damoodah at Raneegunge to the Hooghly, has been lined out, preparatory to commencement of work on the estimates receiving approval.

"An extensive system of canals from the Gunduck, at an estimated cost of £1,384,826, for the irrigation of the Tirhoot, Sarun and Champáran Districts, and also for navigation, has been before the Government of India, but information on several important points is required before it can be recommended for approval.

"The works in progress in the North-Western Provinces comprise various additions to the Ganges Canal, and its system of distribution channels; a canal from the Jumna near Delhi to Agra, estimated at £575,000, and several smaller canals in Rohilkhand. The latter form the commencement of a proper system of irrigation and drainage of the Terai Parganas.

"A scheme for a canal from the Ganges for the irrigation of Eastern Rohilkhand, estimated to cost about £1,000,000 sterling, has actually been before Government, and will be proceeded with on the necessary authority being obtained from the Secretary of State, and estimates for canals in Rohilkhand have also been under consideration. It is further proposed to open out a new feeder to the Ganges Canal with a view to intercept the whole of the dry-weather supply of the river above Futtehgurh, and thereby to obtain the means of extending irrigation to the terminus of the Doab at Allahabad.

"In the Panjáb the improvement of the Bárí Doab Canal has been in progress. The Kussoor and Sobraon branches, which formed part of the original project, and which were suspended from want of funds several years ago, have now been re-commenced on an estimate amounting to £270,000. The Sirhind Canal, estimated to cost £2,250,000, and designed to convey the water of the Sutlej to irrigate the tract between that river and the Jumna Canal, including the lands belonging to His Highness the Mahárájá of Puttiala, has also been commenced.

"This will, I believe, be one of the most magnificent works that has ever been designed or carried out in this country, and I am happy to say that the Mahárájá has shown the greatest disposition to assist in the project.

"A general improvement of the Western Jumna Canal and the opening out of two important branches form the subject of another scheme, and a portion of the work has already been commenced.

"A project for a second canal from the Sutlej near Ferozepore, which will intercept the whole cold weather volume of the Beas, and give the means of irrigating the lower portion of the Bárí Doab, comprising an area of about 5,000 square miles, is also under investigation, and an estimate will probably be shortly before Government.

"A scheme for a system of canals from the Sardah, and which is likely to cost nearly five millions sterling, has recently been before the Government of India. The detailed estimates for this great work, which is designed to irrigate the greater part of Oude and portions of the Benares and Jounpore Districts, as well as to afford a navigable communication from the foot of the Himalaya to those places, are now being drawn out.

"If any person who takes an interest in these matters wishes to read a really able and interesting document, he might read the elaborate report of Captain Forbes, who is the best authority with regard to this scheme. We have it in our power to undertake great works in that district which will be as important as any that have ever been conducted in India. This is a slight sketch of what we are endeavouring to do for the furtherance of irrigation.

"I hope I am not detaining the Council, but I wish very briefly to refer to what has been done with regard to Railways during the ensuing year.

"The year 1870-71 will be a notable year in the Railway history of India. On the 31st December 1869, 4,264 miles of Railway were open in this country, and we expect 5,061 miles to be open on the 31st December 1870, or at all events before the close of the financial year, so that if our expectations are realized, as I believe they will be, the average number of miles opened within the year will be 801 miles.

"Of this, the Great Indian Peninsula Railway will open 238½ miles of the north-east extension and 158½ miles of the southern. The north-west extension of the Madras Railway will open 94½ miles, and the Bellary Branch of the same line 32 miles, Khamgaon 7½ miles, Oomraotee 5, and Delhi 32½ miles. The East Indian Railway will open its Chord line of 128½ miles, and the same Company the Kurhurbaree Branch of 24½ miles. The Eastern Bengal Railway will open the Goalundo Extension of 45 miles, and the Oude and Rohilkhand Railway, Byrom Ghât, 40 miles, making, as I said before, a total of 801 miles of Railway to be opened during the present year in India.

"This is the greatest number of miles that has ever been opened in any one single year. In the year 1861, 745 miles were opened, and in 1862, 770 miles. The next largest number opened in one year was in 1864, when 446 miles were opened, but in 1868 we have only opened 80 miles of Railway. However, I hope the honour will be reserved for 1870 to witness within the year by far the greatest number of miles of Railway ever given to public use since Railway construction was first commenced in India.

"The Council are doubtless aware that a great scheme has been laid down which we propose in the matter of Railways, as far as possible, to adhere to, and that is the scheme for the construction of about 15,000 miles of Railway. Of this 4,000 miles are already opened, 1,000 are in progress and 900 are about to be commenced. We are actually at this moment endeavouring to do something more or less on fifteen different lines of new Railways. I should like, therefore, to mention very briefly to the Council what the principal of these undertakings are.

"From Delhi and Agra it is proposed to make a Railway to the Sámbhar Lake, which will, we believe, confer enormous advantages on the people of those districts by carrying corn and grain for their consumption, and bringing back return freights of salt and other productions of the district. Part of this system will also pass through the salt district of Sultánpúr near

Delhi. I am happy to say that the surveys of the Agra and Delhi Districts of these lines are very far advanced, and we have every reason to hope that, on the Delhi section, work will be almost immediately commenced. The estimates for the whole undertaking will be furnished during the ensuing year, and there is no reason why the actual work of this important line both in the Agra and Delhi divisions should not be commenced during the ensuing cold weather.

"On the Panjáb State Railway, very considerable progress is being made. The whole of the line has been surveyed between Jhelum and Lahore. The designs for the three great bridges over the Rávi, Chenáb and Jhelum are in progress, and we hope very soon to send home to the Home Government an estimate of, and the necessary orders for, the iron necessary for the construction of these great bridges.

"Notwithstanding the great expenditure which we shall be obliged to make upon these bridges, we believe that the estimates fully justify us in stating that the whole of that line from Lahore to Jhelum ought to be constructed at a cost of something like £11,500 a mile. The surveys through the South Panjáb for the Indus Valley line have been already commenced, and Major Macleod Innes and a party of officers have been engaged during the cold weather in the surveys of that important line in the direction of Sukkur. An Engineer was sent out from England to survey a most important line of Railway between Karwár and the cotton-producing districts of the Southern Mahratta country. Unfortunately, this gentleman arrived too late to make a satisfactory survey. It has therefore been necessary, before the location was finally determined on, to cause a further investigation of the district to take place, but I am in great hopes that, before very long, the Government will be in a position to decide as to the exact direction the line ought to take. I must say, however, that it is likely to be an expensive line.

"In the north of the Bombay Presidency, considerable Railway extension has been sanctioned.

"The Bombay and Baroda Railway, the length of which is about 73 miles, is already in course of progress, and the construction of the line to Verungaum and Wudwan will be commenced as soon as the estimates are sanctioned.

"Madras also shares very largely in Railway extension.

"The Tramway Company's little line to Conjeveram, of which 19 miles will be re-laid on the standard gauge, is about to be extended 84 miles to Cuddalore. It will be re-named the 'Carnatic Railway,' and in respect to guarantee will be placed in the same position as the other Railways in India.

"It is hoped that a branch of this line will be made to Pondicherry, and the French Government have already expressed their desire to assist in the undertaking.

"Another line, 210 miles in length, from the present line to Tuticorin, is about to be constructed by the Great Southern of India Company. The surveys have been already undertaken, and it is hoped before long that the works will be commenced.

"In Burma surveys have been made from Rangoon to Prome, a distance of 168 miles.

"Investigations have been authorized, and from a communication received from the Chief Commissioner, it is hoped that advantage will be taken of converting the existing road into a line of Railway.

"In Bengal surveys have been authorized under direct Government agency for determining the best lines; but it is distinctly understood that the Government's having authorized these surveys, does not settle the question that they are to be constructed by direct Government agency.

"Much progress has yet to be made in the extension of the Eastern Bengal Railway to Goalunda.

"The delay in the construction of this work has been mainly due to the unfortunate accident at the Gorai Bridge.

"Further north, beyond the Ganges, the Oudh and Rohilkhand Company are pushing on their works.

"The Cawnpore Bridge is rapidly approaching completion, and we hope that before very long the Ganges will be bridged for the first time.

"The designs for the erection of another great bridge across the Ganges at Rájghât have been approved, and the earth-works for nearly the whole of the system of the Oudh and Rohilkhand Railway have been marked out.

"We believe that this system of lines under the able direction of the officers of the Company is likely to be made more cheaply and with greater economy than any Railway that has hitherto been made under guarantee in India, and General Beadle informed me the other day that, including the large bridges over the Ganges, he hoped that the average cost of the Oudh and Rohilkhand Railway would not exceed £11,000 a mile.

"A portion of this system includes the line from Moradabad to Ramnagar and the foot of the Himalayas and running near the Kumaon Iron Works, about 45 miles in length.

"In the Central Provinces orders have been lately issued by the Government for the survey of the line which will convey coal and iron lately discovered in those districts, and we hope during the ensuing year, the work will be actually commenced. The surveys east of the Wurdah have already been completed; we hope before a month or six weeks are over, we shall be in a position to decide with regard to the Oomraottee Branch in the Berars.

"But the two most important of the year in Railway are those connected with the Hyderabad State Railway and the proposed Railway to Indore.

"I am sure the public have heard with the greatest satisfaction that two Native Governments have proposed to come forward and subscribe a million of money each for Railway construction in their respective States.

"Sir Salar Jung has already made financial arrangements to construct a branch line from Goolburga to Hyderabad entirely at the expense of the Hyderabad State, and though it will really be under British management and constructed by British Engineers in a way similar to State-railways, it will be essentially the property of the Nizam's Government, and before three years and a half are over, we may hope that the Hyderabad State will be in possession of a Railway of its own.

"The Mahárájá Holkar has also made a proposition of a different kind, but which will have precisely the same result. He has agreed to lend

the Government at 4½ per cent. a million of money to construct a line which will meet the Great Indian Peninsula system somewhere near Khundwah.

"The financial arrangements in this matter have been perfectly satisfactory, and His Highness has proposed to place at the disposal of the Government of India more than half the amount in the first two years, the remainder being paid by instalments spread over a greater length of time.

"There is therefore no reason to doubt that, before very long, we shall see, in India two great Railways in process of construction entirely by capital supplied by Native States, one of which has determined to do the whole thing itself, and the other to place a sufficient sum in the hands of the Government to carry out the enterprise.

"In many ways the Government are endeavouring to provide materials for the construction of those works which they are about to undertake, with, if possible, much greater expedition and less waste of time than has hitherto attended their action in this respect.

"Attention has also been given to the provision of fuel; various investigations are being made in different directions with regard to coal and petroleum, which has been long known to exist in small quantities in the Panjáb and other parts of India.

"We hope that the Nerbudda Valley and also the Chanda District will before long produce a large supply of coal: we have heard of the existence of a large quantity of coal on the Godavery, and we have every prospect that during the ensuing year, or eighteen months, we shall be in a position to say that there is in this country a supply of coal sufficient to work a very large portion of the Railways at present in existence as well as those about to be constructed.

"Of course some districts will always be so remote that we cannot venture to hope that they will derive any very material benefit from this increase in the supply of coal, and for this reason efforts are about to be made in these cases to increase the supply of wood-fuel as much as possible.

"It is very late, and had I more time I could have brought to your notice many other interesting facts with regard to this important matter; but I am satisfied that, even brief and imperfect as is the statement I have now made, it will attract some attention generally to this subject; and I can truly say that there is nothing the Government of India value more than public support in these gigantic undertakings, which have no other object but the general good of the people of this vast empire."

The Motion was put and agreed to.

The Hon'ble SIR RICHARD TEMPLE having then applied to His Excellency the President to suspend the Rules for the Conduct of Business,

The President declared the Rules suspended.

The Hon'ble SIR RICHARD TEMPLE then introduced the Bill, and moved that it be referred to a Select Committee with instructions to report in a week.

The Motion was put and agreed to.

CUSTOMS DUTIES' BILL.

The Hon'ble SIR RICHARD TEMPLE then moved for leave to introduce a Bill to amend the law relating to Customs Duties.

The Motion was put and agreed to.

The Hon'ble SIR RICHARD TEMPLE then applied to His Excellency the President to suspend the Rules for the Conduct of Business,

The President declared the Rules suspended.

The Hon'ble SIR RICHARD TEMPLE then introduced the Bill, and moved that it be referred to a Select Committee with instructions to report in a week.

The Motion was put and agreed to.

The following Select Committees were named:—

On the Bill for imposing duties on Income and Profits arising from Offices, Property, Professions and Trades—The Hon'ble Messrs. Stephen, Forbes, Cowie, Chapman, Bullen Smith, Cockerell and the Mover.

On the Bill to amend the law relating to Customs' Duties—The Hon'ble Messrs. Stephen, Forbes, Cowie, Chapman, Bullen Smith and the Mover.

The Council adjourned to the 5th April 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

CALCUTTA,
The 2nd April 1870.

ENGLAND AND INDIA.

REVENUES AND RECEIPTS.	Actual, 1868-69.	Budget, 1869-70.	Regular, 1869-70.	Increase.	Decrease.	Budget, 1870-71.	Budget compared with Regular Estimate.
	£	£	£	£	£	£	£
I.—Land Revenue ...	20,246,575	21,075,500	21,537,278	461,778	...	21,023,632	—513,646
II.—Tributes and Contributions from Native States	687,363	693,200	765,143	71,943	...	737,073	—28,070
III.—Forest	407,342	436,600	476,090	39,490	...	588,780	+112,690
IV.—Excise on Spirits and Drugs	2,283,736	2,289,000	2,245,700	...	43,300	2,285,000	+39,300
V.—Assessed Taxes ...	508,700	900,000	1,051,600	151,600	...	2,180,000	+1,128,400
VI.—Customs	2,692,755	2,773,500	2,416,500	...	357,000	2,416,500	...
VII.—Salt	5,588,240	5,826,800	5,842,350	15,550	...	6,177,370	+335,020
VIII.—Opium	8,453,365	8,286,540	7,953,800	...	332,740	6,922,281	—1,031,519
IX.—Stamps	2,306,971	2,396,900	2,364,600	...	32,300	760,000	—1,604,600
X.—Mint	193,788	136,800	158,340	21,540	...	139,970	—18,370
XI.—Post Office ...	707,792	687,500	714,077	26,577	...	750,590	+36,513
XII.—Telegraph ...	274,497	244,000	238,000	...	6,000	193,056	—44,944
XIII.—Law and Justice ...	894,856	865,100	782,100	...	83,000	2,474,800	+1,692,700
XIV.—Police	277,237	301,400	265,960	...	35,440	251,966	—13,994
XV.—Marine	688,084	248,500	300,530	52,030	...	265,615	—34,915
XVI.—Education	73,711	83,400	73,958	...	9,442	78,574	+4,616
XVII.—Interest	275,560	289,600	356,850	67,250	...	365,321	+8,471
XVIII.—Miscellaneous ...	1,259,792	966,700	1,415,172	448,472	...	737,874	—677,298
	47,820,364	48,501,040	48,958,048	1,356,230	899,222	48,348,402	—609,646
Army	1,133,024	732,000	913,760	181,760	...	736,225	—177,535
Public Works	224,653	153,600	156,500	2,900	...	117,870	—38,630
Railways	2,479,617	2,856,300	2,914,174	57,874	...	3,125,258	+211,084
TOTAL ...	51,657,658	52,242,940	52,942,482	1,598,764	899,222	52,327,755	—614,727
Deficit, excluding Public Works Extraordinary ...	2,774,030	...	625,594				
Deficit, including Public Works Extraordinary	4,144,643	3,513,150	3,242,337	...	...	2,898,960	

EXPENDITURE.	Actual, 1868-69.	Budget, 1869-70.	Regular, 1869-70.	Increase.	Decrease.	Budget, 1870-71.	Budget compared with Regular Estimate.
	£	£	£	£	£	£	£
1.—Interest on Funded and Unfunded Debt ...	5,056,140	4,956,990	5,030,506	73,516	...	5,300,538	+270,032
2.—Interest on Service Funds and other Accounts ...	698,844	518,710	643,635	124,925	...	514,002	—129,633
3.—Allowances, Refunds, and Drawbacks	553,492	259,370	449,700	190,330	...	400,000	—49,700
4.—Land Revenue ...	2,485,508	2,542,320	2,460,210	...	82,110	2,497,612	+37,402
5.—Forest	260,464	284,850	319,934	35,084	...	437,540	+117,606
6.—Excise on Spirits and Drugs	302,284	263,050	261,050	...	2,000	288,994	+27,944
7.—Assessed Taxes ...	22,680	30,000	41,220	11,220	...	59,100	+17,880
8.—Customs	175,880	182,640	181,800	...	840	189,214	+7,414
9.—Salt	359,724	395,270	395,720	450	...	499,019	+103,299
10.—Opium	1,720,111	1,724,330	1,848,200	123,870	...	2,013,110	+164,910
11.—Stamps	115,932	120,335	110,462	...	9,873	68,363	—42,099
12.—Mint	115,422	98,554	102,455	3,901	...	95,908	—6,547
13.—Post Office	693,316	771,074	737,136	...	33,938	729,583	—7,553
14.—Telegraph	684,622	581,211	533,538	...	47,673	589,719	+56,181
15.—Administration ...	1,372,166	1,360,862	1,396,837	35,975	...	1,400,601	+3,764
16.—Minor Departments ...	218,543	255,785	246,138	...	9,647	239,167	—6,971
17.—Law and Justice ...	2,845,447	2,869,670	2,885,840	16,170	...	3,064,538	+178,698
18.—Police	2,476,580	2,374,290	2,440,900	66,610	...	2,319,964	—120,936
19.—Marine	1,140,630	883,227	1,265,109	381,882	...	784,100	—481,009
20.—Education	599,858	653,332	614,032	...	39,300	680,530	+66,498
21.—Ecclesiastical ...	168,590	169,100	162,840	...	6,260	169,795	+6,955
22.—Medical Services ...	418,220	456,066	467,967	11,901	...	503,654	+35,687
23.—Stationery and Printing...	397,704	281,338	362,600	81,262	...	344,250	—18,350
24.—Political Agencies and other Foreign Services	349,855	270,590	422,880	152,290	...	313,675	—109,205
25.—Allowances and Assignments under Treaties and Engagements ...	1,778,358	1,905,520	1,892,850	...	12,670	1,787,090	—105,760
26.—Miscellaneous ...	831,083	585,135	1,033,863	448,728	...	985,192	—48,671
27.—Superannuation, Retired, and Compassionate Allowances	1,669,968	945,600	1,249,572	303,972	...	1,376,253	+126,681
	27,406,421	25,739,219	27,556,994	2,062,086	244,311	27,651,511	+94,517
Army	16,269,581	16,054,061	16,476,892	422,831	...	15,745,341	—731,551
Public Works Ordinary ...	6,272,334	5,834,160	5,040,295	...	793,765	3,998,400	—1,041,995
Railways	4,483,352	4,562,850	4,493,795	...	69,055	4,769,068	+275,268
	54,431,688	52,190,290	53,568,076	2,484,917	1,107,131	52,164,315	—1,403,761
Public Works Extraordinary...	1,370,613	3,565,800	2,616,743	...	949,057	3,062,300	+445,557
TOTAL ...	55,802,301	55,756,090	56,184,819	2,484,917	2,056,188	55,226,615	—958,204
Surplus, excluding Public Works Extraordinary ...	...	52,650	...	...	...	163,440	...

EDWARD GAY,
Depy. Comptr. General of Accounts

E. F. HARRISON,
Comptr. General of Accounts.

R. B. CHAPMAN,
Offg. Secy. to the Govt. of India.

IN DIA.

REVENUES AND RECEIPTS.	ACTUAL, 1868-69.	BUDGET, 1869-70.	REGULAR, 1869-70.	INCREASE.	DECREASE.	BUDGET, 1870-71.
	£	£	£	£	£	£
I.—LAND REVENUE	20,246,575	21,075,500	21,537,278	461,778	...	21,023,632
II.—TRIBUTES AND CONTRIBUTIONS FROM NATIVE STATES ...	687,363	693,200	765,143	71,943	...	737,073
III.—FOREST	407,342	436,600	476,090	39,490	...	588,780
IV.—EXCISE ON SPIRITS AND DRUGS	2,283,736	2,289,000	2,245,700	...	43,300	2,285,000
V.—ASSESSED TAXES	508,700	900,000	1,051,600	151,600	...	2,180,000
VI.—CUSTOMS	2,692,755	2,773,500	2,416,500	...	357,000	2,416,500
VII.—SALT	5,588,240	5,826,800	5,842,350	15,550	...	6,177,870
VIII.—OPIUM	8,453,365	8,286,540	7,953,800	...	332,740	6,922,281
IX.—STAMPS	2,306,971	2,396,900	2,364,600	...	32,300	760,000
X.—MINT	193,788	136,800	158,340	21,540	...	139,970
XI.—POST OFFICE	707,792	687,500	714,077	26,577	...	750,590
XII.—TELEGRAPH	256,021	220,000	192,400	...	27,600	163,956
XIII.—LAW AND JUSTICE ...	894,856	865,100	782,100	...	83,000	2,474,800
XIV.—POLICE	277,237	301,400	265,960	...	35,440	251,966
XV.—MARINE	688,084	248,500	300,530	52,030	...	265,615
XVI.—EDUCATION	73,711	83,400	73,958	...	9,442	78,574
XVII.—INTEREST	224,523	261,600	322,850	61,250	...	337,321
XVIII.—MISCELLANEOUS	1,259,792	966,700	1,415,172	448,472	...	737,874
	47,750,851	48,449,040	48,878,448	1,350,230	920,822	48,291,302
ARMY	1,101,503	730,000	900,000	170,000	...	783,925
PUBLIC WORKS	224,653	153,600	156,500	2,900	...	117,870
RAILWAYS	2,479,617	2,856,300	2,903,930	47,630	...	3,125,258
TOTAL ...	51,556,624	52,188,940	52,838,878	1,570,760	920,822	52,368,355

FORT WILLIAM,
FINANCIAL DEPARTMENT, }
The 2nd April 1870.

EDWARD GAY,
Actg. Comptr. Genl. of Accounts.

EXPENDITURE.	ACTUAL, 1868-69.	BUDGET, 1869-70.	REGULAR, 1869-70.	INCREASE.	DECREASE.	BUDGET, 1870-71.
	£	£	£	£	£	£
1.—INTEREST ON FUNDED AND UNFUNDED DEBT	2,897,921	2,794,770	2,821,500	26,730	...	2,993,700
2.—INTEREST ON SERVICE FUNDS AND OTHER ACCOUNTS	598,844	518,710	643,635	124,925	...	514,002
3.—ALLOWANCES, REFUNDS, AND DRAWBACKS	553,492	259,370	449,700	190,330	...	400,000
4.—LAND REVENUE	2,485,508	2,542,320	2,460,210	...	82,110	2,497,612
5.—FOREST	260,464	284,850	319,934	35,084	...	437,540
6.—EXCISE ON SPIRITS AND DRUGS ...	302,284	263,050	261,050	...	2,000	288,994
7.—ASSESSED TAXES	22,680	30,000	41,220	11,220	...	59,100
8.—CUSTOMS	175,880	182,640	181,800	...	840	189,214
9.—SALT	359,724	395,270	395,720	450	...	499,019
10.—OPIUM	1,720,111	1,724,330	1,848,200	123,870	...	2,013,110
11.—STAMPS	95,419	96,410	101,720	5,310	...	48,012
12.—MINT	90,734	86,470	87,230	760	...	86,499
13.—POST OFFICE	577,554	706,120	673,182	...	32,938	664,886
14.—TELEGRAPH	411,881	447,000	437,451	...	9,549	356,792
15.—ADMINISTRATION	1,173,660	1,169,862	1,196,037	26,175	...	1,198,201
16.—MINOR DEPARTMENTS	218,543	255,785	246,138	...	9,647	239,167
17.—LAW AND JUSTICE	2,845,447	2,869,670	2,885,840	16,170	...	3,064,538
18.—POLICE	2,476,580	2,374,290	2,440,900	66,610	...	2,319,964
19.—MARINE	790,779	473,390	905,844	432,454	...	476,176
20.—EDUCATION	599,858	653,332	614,032	...	39,300	680,530
21.—ECCLESIASTICAL	163,590	169,100	162,840	...	6,260	169,795
22.—MEDICAL SERVICES	418,220	456,066	467,967	11,901	...	503,654
23.—STATIONERY AND PRINTING ...	243,875	227,790	249,040	21,250	...	260,625
24.—POLITICAL AGENCIES AND OTHER FOREIGN SERVICES	321,177	235,590	381,880	146,290	...	278,675
25.—ALLOWANCES & ASSIGNMENTS UNDER TREATIES AND ENGAGEMENTS ...	1,745,072	1,886,190	1,873,514	...	12,676	1,767,754
26.—MISCELLANEOUS	523,820	388,715	722,144	333,429	...	695,067
27.—SUPERANNUATION, RETIRED, & COMPASSIONATE ALLOWANCES ...	711,429	711,600	613,280	...	98,320	730,481
	22,784,546	22,202,690	23,482,008	1,572,958	293,640	23,433,107
ARMY	12,989,566	12,850,000	12,980,000	130,000	...	12,490,000
PUBLIC WORKS ORDINARY	6,122,004	5,664,000	4,774,800	...	889,200	3,998,400
RAILWAYS	588,969	422,850	358,795	...	64,055	406,063
	42,485,085	41,139,540	41,595,603	1,702,958	1,246,895	40,327,570
PUBLIC WORKS EXTRAORDINARY ...	1,017,958	2,253,800	1,446,700	...	807,100	3,062,300
TOTAL ...	43,503,043	43,393,340	43,042,303	1,702,958	2,053,995	43,389,870

E. F. HARRISON,
Comptroller General of Accounts.

R. B. CHAPMAN,
Offg. Secy. to the Govt. of India.

ENG

REVENUES AND RECEIPTS.	ACTUAL, 1868-69.	BUDGET, 1869-70.	REGULAR, 1869-70.	INCREASE.	DECREASE.	BUDGET, 1870-71.
	£	£	£	£	£	£
XII.—TELEGRAPH	18,476	24,000	45,600	21,600	...	29,100
XVII.—INTEREST	51,037	28,000	34,000	6,000	...	28,000
TOTAL ...	69,513	52,000	79,600	27,600	...	57,100
ARMY	31,521	2,000	13,760	11,760	...	2,300
RAILWAYS	...	...	10,244	10,244	...	...
TOTAL ...	101,034	54,000	103,604	49,604	...	59,400

EDWARD GAY,

Depy. Comptr. Genl. of Accounts.

LAND.

EXPENDITURE.	ACTUAL, 1868-69.	BUDGET, 1869-70.	REGULAR, 1869-70.	INCREASE.	DECREASE.	BUDGET, 1870-71.
	£	£	£	£	£	£
1.—INTEREST ON FUNDED AND UNFUNDED DEBT	2,158,219	2,162,220	2,209,006	46,786	...	2,306,838
11.—STAMPS	20,513	23,925	8,742	...	15,183	20,351
12.—MINT	24,688	12,084	15,225	3,141	...	9,409
13.—POST OFFICE	115,762	64,954	63,954	...	1,000	64,697
14.—TELEGRAPH...	272,741	134,211	96,087	...	38,124	232,927
15.—ADMINISTRATION	198,506	191,000	200,800	9,800	...	202,400
19.—MARINE	349,851	409,837	359,265	...	50,572	307,924
23.—STATIONERY AND PRINTING ...	153,829	53,548	113,560	60,012	...	83,625
24.—POLITICAL AGENCIES AND OTHER FOREIGN SERVICES	28,678	35,000	41,000	6,000	...	35,000
25.—ALLOWANCES AND ASSIGNMENTS UNDER TREATIES AND ENGAGEMENTS	33,286	19,330	19,336	6	...	19,336
26.—MISCELLANEOUS INCLUDING CIVIL FURLOUGH AND ABSENTEE ALLOWANCES	307,263	196,490	311,719	115,299	...	290,125
27.—SUPERANNUATION, RETIRED AND COMPASSIONATE ALLOWANCES ...	958,539	234,000	636,292	402,292	...	645,772
TOTAL ...	4,621,875	3,536,529	4,074,986	643,336	104,879	4,218,494
ARMY	3,280,015	3,204,061	3,496,892	292,831	...	3,255,241
PUBLIC WORKS ORDINARY	150,330	170,160	265,595	95,435	...	...
RAILWAYS	3,894,383	4,140,000	4,135,000	...	5,000	4,363,000
	11,946,603	11,050,750	11,972,473	1,031,602	109,879	11,836,745
PUBLIC WORKS EXTRAORDINARY ...	352,655	1,312,000	1,170,043	...	141,957	...
TOTAL ...	12,299,258	12,362,750	13,142,516	1,031,602	251,836	11,836,745

E. F. HARRISON,

Comptroller General of Accounts.

R. B. CHAPMAN,

Offg. Secy. to the Govt. of India.

R

Receipts and Payments in England

RECEIPTS.	England.	India.	Total.
	£	£	£
1. Opening balance	2,833.009	11,899,233	14,732,242
2. Ordinary income	101,035	51,315,782	51,416,817
3. Deposits repayable and advances recoverable, &c.	...	14,993,027	14,993,027
4. Local remittances	...	2,721,333	2,721,333
5. Interprovincial and interdepartmental transactions	..	16,325,157	16,325,157
6. Remittance account	219,670	1,666,104	1,885,774
6A. Abyssinian expedition	5,113,580	1,426,685	6,540,265
7. Bills of exchange	3,705,741	57,289	3,763,030
8. Railway capital	6,889,084	40,062	6,429,146
9. Borrowed	1,534,189	992,481	2,526,620
Total ...	19,896,258	101,437,153	121,333,411

ABSTRACT OF THE ABOVE, SHOWING HOW THE WAYS

Cash balance reduced	£	1,530,457
Local remittances	„	2,354,997
Interprovincial and interdepartmental transactions	„	566,693
Railway capital receipts in excess of expenditure	„	1,563,653
Borrowed	„	744,506
Total ...	£	6,760,306

Fort William;
Financial Department,
The 2nd April 1870.

EDWARD GAY,
Depy. Comptr. Genl. of Accounts.

and India during the Year 1868-69

PAYMENTS.	England.	India.	Total.
	£	£	£
10. Ordinary expenditure	11,946,604	42,244,243	54,190,847
10A. Extraordinary expenditure	352,655	1,017,958	1,370,613
11. Deposits repaid and advances recoverable, &c.	...	15,363,614	15,363,614
12. Local remittances	...	366,336	366,336
13. Interprovincial and interdepartmental transactions	...	15,758,464	15,758,464
14. Remittance account	942,100	1,140,644	2,082,744
14A. Abyssinian expedition	825,248	7,090,347	7,915,595
15. Bills of exchange	...	4,435,806	4,435,806
16. Railway capital	2,301,170	2,564,323	4,865,493
17. Debt paid	502,500	1,279,614	1,782,114
18. Closing balance	3,025,981	10,175,804	13,201,785
Total ...	19,896,258	101,437,153	121,333,411

AND MEANS OF THE YEAR HAVE BEEN PROVIDED.

Deficit on ordinary account	£	2,774,080
Extraordinary expenditure	„	1,370,613
Deposits repayable and advances recovered	„	370,587
Remittances	„	196,970
Abyssinian advances	„	1,375,330
Bills of exchange	„	672,776
Total ...	£	6,760,306

R. F. HARRISON,
Comptroller General of Accounts.

R. B. CHAPMAN,
Offg. Secy. to the Govt. of In.

Estimated Receipts and Payments in England

RECEIPTS.	England.	India.	Total.
	£	£	£
1. Opening balance	3,025,981	10,175,804	13,201,785
2. Ordinary income	103,604	52,838,878	52,942,482
3. Deposits repayable and advances recovered, &c.	...	14,653,663	14,653,663
4. Local remittances	...	827,776	827,776
6. Remittance account between England and India	219,000	1,412,910	1,631,910
6A. Abyssinian recoveries	1,301,388	...	1,301,388
7. Bills of exchange	7,080,000	...	7,080,000
8. Railway capital	4,051,000	...	4,051,000
9. Borrowed	2,683,000	4,312,940	6,995,940
Total ...	18,463,973	84,221,971	102,685,944

ABSTRACT OF THE ABOVE, SHOWING HOW THE WAYS AND

Local remittances	£	350,665
Remittances, England and India	„	110,226
Abyssinian recoveries	„	917,819
Bills of exchange	„	1,264,300
Borrowed	„	4,289,500
Total ...	£	6,932,510

Fort William;
Financial Department,
The 2nd April 1870.

EDWARD GAY,
Deputy Comptr. Genl. of Accounts.

and India during the year 1869-70.

PAYMENTS.	England.	India.	Total.
	£	£	£
10. Ordinary Expenditure	11,972,473	41,595,603	53,568,076
10A. Extraordinary do.	1,170,043	1,446,700	2,616,743
11. Deposits repaid and advances recoverable, &c.	...	15,879,082	15,879,082
12. Local remittances	...	477,111	477,111
14. Remittance account between England and India	1,128,408	393,276	1,521,684
14A. Abyssinian expedition	1,569	382,000	383,569
15. Bills of exchange	...	5,815,700	5,815,700
16. Railway capital	2,370,000	2,382,500	4,752,500
17. Debt paid	501,300	2,205,140	2,706,440
18. Balance (closing) ...	1,320,180	13,644,859	14,965,039
Total	18,463,973	84,221,971	102,685,944

MEANS OF THE YEAR ARE ESTIMATED TO BE PROVIDED.

Deficit on ordinary account	£	625,594
Extraordinary expenditure	„	2,616,743
Deposits and advances	„	1,225,419
Railway capital	„	701,500
Cash balance increased	„	1,763,254
Total ...	£	6,932,510

E. F. HARRISON,
Comptr. Genl. of Accounts.

R. B. CHAPMAN,
Offg. Secy. to the Govt. of India.

Estimated Receipts and Payments in England

RECEIPTS.	England.	India.	Total.
	£	£	£
1. Opening balance	1,320,180	13,644,859	14,965,039
2. Ordinary income	59,400	52,268,355	52,327,755
3 Deposits repayable and advances recovered, &c.	...	12,554,698	12,554,698
4. Local remittances	...	263,342	263,342
6. Remittance account between England and India	202,000	1,725,442	1,927,442
6A. Abyssinian recoveries	100,000	...	100,000
7. Bills of exchange	9,500,000	...	9,500,000
8. Railway capital	4,624,000	...	4,624,000
9. Borrowed	2,000,000	3,808,770	5,808,770
Total ...	17,805,580	84,265,466	102,071,046

ABSTRACT OF THE ABOVE, SHOWING HOW THE WAYS AND

Cash balance reduced	£ 2,376,589
Surplus in ordinary account	„ 163,440
Local remittances	„ 66,066
Remittance, England and India	„ 12,506
Abyssinian recoveries	„ 100,000
Borrowed	„ 3,588,300
Total ...	£ 6,306,901

Fort William;
FINANCIAL DEPARTMENT,
The 2nd April 1870.

EDWARD GAY,
Offg. Comptr. Genl. of Accounts.

and India during the Year 1870-71.

PAYMENTS.	England.	India.	Total.
	£	£	£
10. Ordinary expenditure	11,836,745	40,327,570	52,164,315
10A. Extraordinary do.	...	3,062,300	3,062,300
11. Deposits repaid and advances recoverable, &c.	...	14,754,499	14,754,499
12. Local remittances	...	197,276	197,276
14. Remittance account between England and India	1,652,828	262,108	1,914,936
14A. Abyssinian expedition	...	...	...
15. Bills of exchange	...	10,000,000	10,000,000
16. Railway capital	2,297,000	2,871,800	5,168,800
17. Debt paid	...	2,220,470	2,220,470
18. Balance (closing)	2,019,007	10,569,443	12,588,450
Total ...	17,805,580	84,265,466	102,071,046

MEANS OF THE YEAR ARE ESTIMATED TO BE PROVIDED.

Extraordinary expenditure	£ 3,062,300
Deposits and advances	„ 2,199,801
Bills of exchange	„ 500,000
Railway capital	„ 544,800
Total ...	£ 6,306,901

E. F. HARRISON,
Comptroller General of Accounts.

R. B. CHAPMAN,
Offg. Secy. to the Govt. of India.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

PUBLIC WORKS BUDGET ESTIMATES FOR 1870-71.

Note by LIEUT.-COL. G. CHESNEY, *Accountant General, Public Works Department, on the Budget-Estimate of the Public Works Department for* 1870-71.

I submit herewith the Budget-Estimate of the Public Works Department for 1870-71, based on the orders of the Government of India on the several Provincial Budget-Estimates.

PUBLIC WORKS EXPENDITURE.

2. The estimate amounts to £7,475,560, distributed as follows :—

ORDINARY.

	£	£
Public Works—		
Grant sanctioned in Financial Department Resolution No. 3330, dated 20th December 1869	4,000,000	
Less reduction in grant assigned in Bombay, on account of sum allowed for expenditure in 1869-70, *vide* Memorandum to Financial Department, No. 125½ A—G, dated 4th March 1870	10,000	
	3,990,000	
Add amount transferred from Budget-Estimate of Forest Department, on account of conservancy of Canal Plantations in North Western Provinces and Punjab, *vide* Public Works Department Resolution No. 1 F, dated 21st February 1870 ...	8,400	
		3,998,400
State outlay on Guaranteed Railways—		
Control and Purchase of land	145,360	
Gross loss by Railway exchange	202,000	
		347,360
Calcutta and South-Eastern State Railway		12,500
TOTAL ORDINARY		4,358,260

EXTRAORDINARY.

	£	£
Irrigation Works—		
Grant assigned in Public Works Department Circular No. 96 of 1869	1,800,000	
Less—Reductions made subsequently in grants to—	£	
Bombay	12,500	
North Western Provinces	50,000	
Punjab	5,000	
	67,500	
		1,732,500
State Railways		1,229,800
Port Trust Works, Bombay		155,000
TOTAL EXTRAORDINARY ...		3,117,300
GRAND TOTAL ...		7,475,560

3. These grants provide for the expenditure estimated to be incurred by the Secretary of State in England on stores for the Public Works Department, amounting to £569,600, as follows :—

	£	£
Ordinary—		
Stores...	294,400	
Miscellaneous	650	
		295,050
Extraordinary—		
Stores	264,000	
Payments on account of Calcutta and South-Eastern Railway ...	10,550	
		274,550
		569,600

The first item appears to be somewhat over-estimated, and may perhaps be reduced to £121,000. On this point the Financial Department have already been addressed in Public Works Department Office Memorandum No. 113 A—G, dated 25th February 1870.

4. Compared with the reduced grants for the current year, the allotment for 1870-71 stands as follows, but it is doubtful if the grant of 1869-70 for Extraordinary works will all be spent :—

	Grant, 1869-70.	Grant, 1870-71.	Difference. Increase.	Difference. Decrease.	Remarks.
Ordinary.	£	£	£	£	
Public Works	A 4,896,800	3,998,400	...	898,400	A. Includes additional grant of £ 22,800 to Bombay, and £ 2,500 to Rajpootana.
State outlay on Guaranteed Railways	159,450	145,360	...	14,090	
Loss by Railway exchange ...	B 237,000	202,000	...	35,000	B. Regular-Estimate.
State outlay on Railways ...	13,000	12,500	...	500	
	5,306,250	4,358,260	...	947,990	
Extraordinary.					
Irrigation Works	1,650,000	1,732,500	82,500	...	
State outlay on Railways ...	253,800	1,229,800	976,000	...	
Bombay Special Fund	500,000	...	...	500,000	
Port Trust Works	45,000	155,000	110,000	...	
East Coast Canal, Madras ..	7,000	...	...	7,000	
	2,455,800	3,117,300	661,500	...	
Grand Total ...	7,762,050	7,475,560	...	282,490	

5. The grant for 1869-70 *excludes* value of stores from London, whereas the grant for 1870-71 includes them. The reduction in the grant under head "Public Works" is really therefore £1,164,000, as follows :—

	£
Reduction as shown in above statement	898,400
Add probable payment in England during 1869-70 for stores for the Public Works Department not provided for in Public Works grant	265,595
Total ...	1,163,995

This reduction is further exclusive of the charges heretofore debited to the Bombay Special Fund, but which have now to be provided for from the Ordinary grant owing to the abolition of that Fund.

Public Works Revenue.

6. The estimated receipts under this head during 1870-71 amount to £ 588,110 as follows, as compared with the revised Regular-Estimate of 1869-70 :—

	1870-71.	1869-70.	Decrease.
	£	£	£
Revenue, Miscellaneous	117,870	130,000	12,130
„ Irrigation	(A) 462,740	522,990	60,250
„ Calcutta and South-Eastern Railway ...	7,500	7,500	...
„ Bombay Special Fund...	...	22,970	22,970
	588,110	683,460	95,350

(A.) Includes £7,400 transferred from the Forest Budget estimate on account of probable receipts from Canal Plantations in N. W. P. and Punjab.

7. The decrease of £12,130 under head "Revenue, Miscellaneous" is due to the exclusion from the estimate of the value of stores supplied by the Secretary of State for Foreign States, Local Funds and Government workshops, which are now to be adjusted, not by a credit to Revenue, but by means of a remittance account. The reduction due to this cause, which is merely nominal, is about £28,200.

8. There is a decrease in Irrigation revenue of £ 60,250. The receipts in 1869-70 have been exceptionally large owing to the drought of the previous year.

9. No receipts are expected during 1870-71 on account of the late Bombay Special Fund.

10. An abstract of the estimated total receipts and disbursements of the Public Works Department on all accounts is also submitted herewith.

Calcutta,
9th March 1870.

G. CHESNEY,
Accountant General.

PUBLIC WORKS DEPARTMENT.

BUDGET-ESTIMATE OF EXPENDITURE FROM IMPERIAL FUNDS ON PUBLIC WORKS IN INDIA FOR THE YEAR 1870-71.

	Madras.	Bombay.	Bengal.	N. W. Provinces.	Punjab.	Central Provinces.	British Burmah.	Oudh.	Hyderabad.	Rajpootana.	Central India.	Coorg.	Port Blair.	Total.
Ordinary Expenditure.	£	£	£	£	£	£	£	£	£	£	£	£	£	£
Military.														
Original Works	40,000	232,500	100,000	102,700	171,000	64,600	26,400	33,300	21,900	36,000	80,000	...	4,650	913,050
Repairs	20,000	45,000	40,000	31,800	29,000	6,000	8,600	11,700	4,900	3,000	14,000	...	350	214,350
	60,000	277,500	140,000	134,500	200,000	70,600	35,000	45,000	26,800	39,000	94,000	...	5,000	1,127,400
Agricultural.														
Original Works	39,620	40,000	30,000	15,900	23,000	5,000	15,900	...	...	...	...	...	...	169,420
Repairs	120,000	50,000	40,000	45,000	54,400	...	2,600	...	...	10,000	...	500	...	322,500
State outlay on Guaranteed Irrigation Works ...	5,380	...	...	...	...	...	...	...	...	...	...	...	...	5,380
	165,000	90,000	70,000	60,900	77,400	5,000	18,500	...	...	10,000	...	500	...	497,800
Other Services.														
Civil Buildings .. { Original Works ...	48,700	100,000	100,500	50,000	37,200	11,300	20,800	16,000	1,200	2,500	3,300	1,300	4,000	396,800
Civil Buildings .. { Repairs	11,000	25,000	50,000	15,300	4,600	3,400	3,900	4,500	500	500	1,700	200	600	121,200
Communications ... { Original Works ...	27,000	72,500	58,400	21,700	27,500	80,600	46,100	18,400	...	18,000	30,550	980	...	401,730
Communications ... { Repairs	93,000	35,000	96,700	77,500	53,300	21,700	13,700	14,500	...	2,000	28,050	4,420	...	439,870
Miscellaneous Public { Original Works ...	2,380	27,500	2,600	...	2,300	...	2,800	...	...	...	...	130	...	37,710
Improvement ... { Repairs	1,500	2,500	100	300	1,100	1,000	500	...	...	...	...	...	...	7,[illegible]
Establishment	130,920	150,000	175,200	141,400	131,300	47,400	39,700	28,100	5,800	12,500	39,900	2,370	2,700	907,[illegible]
Tools and Plant	13,000	12,500	9,000	6,500	8,100	6,500	1,500	1,000	700	500	2,500	100	200	62,100
Total ...	327,500	425,000	492,500	312,700	265,400	171,900	129,000	82,500	8,200	36,000	106,000	9,500	7,500	2,373,700
Total of above three heads ...	552,500	792,500	702,500	508,100	542,800	247,500	182,500	127,500	35,000	85,000	200,000	10,000	12,500	3,998,400
State outlay on Railways.														
Guaranteed Railways	20,470	80,700	14,000	15,400	5,700	...	...	9,090	...	...	...	...	...	145,360
Calcutta and South-Eastern Railway ...	...	...	12,500	...	...	...	...	...	...	...	...	...	...	12,500
Gross loss by Railway exchange	24,580	77,330	68,260	...	31,830	...	...	...	...	...	...	...	...	202,000
Total Ordinary ...	597,550	950,530	797,260	523,500	580,330	247,500	182,500	136,590	35,000	85,000	200,000	10,000	12,500	4,358,260
Extraordinary Expenditure.														
Irrigation Works ... { Original Works ...	188,000	205,000	282,000	215,600	199,400	51,000	...	105,400	...	...	...	...	...	1,246,400
Irrigation Works ... { Establishment ...	30,000	45,000	73,000	60,000	63,600	6,000	...	23,100	...	...	...	...	...	300,700
Irrigation Works ... { Tools and Plant ...	2,000	7,500	45,000	24,400	72,000	3,000	...	31,500	...	...	...	...	...	185,400
	220,000	257,500	400,000	300,000	335,000	60,000	...	160,000	...	...	...	...	...	1,732,500
State Railways	...	15,000	15,500	314,300	885,000	...	...	...	...	...	...	...	...	1,229,800
Port Trust Works	...	155,000	...	...	...	...	...	...	...	...	...	...	...	155,000
Total Extraordinary ...	220,000	427,500	415,500	614,300	1,220,000	60,000	...	160,000	...	...	...	...	...	3,117,300
Grand Total ...	817,550	1,378,030	1,212,760	1,137,800	1,800,330	307,500	182,500	296,590	35,000	85,000	200,000	10,000	12,500	7,475,560

BUDGET-ESTIMATE OF THE

GENERAL ABSTRACT OF ESTIMATED EXPENDITURE FROM IMPERIAL FUNDS ON PUBLIC

	Military.		Civil Buildings.		Agricultural.		Communications.	
	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.	Original Works.	Repairs.
	£	£	£	£	£	£	£	£
Madras ...	40,000	20,000	48,700	11,000	227,620	120,000	27,000	93,000
Bombay ...	232,500	45,000	100,000	25,000	245,000	50,000	72,500	35,000
Bengal ...	100,000	40,000	100,500	50,000	312,000	40,000	58,400	96,700
N.-W. Provinces ...	102,700	31,800	50,000	15,300	231,500	45,000	21,700	77,500
Punjab ...	171,000	29,000	37,200	4,600	222,400	54,400	27,500	53,300
Central Provinces ...	64,600	6,000	11,300	3,400	56,000	...	80,600	21,700
British Burmah ...	26,400	8,600	20,800	3,900	15,900	2,600	46,100	13,700
Oudh ...	33,300	11,700	16,000	4,500	105,400	...	18,400	14,500
Hyderabad ...	21,900	4,900	1,200	500	...	...	...	...
Rajpootana ...	36,000	3,000	2,500	500	...	10,000	18,000	2,000
Central India ...	80,000	14,000	3,300	1,700	...	...	30,550	28,050
Coorg ...	...	...	1,300	200	...	500	980	4,420
Port Blair ...	4,650	350	4,000	600	...	...	...	...
Total ...	913,050	214,350	396,800	121,200	1,415,820	322,500	401,730	489,870

PUBLIC WORKS DEPARTMENT FOR 1870-71.

WORKS IN INDIA FOR THE YEAR FROM 1st APRIL 1870 TO 31st MARCH 1871.

Miscellaneous Public Improvement.		Total.		Establishment.	Tools and Plant.	State outlay on Guaranteed Irrigation Works.	Total Public Works Grant.	State outlay on Guaranteed Railways including loss by Exchange.	Outlay on State Railways.	Total Imperial Estimate.
Original Works.	Repairs.	Original Works.	Repairs.							1870-71.
£	£	£	£	£	£	£	£	£	£	£
2,380	1,500	345,700	245,500	160,920	15,000	5,380	772,500	45,050	...	817,550
175,000	2,500	825,000	157,500	202,500	20,000	...	1,205,000	158,030	15,000	1,378,030
2,600	100	573,500	226,800	248,200	54,000	...	1,102,500	82,260	28,000	1,212,760
...	300	405,900	169,900	201,400	30,900	...	808,100	15,400	314,300	1,137,800
2,300	1,100	460,400	142,400	194,900	80,100	...	877,800	37,530	885,000	1,800,330
...	1,000	212,500	32,100	53,400	9,500	...	307,500	...	...	307,500
2,800	500	112,000	29,300	39,700	1,500	...	182,500	...	...	182,500
...	...	173,100	30,700	51,200	32,500	...	287,500	9,090	...	296,590
...	...	23,100	5,400	5,800	00	...	35,000	...	...	35,000
...	...	56,500	15,500	12,500	500	...	85,000	...	...	85,000
...	...	113,850	43,750	39,900	2,500	...	200,000	...	...	200,000
130	...	2,410	5,120	2,370	100	...	10,000	...	...	10,000
...	...	8,650	950	2,700	200	...	12,500	...	...	12,500
185,210	7,000	3,312,610	1,104,920	1,215,490	247,500	5,380	5,885,900	347,360	1,242,300	7 475,560

PUBLIC WORKS DEPARTMENT.

BUDGET-ESTIMATE OF IMPERIAL REVENUE OF THE PUBLIC WORKS DEPARTMENT TO BE RECEIVED DURING THE YEAR 1870-71.

Governments and Administrations.	Budget-Estimate, 1869-70.	Regular-Estimate, 1869-70.	Budget-Estimate, 1870-71.	Difference between Regular and Budget-Estimate. Increase.	Decrease.
	£	£	£	£	£
Ordinary.					
Revenue Miscellaneous.					
Madras	15,000	15,000	15,000	..	...
Bombay	22,500	22,500	27,210	4,710	
Bengal	30,000	26,260	25,000	...	
North Western Provinces	30,000	28,000	20,000	...	8,000
Punjab	17,500	17,500	12,800	...	4,700
Central Provinces	5,000	5,250	5,000	...	250
British Burmah	3,910	3,960	3,850	...	110
Oudh	1,500	1,300	1,300	...	
Hyderabad	2,070	3,260	2,570	...	690
Rajpootana	950	950	1,000	50	
Central India	5,000	7,000	4,000	...	3,000
Coorg	5,125	6,436	130	...	6,306
Port Blair	...	10	10	...	...
	138,555	137,426	117,870		19,556
Revised Estimate	...	130,000	117,870	...	12,130
Irrigation.					
Madras	...	...	...	...	...
Bombay	15,000	4,290	3,540	...	...
Bengal	15,000	8,200	12,000	3,800	750
North Western Provinces	260,000	A 312,000	276,500		35,500
Punjab	190,000	A 198,500	170,700		27,800
	480,000	522,990	462,740	...	60,250
Railways.					
Calcutta and South-Eastern Railway ..	8,200	A 7,500	7,500	...	...
	8,200	7,500	7,500	...	...
Total Ordinary (revised) ...	626,755	660,490	588,110	...	72,380
Extraordinary.					
Bombay Special Fund	15,000	22,970	...	...	22,970
Total Extraordinary ...	15,000	22,970	...	...	22,970
Grand Total ...	641,755	683,460	588,110	..	95,350

A—Revised estimate, *vide* Public Works Department Memo. to Financial Department, No. 121 A G, dated 2nd March 1870.

PUBLIC WORKS DEPARTMENT.

BUDGET-ESTIMATE OF THE RECEIPTS AND EXPENDITURE OF THE PUBLIC WORKS DEPARTMENT FOR 1870-71.

Receipts.	Amount.	Total.	Expenditure.	Amount.	Total.
	£	£		£	£
To Balance—			By Expenditure against Budget grant	...	7,475,560
Estimated cash in hand on 1st April 1870 ...	71,880		By Payments on account of Civil Department—		
,, amount at credit of Drawing Account on 1st April 1870	208,300	280,180	Payments into Government Treasuries ...	611,290	
To Receipts from Civil Department—			Public Works revenue and other receipts realized in Civil Department	628,600	
Credit Orders	7,734,195		Local Fund expenditure by Officers of the Public Works Department	582,600	
Local Fund Receipts	10,135		Gross gain by Railway exchange	265,630	2,088,120
Deductions for Service Funds ...	7,700		By Payments on account of Military Department ...	...	...
Payments for land for Public Works and Railways...	185,000		By Payments from Debt heads of Account—		
Transfers	165,000		Stock purchases and sales	276,000	
Gross loss by Railway exchange	202,000	8,324,030	Barrack Department	7,950	
To Receipts from Military Department	...	47,100	Expenditure on account of Tucavee works ...	...	
To London Account—			,, of Miscellaneous advances ...	173,790	
Recoveries of advances made in London	15,100		,, Payments from deposits	242,500	
Estimated payments in England for stores in the Public Works Department	391,400	406,500	Transfers	211,000	911,240
To Receipts on account of Revenue—			By Balance—		
Revenue from Public Works	588,110		Estimated cash in hand on 31st March 1871.... ...	72,800	
Gross gain by Railway Exchange ...	265,630	853,740	,, amount at credit of Drawing Account on same date	219,200	292,000
To Receipts from Debt heads of Account—					
Stock purchases and sales	277,200		Grand Total ...	...	10,766,920
Barrack Department	8,450				
Recoveries on account of Tucavee works	8,950				
,, of Miscellaneous advances ...	168,000				
,, Receipts from deposits	181,770				
Transfers	211,000	855,370			
Grand Total ...	...	10,766,920			

Note.—In this estimate the credits and debits to London on account of Capital and Revenue Account of Guaranteed Railways have been omitted, the same being shown in the Railway Budget-Estimate.

W

Note by LIEUT.-COL. G. CHESNEY, *Accountant General, Public Works Department, on the Budget-Estimate of Guaranteed Railways for* 1870-71.

I submit herewith the Budget-Estimate of Guaranteed Railways for 1870-71, compared with the Regular and Budget-Estimates of 1869-70, and based on the orders of the Government of India on the several Provincial Budget-Estimates. The following points may be noted:—

STATE EXPENDITURE.

2. The Regular-Estimate for 1869-70, excluding outlay debitable to the Bombay Special Fund, amounts to £375,620 against a Budget-Estimate of £174,050, but the increase of £201,570 is nominal only, being due to the change sanctioned in Financial Department Resolution No. 4378, dated 30th October 1869, under which the exchange account is to be shown in the gross, loss and gain being entered on both sides of the account. This estimate of gain for 1869-70 is £238,000, so that the net Ordinary State charges for Guaranteed Railways, excluding interest, amount to £137,620 against a Budget-Estimate of £174,050.

3. For 1870-71 the State charges amount to £347,360, of which £202,000 is on account of gross loss by exchange, the gross gain being £ 265,630. The balance of charge, £145,360, is for Establishment and Purchase of Land as follows:—

	1870-71. Budget-Estimate.	1869-70. Regular-Estimate.	Increase.
	£	£	£
Establishment	45,980	42,600	3,380
Purchase of land	99,380	96,020	3,360
	145,360	138,620	6,740

4. The increase of £3,380 under Establishment is made up of £1,000 for Military pay of Officers of Engineers seconded; the pay of a Deputy Consulting Engineer for Railways in Oudh; an increase in the pay of the Deputy Consulting Engineer in Punjab; and £1,200 for Establishment for examining and registering lands in possession of Railway Companies in Bombay.

5. The charges from 1864-65 have been as follows:—

	£
1864-65	30,705
1865-66	37,813
1866-67 (11 months)	34,511
1867-68	41,090
1868-69	38,502
1869-70 (Regular-Estimate)	42,600
1870-71 (Budget-Estimate)	45,980

6. Of the estimate of £99,380 for land, £51,500 is for the reclamation of Back Bay, and the purchase of property to give access to the new Railway terminus at Colaba. The abolition of the Bombay Special Fund has thrown this amount as a charge against Ordinary Revenue. Omitting this, the ordinary estimated charge for State expenditure on Railways for 1870-71 would have been only £ 93,860, against an estimated charge of £ 138,620 for 1869-70.

7. The following reductions have been made by the Government of India in the several Provincial Budget-Estimates for 1870-71:—

GOVERNMENTS AND ADMINISTRATIONS.	AMOUNT OF ESTIMATE AS SUBMITTED.	AMOUNT AS PASSED.	DECREASE.
	£	£	£
Madras	20,367	20,470	+ 103
Bombay	156,061	80,700	75,361
Bengal	26,930	14,000	12,930
North-Western Provinces	25,000	15,400	9,600
Punjab	6,350	5,700	650
Central Provinces	55	...	55
Oudh	9,015	9,090	+ 75
	243,778	145,360	98,418

NET ADVANCES IN INDIA ON ACCOUNT OF GUARANTEED RAILWAYS.

8. The Regular-Estimate under this head for 1869-70 amounts to £ 2,936,700, the Budget-Estimate for 1870-71 being £ 2,871,800. If these sums are spent, the aggregate of the Capital Account of the several Railway Companies will be as follows:—

Receipts.

	£
Amounts received from the several Railway Companies on account of Capital and Debentures up to end of 1868-69	82,376,625
Estimated receipts in 1869-70	4,051,000
Ditto ditto in 1870-71	4,624,000
... ...	

Withdrawals.

Amount withdrawn to end of 1868-69, *viz.*—

	£	
In England	31,553,110	
„ India	47,527,412	
		79,080,522
Estimated withdrawals in 1869-70—		
In England	2,370,000	
„ India	2,936,700	
		5,306,700
Estimated withdrawals in 1870-71—		
In England	2,297,000	
„ India	2,871,800	
		5,168,800
		89,556,022
Estimated balance at credit of several Companies on 1st April 1871 ...		1,495,603

9. No information is available as to the items comprising the estimated withdrawals in England during 1869-70 and 1870-71. The expenditure in England amounts to nearly as much as is incurred in India, and I merely draw attention to the circumstance as indicating the necessity for the exercise of as great a check in England as in India, to prevent the undue expansion of the Capital Account.

ESTIMATE OF TRAFFIC EARNINGS.

10. The Regular-Estimate for 1869-70 amounts to £2,539,000, being £65,700 less than the Budget-Estimate, and but for a special credit of £135,000 to the Revenue Account on account of value of stores transferred from debit of Revenue to that of Capital, Sindh Railway, the difference would have been £200,700.

11. This large difference is due to a payment of £81,300 to the East Indian Railway on account of the moiety of the surplus profits for the first half of 1869, and to a general falling off in the traffic earnings in the Railways under the Government of Bombay, in the Jubbulpoor Extension of the East Indian Railway, the Eastern Bengal Railway, the Punjab Railway, and the Oudh and Rohilkhund Railway.

12. For 1870-71 the estimate of traffic earnings, after deduction of a sum of £90,000 on account of moiety of surplus profits East Indian Railway to be paid to shareholders, amounts to £2,840,570. This is on the supposition that the line to Bombay and some further portions of the Delhi Railway will be open for traffic by the 1st April 1870. Strict economy in the working expenses has also been calculated upon.

13. The estimated payments during 1870-71 on account of Guaranteed Interest amount to £4,363,000, so that the net charge on the Indian Revenues under this head amounts to £1,522,430, the estimated charge for 1869-70 being £1,594,870.

14. The following Statement of the probable transactions of the Madras Irrigation and Canal Company is given:—

	Budget-Estimate, 1870-71.	Regular-Estimate, 1869-70.	Budget-Estimate, 1869-70.
	£	£	£
Advances on Construction Account.			
Amount to be obtained in India ...	...	...	5,500
„ „ in England ...	137,500	172,900	214,500
	137,500	172,900	220,000
Revenue Account.			
Gross earnings	9,900	1,630	9,900
Working expenses	2,300	500	2,300
Net Revenue ...	7,600	1,130	7,600

The falling off in the estimated net Revenue of 1869-70 is explained to be due to the main and distributary channels having been in a much less forward condition than was expected.

FORT WILLIAM,
The 25th February, 1870.

G. CHESNEY,
Accountant General.

PUBLIC WORKS DEPARTMENT.

BUDGET-ESTIMATE OF GUARANTEED RAILWAYS, 1870-71.

Abstract of the Charges and Revenue on account of Guaranteed Railways for 1870-71 *as compared with the Budget and Regular Estimate for* 1869-70.

PART.		BUDGET-ESTIMATE, 1870-71.	REGULAR-ESTIMATE, 1869-70.	BUDGET-ESTIMATE, 1869-70.
	STATE EXPENDITURE ON RAILWAYS.	£	£	£
	Ordinary Charges.			
I	Establishment and Land ...	145,360	138,620	159,450
II	Gross loss by Railway Exchange ...	202,000	237,000	A 14,600
	Total Ordinary ...	347,360	375,620	174,050
	Extraordinary Charges.			
	Land, Bombay Special Fund ...	...	47,500	60,000
	TOTAL STATE EXPENDITURE ...	347,360	423,120	234,050
	ADVANCES ON RAILWAY CAPITAL ACCOUNT.			
III	Net Advances ...	2,871,800	2,936,700	3,255,100
	IMPERIAL REVENUE.			
IV	Net railway traffic earnings to be credited to Government ...	2,840,570	2,539,000	2,604,700
	Net revenue from Madras Irrigation and Canal Company	7,600	1,130	7,600
	Total ...	2,848,170	2,540,130	2,612,300
II	Add Gain by Railway Exchange ...	265,630	238,000	...
	TOTAL IMPERIAL REVENUE ...	3,113,800	2,778,130	2,612,300

A.—Net loss by Railway Exchange.

PUBLIC WORKS DEPARTMENT.

BUDGET-ESTIMATE OF THE RAILWAY DEPARTMENT FOR 1870-71.

Part I.

Abstract of the estimated State Expenditure on control of, and purchase of land for Guaranteed Railways for the year from 1st April 1870 to 31st March 1871, as contrasted with the Regular and Budget-Estimate for 1869-70.

CONTROL.	TOTAL.			LAND.			CONTROL.		
1870-71.	1869-70.			1870-71.	1869-70.		1870-71.	1869-70.	
	Regular-Estimate.	Budget-Estimate.		Budget-Estimate.	Regular-Estimate.	Budget-Estimate.	Budget-Estimate.	Regular-Estimate.	Budget-Estimate.
Rs.	Rs.	Rs.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
2,04,700	85,200	1,04,200	Madras	1,38,300	20,000	39,000	66,400	65,200	65,200
8,07,000	4,00,000	5,69,200	Bombay ... { Ordinary Charges	6,15,000	2,30,800	4,00,000	1,92,000	1,69,200	1,69,200
...	4,75,000	6,00,000	Special Fund ...	...	4,75,000	6,00,000	...	...	...
1,40,000	2,86,500	2,86,500	Bengal	50,000	1,82,000	1,82,000	90,000	1,04,500	1,04,500
1,54,000	3,00,000	3,00,000	North-Western Provinces ...	1,40,000	3,00,000	3,00,000	14,000	...	...
57,000	61,500	56,000	Punjab	500	3,000	5,000	56,500	58,500	51,000
...	30,000	50,000	Central Provinces ...	...	30,000	50,000	...	...	...
90,900	2,23,000	2,28,600	Oudh	50,000	1,94,400	2,00,000	40,900	28,600	28,600
14,53,600	13,86,200	15,94,500	{ Ordinary Grant ...	9,93,800	9,60,200	11,76,000	4,59,800	4,26,000	4,18,500
...	4,75,000	6,00,000	Total ... { Special Fund ...	...	4,75,000	6,00,000	...	...	...
14,53,600	18,61,200	21,94,500	Total ...	9,93,800	14,35,200	17,76,000	4,59,800	4,26,000	4,18,500

The State expenditure on the Madras Irrigation and Canal Company during 1870-71, amounting to Rs. 53,800, is provided for from the ordinary grant for Public Works.

PUBLIC WORKS DEPARTMENT.

BUDGET-ESTIMATE OF THE RAILWAY DEPARTMENT FOR 1870-71.

Part II.

Detail of the estimate of State Expenditure for loss by Exchange arising out of transaction from Guaranteed Railways in India during the year from 1st April 1870 to 31st March 1871, as contrasted with the Regular-Estimate for 1869-70.

	Budget-Estimate, 1870-71.						Regular-Estimate, 1869-70.					
	Net advances on account of Capital Funds, 1870-71.	Loss by Exchange on Capital Advances.	Net Revenue in 1870-71.	Gain by Exchange of Net Revenue.	Net loss by Exchange.	Net gain by Exchange.	Net advances on account of Capital Funds, 1869-70.	Loss by Exchange on Capital Advances.	Net Revenue in 1869-70.	Gain by Exchange of Net Revenue.	Net loss by Exchange.	Net gain by Exchange.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Railways under the Government of Madras...	29,50,000	2,45,800	43,25,000	3,60,500	...	1,14,700	23,00,000	1,92,000	39,00,000	3,25,000	...	1,33,000
Ditto ditto of Bombay...	92,78,000	7,73,300	88,50,000	7,37,500	35,800	...	1,18,37,000	9,86,000	A 79,00,000	6,58,500	3,27,500	...
Ditto ditto of Bengal ...	81,91,000	6,82,600	1,75,00,000	14,58,300	...	7,75,700	95,50,000	7,96,000	1,60,70,000	13,40,000	...	5,44,000
Ditto ditto of Punjab ...	38,19,000	3,18,300	12,00,000	1,00,000	2,18,300	...	47,50,000	3,96,000	6,80,000	56,500	3,39,500	...
Total ...	2,42,38,000	20,20,000	3,18,75,000	26,56,300	2,54,100	8,90,400	2,84,37,000	23,70,000	2,85,50,000	23,80,000	6,67,000	6,77,000
Deduct Loss by Exchange	...	...	...	20,20,000	...	2,54,100	...	...	...	23,70,000	...	6,67,000
Net Gain by Exchange	...	...	...	6,36,300	...	6,36,300	...	...	...	10,000	...	10,000

A.—Includes value of stores transferred from debit of Revenue to that of Capital Sindh Railway, as also sale proceeds of materials of Chinee Creek Bridge.

No loss and gain by exchange calculated on the transactions of the Indian Tramway Company and the Oudh and Rohilkhund Railway, the contract rate of exchange being at the rate of 2*s.* the rupee.

PUBLIC WORKS DEPARTMENT.

BUDGET-ESTIMATE OF THE RAILWAY DEPARTMENT FOR 1870-71.

Part III.

Detail of the estimate of Advances in India for expenditure against Capital Account of Guaranteed Railways during the year from 1st April 1870 to 31st March 1871, as compared with the Regular and Budget-Estimate for 1869-70.

	Gross Advances.		Refunds.		Net Advances.		
	Budget-Estimate, 1870-71.	Regular-Estimate, 1869-70.	Budget-Estimate, 1870-71.	Regular-Estimate, 1869-70.	Budget-Estimate, 1870-71.	Regular-Estimate, 1869-70.	Budget-Estimate, 1869-70.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
MADRAS.							
Madras Railway ... North-West Line ...	23,50,000	18,00,000	3,50,000	2,00,000	20,00,000	16,00,000	18,00,000
Madras Railway ... South-West „ ...	18,50,000	13,50,000	9,50,000	9,00,000	9,00,000	4,50,000	5,00,000
Great Southern of India Railway ...	2,35,000	4,43,000	1,85,000	1,93,000	50,000	2,50,000	2,75,000
TOTAL MADRAS ...	44,35,000	35,93,000	14,85,000	12,93,000	29,50,000	23,00,000	25,75,000
BOMBAY.							
Great Indian Peninsula Railway ...	1,40,00,000	1,60,00,000	58,00,000	60,00,000	82,00,000	1,00,00,000	1,20,00,000
Bombay, Baroda and Central India Railway ...	22,15,000	23,00,000	13,00,000	17,00,000	9,15,000	6,00,000	10,75,000
Sindh Railway ...	3,50,000	18,70,000	1,80,000	6,20,000	1,70,000	12,50,000	—1,25,000
Indus Flotilla ...	3,14,000	3,79,000	3,21,000	3,92,000	—7,000	—13,000	30,000
TOTAL BOMBAY ...	1,68,79,000	2,05,49,000	76,01,000	87,12,000	92,78,000	1,18,37,000	1,29,80,000
BENGAL.							
East Indian Railway ... Main Line ...	1,05,00,000	1,11,00,000	29,00,000	34,00,000	76,00,000	77,00,000	60,00,000
East Indian Railway ... Jubbulpoor Extension ...	5,00,000	9,50,000	4,00,000	6,00,000	1,00,000	3,50,000	8,00,000
Eastern Bengal Railway	8,41,000	18,60,000	3,50,000	3,60,000	4,91,000	15,00,000	15,00,000
TOTAL BENGAL	1,18,41,000	1,39,10,000	36,50,000	43,60,000	81,91,000	95,50,000	83,00,000
PUNJAB.							
Punjab Railway	6,19,000	...	4,00,000	...	2,19,000	—2,50,000	7,00,000
Delhi Railway	40,00,000	...	4,00,000	...	36,00,000	50,00,000	55,00,000
TOTAL PUNJAB	46,19,000	...	8,00,000	...	38,19,000	47,50,000	62,00,000
OUDH.							
Oudh and Rohilkhund Railway	67,10,000	35,00,000	2,10,000	2,00,000	65,00,000	33,00,000	50,00,000
	4,44,84,000	...	1,37,46,000	...	3,07,38,000	3,17,37,000	3,50,55,000
Less loss by Railway Exchange					20,20,000	23,70,000	25,04,000
Advances in English currency ... ... £					2,871,800	2,936,700	3,255,100
Madras Irrigation and Canal Company.					£	£	£
Amount estimated to be withdrawn in England					137,500	172,900	214,500
„ „ in India					...	...	5,500
Total ...					137,500	172,900	220,000

PUBLIC WORKS DEPARTMENT.

BUDGET-ESTIMATE OF THE RAILWAY DEPARTMENT FOR 1870-71.

Part IV.

Detail of the estimated Revenue from Guaranteed Railways during the year from 1st April 1870 to 31st March 1871, as compared with the Regular and Budget-Estimate for 1869-70.

	Gross Earnings.			Working Expenses.			Net Revenue.		
	1870-71, Budget-Estimate.	1869-70.		1870-71, Budget-Estimate.	1869-70.		1870-71, Budget-Estimate.	1869-70.	
		Regular-Estimate.	Budget-Estimate.		Regular-Estimate.	Budget-Estimate.		Regular-Estimate.	Budget-Estimate.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
MADRAS.									
Madras Railway ... North-West Line ...	21,00,000	16,50,000	20,00,000	8,00,000	6,50,000	8,00,000	13,00,000	10,00,000	12,00,000
Madras Railway ... South-West Line ...	47,00,000	46,00,000	48,00,000	21,00,000	21,00,000	23,00,000	26,00,000	25,00,000	25,00,000
Great Southern of India Railway	8,50,000	8,00,000	8,00,000	4,25,000	4,00,000	4,00,000	4,25,000	4,00,000	4,00,000
Indian Tramway	55,000	55,000	48,000	43,000	45,000	43,000	12,000	10,000	5,000
	77,05,000	71,05,000	76,48,000	33,68,000	31,95,000	35,43,000	43,37,000	39,10,000	41,05,000
BOMBAY.									
Great Indian Peninsula Railway	1,90,00,000	1,55,00,000	1,60,00,000	1,22,00,000	1,01,00,000	96,00,000	68,00,000	54,00,000	64,00,000
Bombay, Baroda and Central India Railway ...	48,00,000	46,00,000	45,00,000	30,00,000	35,00,000	30,00,000	18,00,000	11,00,000	15,00,000
Sindh Railway	8,00,000	7,50,000	12,50,000	7,00,000	8,50,000	10,00,000	1,00,000	—1,00,000	2,50,000
Indus Flotilla	10,70,000	10,20,000	10,00,000	9,20,000	8,70,000	7,00,000	1,50,000	1,50,000	3,00,000
	2,56,70,000	2,18,70,000	2,27,50,000	1,68,20,000	1,53,20,000	1,43,00,000	88,50,000	65,50,000	84,50,000
BENGAL.									
East Indian Railway ... Main Line ...	2,70,00,000	2,66,00,000	2,60,00,000	1,12,00,000	1,11,00,000	1,25,00,000	1,58,00,000	1,55,00,000	1,35,00,000
East Indian Railway ... Jubbulpoor Extension ...	15,00,000	10,25,000	15,00,000	10,00,000	12,25,000	10,50,000	5,00,000	—2,00,000	4,50,000
Eastern Bengal Railway	25,00,000	18,80,000	20,00,000	13,00,000	11,10,000	9,00,000	12,00,000	7,70,000	11,00,000
	3,10,00,000	2,95,05,000	2,95,00,000	1,35,00,000	1,34,35,000	1,44,50,000	1,75,00,000	1,60,70,000	1,50,50,000
PUNJAB.									
Punjab Railway	12,00,000	10,53,000	12,00,000	9,00,000	9,73,000	8,00,000	3,00,000	80,000	4,00,000
Delhi and Umritsur Railway	19,00,000	13,00,000	10,00,000	10,00,000	7,00,000	7,00,000	9,00,000	6,00,000	3,00,000
	31,00,000	23,53,000	22,00,000	19,00,000	16,73,000	15,00,000	12,00,000	6,80,000	7,00,000
OUDH.									
Oudh and Rohilkund Railway	2,85,000	2,13,000	3,25,000	2,10,000	1,90,000	2,25,000	75,000	23,000	1,00,000
GRAND TOTAL ...	6,77,60,000	6,10,46,000	6,24,23,000	3,57,98,000	3,38,13,000	3,40,18,000	3,19,62,000	2,72,33,000	2,84,05,000
Add value of stores transferred from debit of Revenue to that of Capital Sindh Railway, as also sale proceeds of materials of Chinee Creek Bridge.							...	13,50,000	...
							3,19,62,000	2,85,83,000	2,84,05,000
Less moiety of surplus profits, East Indian Railway, to be paid to shareholders							9,00,000	8,13,000	...
Net sum to be credited to Government							3,10,62,000	2,77,70,000	2,84,05,000
Thus apportioned—							£.	£.	£.
Against charges for guaranteed interest							2,840,570	2,539,000	2,604,700
Gain by Exchange							265,630	238,000	235,800
Total							3,106,200	2,777,000	2,840,500
	£	£	£	£	£	£	£	£	£
MADRAS IRRIGATION AND CANAL COMPANY ...	9,900	1,630	9,900	2,300	500	2,300	7,600	1,130	7,600

FINAL ESTIMATE OF GUARANTEED RAILWAYS FOR 1869-70.

Nos. 140—5 A—R, dated 16th March, 1870.

RESOLUTION—By the Government of India, P. W. Dept.

Read the following :—

Note by LIEUT.-COL. G. CHESNEY, *Accountant General, Public Works Department, on the final guaranteed Railway Estimate for* 1869-70.

The Railway regular-estimate for 1869-70 has already been submitted to the Financial Department, but the figures to be finally adopted in the Financial Statement have still to be reported. With this view I beg to submit the following remarks on the subject :—

Advances on Construction Account.

2. The following table shows the probable net advances during 1869-70, compared with the net amount advanced in 1868-69, and the regular estimate for the current year :—

	Amounts advanced up to end of January.		Amounts for February and March.		Total.		
	1868-69.	1869-70.	1868-69.	1869-70 (estimated).	1868-69.	1869-70, present final estimate.	Regular-estimate.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Madras Railway, North-West Line	18,34,520	14,79,483	4,05,574	4,10,000	22,40,094	19,26,384	20,50,000
Ditto, South-West Line		36,901					
Great Southern of India Railway	3,43,745	3,41,156	68,562	70,000	4,12,307	4,11,156	2,50,000
Great Indian Peninsula Railway ...	81,90,740	60,68,893	24,30,251	25,00,000	1,06,20,991	85,68,893	1,00,00,000
B. B. and C. I. Railway	7,03,502	1,00,086	1,38,165	35,000	8,41,667	1,35,086	6,00,000
Sindh Railway	—15,75,939	10,72,412	83,386	1,00,000	—14,92,553	11,72,412	12,50,000
Indus Flotilla	60,589	1,318	4,63,259	5,000	5,23,848	6,318	—13,000
E. I. Railway, Main Line ...	18,07,964	44,36,405	11,84,628	3,18,595	29,92,592	47,50,000	77,00,000
Ditto, Jubbulpoor Line ...	15,19,621	4,72,639	1,00,000	77,361	16,19,621	5,50,000	3,50,000
Eastern Bengal Railway	13,17,397	12,62,793	2,40,021	1,62,207	15,57,418	14,25,000	15,00,000
Punjab Railway	2,14,182	—2,75,777	1,11,515	...	3,25,697	—2,75,777	—2,50,000
Delhi Railway	54,72,529	36,16,927	11,80,316	8,00,000	66,52,845	44,16,927	50,00,000
Oudh and Rohilkund Railway ...	5,93,877	15,04,668	2,37,646	5,00,000	8,31,523	20,04,668	33,00,000
	2,04,82,727	2,01,17,904	66,43,323	49,73,163	2,71,26,050	2,50,91,067	3,17,37,000

3. With reference to the results shown in this table, the Financial Department may perhaps be informed that the net advances on Construction account for Guaranteed Railways during 1869-70 may be taken at 251 lakhs, *viz.* :—

	Lakhs.
For Railways on which the rate of exchange is calculated at the rate of 1*s.* 10*d.* the rupee	231
For Oudh and Rohilkund Railway	20
Total ...	251

4. The gross loss by exchange will thus be Rs. 19,25,000 instead of Rs. 23,70,000 as entered in the regular estimate.

Net Profits.

5. The following statement shews the probable declared net profits of the several Railways for the year 1869.—

	Declared profits for the half-year ending 30th June 1869.	Estimated by Consulting Engineer for half-year ending 31st December.	Total.	Regular-Estimate.
	Rs.	Rs.	Rs.	Rs.
Madras Railway, North-West Line	3,90,211	5,33,696	9,23,907	10,00,000
Ditto, South-West Line	12,47,980	9,51,748	21,99,728	25,00,000
Great Southern of India Railway	1,39,533	1,41,282	2,80,815	4,00,000
Great Indian Peninsula Railway	39,94,582	12,40,000	52,34,582	54,00,000
Bombay, Baroda and Central India Railway	10,70,446	6,68,000	17,38,446	11,00,000
Sindh Railway	1,73,891	10,000	1,83,891	—1,00,000
Indus Flotilla	1,26,174	97,000	2,23,174	1,50,000
East Indian Railway, Main Line	90,07,178	71,66,730	1,61,73,908	1,55,00,000
Ditto, Jubbulpoor Line	—1,11,756	...	—1,11,756	—2,00,000
Eastern Bengal Railway	4,18,884	4,86,000	9,04,834	7,70,000
Punjab Railway	1,14,067	...	1,14,067	80,000
Delhi Railway	3,75,929	A2,50,000	6,25,929	6,00,000
Oudh and Rohilkund Railway	13,018	25,537	38,555	23,000
Indian Tramway	9,175	82	9,257	10,000
Total ...	1,69,69,262	1,15,70,075	2,85,39,337	2,72,33,000

A.—Estimated in this Office.

6. It is however necessary that the amount to be brought to account in the finance accounts as net traffic earnings should consist of the probable declared net profits of the official year ; this is obtainable from the following table :—

	Profits for 1869 as per column 4 of preceding statement.	Less sum included therein as net earnings of the first 3 months of 1869.	Balance for the last 9 months of 1869.	Add net Traffic receipts of January and February as estimated by Consulting Engineer.	Add net receipts as estimated in this Office for March 1870.	Total, Final Estimate, 1869-70.	Regular-Estimate, 1869-70.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Madras Railway, North-West Line	9,23,907	1,42,613	7,81,294	76,202	38,000	8,95,496	10,00,000
Ditto, South-West Line	21,99,728	5,98,593	16,01,135	3,03,792	1,55,000	20,59,927	25,00,000
Great Southern of India Railway	2,80,815	69,768	2,11,047	40,000	20,000	2,71,047	4,00,000
Great Indian Peninsula Railway ...	52,34,582	23,86,072	28,48,510	12,38,000	6,20,000	47,06,510	54,00,000
Bombay, Baroda and Central India Railway ...	17,38,446	3,35,537	14,02,909	4,73,000	2,36,000	21,11,909	11,00,000
Sindh Railway ...	1,83,891	50,289	1,33,602	30,000	15,000	1,78,602	—1,00,000
Indus Flotilla ...	2,23,174	58,100	1,65,074	14,000	7,000	1,86,074	1,50,000
East Indian Railway, Main Line	1,61,73,908	47,81,515	1,13,92,393	33,72,500	16,00,000	1,63,64,893	1,55,00,000
Ditto, Jubbulpoor Line ...	— 1,11,756	— 64,275	— 47,481	...	...	—47,481	—2,00,000
Eastern Bengal Railway ...	9,04,834	2,34,393	6,70,441	1,50,000	75,000	8,95,441	7,70,000
Punjab Railway ...	1,14,067	81,443	32,624	15,000	7,000	54,624	80,000
Delhi Railway ...	6,25,929	1,18,145	5,07,784	1,00,000	50,000	6,57,784	60,00,000
Oudh and Rohilkund Railway ...	38,555	14,850	23,705	12,712	6,000	42,417	23,000
Indian Tramway ...	9,257	3,383	5,874	361	180	6,415	10,000
Total ...	2,85,39,337	88,10,486	1,97,28,911	58,25,567	28,29,180	2,83,83,658	2,72,33,000

7. On the whole, then, the final estimate of net receipts may be adopted as follows :—

		Rs.
Estimated net profits as per above table	... ...	2,83,84,000
Add value of stores transferred from debit of Revenue to that of Capital Sindh Railway, which having diminished the net receipts on account of traffic earnings of previous years as shown in the Finance and Revenue Accounts may now be fairly brought to credit as Revenue	... ...	13,50,000
Total	... ...	2,97,34,000
Less moiety of surplus profits paid to shareholders, East Indian Railway	... ...	8,13,000
Net receipts	... ...	2,89,21,000
Less gain by exchange on Rs. 2,97,34,000	... ...	24,78,000
Net amount in English currency	... ...	£ 2,644,300
Add amount refunded in England on account of loss in working the Jubbulpoor Line	... ...	„ 10,244
Total	...	£ 2,654,544
The regular-estimate already submitted being	...	„ 2,539,000

RESOLUTION.—With reference to the wide difference between the regular estimate of Construction outlay and the estimate now sent forward, the Governor General in Council desires that it may be recorded that serious notice will be taken in this Department of the inaccuracy of the Provincial regular-estimates if the actuals are hereafter found to confirm the correctness of the figures now recommended by the Accountant General, Public Works Department.

ORDER.—Ordered, that copy of this Note be forwarded to the Financial Department for information, with the remark that the suggestions made in it by the Accountant General, Public Works Department, are concurred in by the Governor General in Council in this Department.

Ordered also, that a copy be forwarded to the several Governments and Administrations in the Railway Branch noted in the margin, for information.

Governments of Madras, Bombay, Bengal, and Punjab, and Chief Commissioner, Oudh.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

Budget-Estimate of expenditure on State Railways during 1870-71.*

	BUDGET-ESTIMATE, 1870-71.		
	In India.	In England.	Total.
EXTRAORDINARY.	Rs.	Rs.	Rs.
Bombay.			
Hooblee and Carwar Railway	1,50,000	...	1,50,000
Bengal.			
Calcutta and South-Eastern Railway	...	1,05,000	1,05,000
Survey of Railway north of Ganges	50,000	...	50,000
Total ...	50,000	1,05,000	1,55,000
North-Western Provinces.			
Rajpootana Railway	19,78,000	7,00,000	26,78,000
Rolling-stock	2,50,000	2,15,000	4,65,000
Total ...	22,28,000	9,15,000	31,43,000
Punjab.			
Punjab Northern Railway	49,50,000	10,00,000	59,50,000
Indus Valley Line	14,25,000	...	14,25,000
Rolling stock	7,50,000	7,25,000	14,75,000
Total ...	71,25,000	17,25,000	88,50,000
TOTAL EXTRAORDINARY ...	95,53,000	27,45,000	1,22,98,000
ORDINARY.			
Charges. Rs.			
Calcutta and South-Eastern Railway. { Construction ... 50,000 / Working expenses. 75,000 }	1,25,000	...	1,25,000
Revenue.			
Calcutta and South-Eastern Railway	75,000	...	75,000
NET CHARGE ...	50,000	...	50,000

In addition to the above, it is estimated that the following expenditure will be incurred on Railways the funds for which are to be provided by Native States:—

CAPITAL.			REVENUE.		
Provided by Nizam.		Rs.	*Provided from revenues of the Berars.*		Rs.
Hyderabad Railway ...		5,00,000	*Charges.*	Khamgaon Branch ...	25,000
Provided from revenues of the Berars.					
Oomrawuttee Branch Railway ...		2,50,000	*Revenue.*	Ditto ...	40,000
Total ...		7,50,000		Net Revenue ...	15,000

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

PUBLIC WORKS BUDGET ORDERS, 1870-71.

MADRAS BUDGET ORDERS, 1870-71.

The Madras Budget-Estimate for 1870-71 has been prepared under the head Ordinary for the original grant of Rs. 60 lakhs assigned in Public Works Department Circular No. 96 of 1869. This was reduced in Public Works Department Circular No. 104 of 1869 to Rs. 55¼ lakhs, and in order to make up the difference, the Government of Madras have since suggested the following reductions in the estimate :—

	Rs.
Under head "Original Works," "Miscellaneous Public Improvement", Rs. 80,000 appropriated for the restoration of the Madras Pier	75,000
Reduction from 14 to 10 lakhs in Repairs, Agricultural ...	4,00,000
Total ...	4,75,000

2. The Ordinary Estimate for 1870-71 will thus stand as follows, as compared with the grant of 1869-70 :—

	1870-71.	1869-70.	Difference. Increase.	Difference. Decrease.
	Rs.	Rs.	Rs.	Rs.
Works and Repairs—				
Military	6,00,000	10,00,000	...	4,00,000
Agricultural	14,50,000	20,00,000	...	5,50,000
Other Services	18,35,810	35,80,720	...	17,44,910
Total ...	38,85,810	65,80,720	...	26,94,910
Tools and Plant ...	1,30,000	55,000	75,000	...
Establishment ... Establishment General...	13,76,360	13,74,990	1,370	...
Establishment ... Conservancy	90,610	87,470	3,140	...
Establishment ... Civil Engineering College	42,220	41,820	400	...
Grand Total ...	55,25,000	81,40,000	...	26,15,000

3. Thus, although there has been a total reduction of Rs. 26¼ lakhs, the charge for Establishment is actually higher than in the current year, and absorbs one-fourth of the total allotment. The Government of India cannot consider this to be a satisfactory arrangement, it being in effect that precisely as much establishment is to be employed as during 1869-70 to do just half as much work.

4. It may be admitted that establishment and work cannot always be maintained in a constant proportion, and that the former may often be of necessity comparatively expensive when the progress of work is diminished, especially if the decrease is made suddenly, but it has to be observed that in every other Province a vigorous effort has been made to bring down the establishment charges into some sort of reasonable harmony with the reduced scale of work, the persons thus set free having been absorbed on the Irrigation and other Extraordinary works, and the Government of India think it quite essential that something of the same kind should be carried out in Madras. In other parts of India the charge on this head does not even now exceed 20 per cent. on the total grant. The exact reduction to be made in Madras cannot be told till the promised report on the re-organization of establishments in that Presidency is received, but the Government of India think that in the meantime a reduction of at least 2 lakhs should be made, and it is now ordered accordingly.

5. The sum thus reduced is here added to the provision for Repairs, Agricultural, because the Government of Madras have heretofore strongly represented

that the sum provided for this purpose was not sufficient to protect the important interests at stake, so that it appears undesirable to allow the reduction of 4¾ lakhs in the total grant to fall chiefly on the allotment for this head of service. But it will of course be open to that Government to propose a different arrangement.

ORIGINAL WORKS.

Military.

6. *Item* 11. *Ulsoor Water Project, Bangalore. Computed expenditure to* 31*st March* 1870, *Rs.* 1,78,465. *Grant for* 1870-71, *Rs.* 30,000.—Passed on the understanding that the revised estimate for this work is furnished to the Government of India without any unnecessary delay.

7. *Item* 15. *Snider Ammunition Factory, Madras. Amount of estimate, Rs.* 71,500. *Grant for* 1870-71, *Rs.* 35,000.—As the factories at Kirkee and Dum-Dum are now in full progress of construction, the construction of this work may be postponed for the present, and the grant applied to the completion of others already in progress.

8. *Item* 16. *Lawrence Asylum Buildings, Ootacamund. Computed outlay to* 31*st March* 1870, *Rs.* 8,08,435. *Grant for* 1870-71, *Rs.* 70,200.—May stand, subject to the condition specified by the Government of Madras, that no outlay is incurred from that allotment until the revised estimate for the work has been sanctioned by the Government of India.

Civil Buildings.

9. It is suggested that, under the present reduced state of the grants, it will be desirable not to commence the undermentioned new buildings at present, and to apply the appropriations made for them to accelerate the progress of others already commenced :—

	Rs.
Item No. 23—Store-shed at Public Works Store Yard, Madras ...	15,000
„ „ 32—Sub-Magistrate's Cutcherry and Subsidiary Jail Maliahs	6,000
Items Nos. 34 to 38.— Ditto ditto, Vizagapatam District ...	17,780
	38,780

10. *Item* 25. *Preservation of Teroomalay Naick's Palace, Madura, Rs.* 10,000.—Under the explanation furnished by the Government of Madras, the grant is passed, but the work should be carried out on a regularly sanctioned estimate.

			Rs.
33.	Police Stations,	Ganjam	3,900
40.	„	„ Vizagapatam	6,000
44-7.	„	„ Kistna, Nellore, Cuddapah and Kurnool	8,600
42.	„	„ Godavery	2,500
50.	„	„ Bellary	8,000
52.	„	„ Madras	1,200
54.	„	„ North Arcot	2,500
55.	„	„ South Arcot	2,000
58.	„	„ Salem	2,000
60.	„	„ Tanjore	1,200
62.	„	„ Trichinopoly	1,700
63.	„	„ Coimbatore	2,800
67.	„	„ Malabar...	2,500
68.	„	„ South Canara	1,000
71 to 73.	„	„ Wynaad, Madura, and Tinnevelly ...	7,100
			58,000

11. *Items as per margin. Police Stations, Rs.* 53,000.—Remarks are made in the Budget-Estimate to the effect that these works are in progress on estimates, which it is understood have been sanctioned by the Government of Madras. The total estimated expenditure on the works is not shown, but it is understood to amount to Rs. 19 lakhs.

		Rs.
31.	Additions and alterations to Zillah Jail, Berhampoor ...	3,120
39.	Subsidiary Jail at Chodavaram	2,880
43.	Improvements to Jail at Guntoor	2,080
48.	Court-house, Bellary	20,000
49.	Improvements to Jail at Bellary	10,000
56.	Talook Cutcherry, Ahtoor	2,220
57.	Tehsildar's Cutcherry and Subsidiary Jail at Vaniembady	3,200
59.	Court-house, Tanjore	13,000
64.	Talook Cutcherry and Subsidiary Jail, Tellichery ...	2,400
65.	„ „ „ Munjerry ...	5,000
69.	Sub-Magistrate's house, Vyherry	2,500
70.	„ „ Goodalore	10,500
		76,900

12. *Items as per margin. Court-houses and Subsidiary Jails.*—It has to be noticed that the general scheme for carrying out these buildings was disapproved by the Government of India, *vide* Public Works Department Resolution Nos. 736—8 A, dated 31st August 1869. It is requested that no new works of this nature may be commenced until the questions raised in that Resolution have been disposed of.

13. *Items* 53 *and* 61. *Central Jails at Vellore and Trichinopoly. Grants for* 1870-71, *Rs.* 40,000 *and Rs.* 17,680, *respectively.*—The revised estimates for these works have not yet been sanctioned by the Government of India, pending reply to references made to the Government of Madras on the subject.

COMMUNICATIONS.

14. *Item* 109. *Constructing roads and clearing jungle in the Jeypoor country. Computed outlay to end of* 1869-70, *Rs.* 45,000. *Grant for* 1870-71, *Rs.* 10,000.—A formal estimate is no doubt impracticable here, but some distinct limit of expenditure should be placed on the Officer concerned in regard to each item of work to be undertaken by him.

15. *Items* 205, 206, *and* 207. *Roads in Wynaad. Computed expenditure to* 31*st March* 1870, *Rs.* 7,84,784. *Grant for* 1870-71, *Rs.* 60,000.—The proceedings of the Madras Government for October 1869 shew that orders have been given for the preparation of complete estimates for the various lines into which the group of roads has been divided. It is hoped that these will shortly be supplied.

MISCELLANEOUS PUBLIC IMPROVEMENT.

16. The grant under this head is reduced to Rs. 23,800 to make the allotment an even sum.

AGRICULTURAL, EXTRAORDINARY.

17. The following works have still to be sanctioned as chargeable to loan :—

	Rs.
Item 75.—Rooshkoolia Project...	50,000
Items 77 to 81.—Works in Godavery Delta	2,25,000
Item 90.—Improvements to Irrigation channels, Northern Delta ...	2,60,000
„ 93.—Chembrumbaukam Tank Project	2,00,000
„ 103.—Peryaur Project	50,000
	6,85,000

18. The estimates for Items 75 and 103 will require the sanction of the Secretary of State before they are commenced upon.

19. The estimates for Items 77 to 81 and 90 are understood to have been under consideration for some time. No expenditure can be authorized on them for the coming year until they are properly sanctioned.

20. The Government of India have not been satisfied that Item 93, Chembrumbaukam Tank Project, ought to be classed as Extraordinary. The Government of Madras should be asked to permit no more delay in sending up the revised estimate, and to state what reasons there may be for inferring that the work will prove remunerative. Meanwhile, no outlay on the work from Loan funds can be allowed to take place in the coming year.

21. *Item* 92. *Madras Water-supply Project. Amount of sanctioned estimate Rs.* 6,11,759. *Computed outlay to end of* 1869-70, *Rs.* 8,25,939. *Grant for* 1870-71, *Rs.* 2,00,000.—The supplementary estimate for this work, called for in Public Works Department letter No. 249 A—I, dated 20th December 1869, is awaited.

83 to 86—Works in the Kistna Delta. Revised estimates for the items noted in the margin should also be asked for at once.

REPAIRS.

22. It is anticipated that the reduction in the grant for Agricultural, Repairs, from 14 to 10 lakhs, may prove injurious to Irrigation works generally. In framing estimates for repair allotments, and comparing them with those of

past years, it has to be considered that a large sum is required for the maintenance of the numerous canals that have recently been opened out in the Deltas along the East Coast. The silt thrown into these canals must be cleared out if the supply of water is to be maintained, and as labour is very scarce, any neglect at the present time cannot be made up for by larger grants in future. In this view, the provision for 1870-71 is increased to Rs. 12 lakhs by transfer of Rs. two lakhs from the allotment for Establishment.

23. As regards the balance of the four lakhs reduced from the estimate, it is taken for granted that in selecting the agricultural works as the class which could easiest bear a reduction, the Government of Madras is quite satisfied that the important interests affected by those works will not suffer, or, otherwise, that it is intended to relieve Imperial revenues by requiring the cultivators to do more for themselves, either directly, or by means of an additional cess, towards the maintenance of the numerous petty tanks and other irrigation works scattered over the Presidency.

24. Under the head Communications, a provision of Rs. 11,019 has been made for repairs to Travellers' Bungalows. Sanction was accorded in Public Works Department letter No. 502A, dated 2nd June 1865, to these buildings being kept in repair from Imperial funds until they become self-supporting. In no other Province of India is this allowed, and with reference to the correspondence with the Government of Madras, terminating with Public Works Department letter No. 401A, dated 1st June 1868, the time appears to have arrived to discontinue grants from Imperial funds, and the Government of Madras should be requested to arrange accordingly with effect from 1871-72.

25. The provision of Rs. 3,960 from Imperial funds for repairs of station roads at Ootacamund, Coonoor and Kotagherry should apparently be paid for by local rates, as is done in all other Hill stations. The opinion of the Government of Madras is invited on this point.

ESTABLISHMENT.

26. The estimate amounts to Rs. 21,25,400, apportioned as follows :—

	Rs.
Imperial Ordinary	15,09,190
„ Extraordinary	3,00,000
Local funds	3,16,210
	21,25,400

The debit to Extraordinary appears reasonable, but the actual charge will of course have to be determined according to the rules laid down on the subject. The Ordinary grant, as already remarked, is reduced to Rs. 13,09,200. Immediate action will be needed to give effect to the reduction. In this view, among other measures which it is left to the Government of Madras to determine upon, it is requested that no promotions should be made until the supernumerary officers borne on the strength of the establishment are absorbed. The charge on the Public Works estimate for a Barrack Master should, if possible, be discontinued, and it should be seen whether the services of the two Mechanical Engineers, the nature of whose employment is not known to the Government of India, might not be dispensed with. Reduction can perhaps be made in the charges for petty and permanent and temporary Office establishments under all heads, as also in the charge for contingencies of the Civil Engineering College which appears high. The Draughtsmen who appear to be allowed for every Range, can hardly be necessary in all cases.

SUMMARY.

27. The following is an abstract of the Madras Budget-Estimate for 1870-71 as modified by the foregoing orders :—

	Original Works.			Repairs.	Establishment.	Tools and Plant.	State outlay on Guaranteed Railways and Irrigation Works.	Total.
	Major.	Minor.	Total.					
Ordinary.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Military	3,40,000	60,000	4,00,000	2,00,000	...	...	...	6,00,000
Agricultural.								
Works and Repairs ...	65,200	3,31,000	3,96,200	12,00,000	...	...	...	15,96,200
State outlay on Guaranteed Irrigation Works	...	...	...	...	...	...	53,800	53,800
	65,200	3,31,000	3,96,200	12,00,000	...	...	53,800	16,50,000
Other Services.								
Civil Buildings ...	4,17,000	70,000	4,87,000	1,10,000	...	...	...	5,97,000
Communications ...	2,00,000	70,000	2,70,000	9,30,000	...	...	...	12,00,000
Miscellaneous Public Improvement ...	13,800	10,000	23,800	15,000	...	...	...	38,800
Establishment ...	...	...	...	...	13,09,200	...	...	13,09,200
Tools and Plant ...	...	...	...	...	...	1,30,000	...	1,30,000
	6,30,800	1,50,000	7,80,800	10,55,000	13,09,200	1,30,000	...	32,75,000
	10,36,000	5,41,000	15,77,000	24,55,000	13,09,200	1,30,000	53,800	55,25,000
State outlay on Guaranteed Railways ...	...	...	...	...	...	...	2,05,000	2,05,000
Total Ordinary ...	10,36,000	5,41,000	15,77,000	24,55,000	13,09,200	1,30,000	2,58,800	57,30,000
Extraordinary.								
Irrigation Works ...	18,80,000	...	18,80,000	...	3,00,000	20,000	...	22,00,000
	29,16,000	5,41,000	34,57,000	24,55,000	16,09,200	1,50,000	2,58,800	79,30,000

Add grant from Local Funds to be disbursed by Officers of the Public Works Department—

	Rs.	
Original Works	12,36,020	
Repairs	6,97,780	
Establishment	3,16,210	
Tools and Plant	18,860	
		22,68,870
		1,01,98,870

28. It is observed that no estimates have been sanctioned for many of the works to be defrayed from Local funds. It appears just as objectionable to allow this in the case of Local funds as in the case of Imperial funds, and it is hoped that the Government of Madras will take steps for stopping the practice.

PUBLIC WORKS REVENUE.

29. The estimate amounts to Rs. 1,80,000, including Rs. 30,000 payment for stores supplied to the Workshops, but as under orders about to issue, the value of stores supplied from England for the several Government Workshops will be adjusted by means of a remittance account, and not by a credit to Public Works Revenue, the estimate will be reduced to Rs. 1,50,000.

Fort William ;
February 23, 1870.

R. STRACHEY, *Colonel, R. E.,*
Offg. Secy. to the Govt. of India.

BOMBAY BUDGET ORDERS, 1870-71.

One omission has been made in this otherwise complete and carefully prepared estimate. No references have been given in the column of remarks to the particulars of the authorities by whom estimates have been sanctioned, *vide* para. 13 of Standing Order No. 62 of 1864. Attention is requested to this point for the future, as it cannot be told from the Budget-Estimate for 1870-71 whether, or not, estimates for works have been sanctioned.

2. The final grant assigned for expenditure on Public Works from Imperial funds (excluding State expenditure on Railways) in Bombay during 1870-71 amounted to Rs. 1,07,25,000. The Budget-Estimate now submitted has been prepared for Rs. 1,37,09,820, the balance Rs. 29,84,820 being provided for as follows :—

	Rs.
From Local Funds and Contributions	14,40,520
„ Port Trust Funds	15,44,300
TOTAL ...	29,84,820

3. The provision for Port Trust works has been made in anticipation of arrangements being successfully carried through for the transfer of the Elphinstone property to Government. The Government of Bombay proposes that, in the event of any delay or difficulty occurring in the matter, the expenditure debitable to the Trust should be met by an advance or loan, and in case the transfer of the property is deferred, and negotiations are broken off with the Elphinstone Company, that funds for the works should be defrayed from Extraordinary sources.

4. It will readily be understood that neither of these proposals can be sanctioned until a specific plan has been brought forward and definitively settled. The subject cannot however be followed up in this place, and therefore the Government of Bombay will please to understand that the items which it is proposed to charge to the Port Trust are only allowed provisionally for an even sum of 15½ lakhs, subject to arrangements being definitively made for establishing that Trust, and that, meanwhile, no expenditure can be sanctioned for any of the proposed works.

5. The grant allowed for Extraordinary Irrigation Works was Rs. 27 lakhs. But as Rs. 1¼ lakhs will be available for such works by reason of the refund from the Ordinary grant on account of the expenditure incurred during 1867-68 and 1868-69 from Loan Funds on the Bhatowdee Tank Project, which has not been finally sanctioned as Extraordinary, the grant for next year will be reduced to Rs. 25¾ lakhs, and the ordinary grant to Rs. 79¼ lakhs from 80¼ lakhs, one lakh being taken off on account of the additional sum allowed for expenditure in 1869-70, *vide* Public Works Department telegram dated 21st February 1870. The total grant from Imperial funds for 1870-71, excluding outlay on Railways, will thus amount to Rs. 120½ lakhs, apportioned as follows :—

	Lakhs.	Lakhs.
Ordinary		79¼
Extraordinary—		
Irrigation	25¾	
Port Trust	15½	41¼
		120½

6. Should the Port Trust not be established by 1st April, it will be for the Government of Bombay to consider what arrangements can be made for re-distributing the ordinary expenditure so as to admit of the works provided for in this estimate from that source being carried on.

MILITARY.

7. *Item* 5.—*Improving the road from Sheerwul* viâ *Waee to Panchgunny, Rs.* 25,000.—This work was entered under the head "Military" in the Budget-Estimate for 1869-70; but the grant will be more properly placed under the head "Communications," and is transferred accordingly. By this transfer the provision for Original Works, Military, is reduced to Rs. 23¼ lakhs.

8. Estimates appear to be required for the following :—

	Rs.
Item 1.—Bombay Harbour Defences	3,00,000
„ 26.—Gun-Carriage Buildings, Kirkee ...	1,75,000
„ 27.—Cartridge Factory, Kirkee	1,00,000
„ 31.—Hydraulic Lift Dock, Bombay... ...	1,25,000

The absence of estimates for Nos. 1 and 31 is plainly unavoidable. It is requested that no expenditure may be incurred on Item 26, until the estimates for them have been sanctioned by competent authority.

9. *Item* 25.—*Buildings for Powder-works, Kirkee. Grant for* 1870-71, *Rs.* 1,75,000.—The estimates sanctioned for this work by the Government of India amount to Rs. 16,77,758, but the sum is here set down at Rs. 17,14,771. An explanation of the difference is requested. If it represents a supplementary estimate sanctioned by the Government of Bombay, the circumstance should have been noted in the column of remarks.

	Rs.
Original estimate sanctioned in Public Works Department letter No. 725 M, dated 13th July 1868	16,51,958
Supplementary estimate sanctioned in Public Works Department letter No. 1042 M, dated 17th October 1868	25,800
	16,77,758

CIVIL BUILDINGS.

10. *Item* 39.—*New Post Office, Bombay. Grant for* 1870-71, *Rs.* 1,25,000.—The estimate for this work, amounting to Rs. 5,98,928, was sanctioned in Public Works Department letter No. 113 C, dated 25th February 1869, but a revised estimate is now under the consideration of the Government of India, and early orders may be expected on it.

11. *Item* 50.—*Government House at Guneesh Khind. Computed outlay to end of* 1869-70, *Rs.* 11,22,000. *Grant for* 1870-71, *Rs. one lakh.*—It is requested that the revised estimate for this work may be furnished as early as possible, and that it may include all the subsidiary expenditure connected with the building. In a recent part of the Proceedings of the Bombay Government it has been observed that a very large further outlay has quite recently been proposed in connexion with this House, but that orders have been deferred on the estimates. It seems desirable that the position of the project as a whole should be now reviewed.

12. *Item* 57.—*School-house at Carwar. Amount of estimate and grant for* 1870-71, *Rs.* 19,880.—It is said that the plan for this work will be submitted to the Government of India, but this is not required.

13. *Items* 62 *to* 67.—*Police Stations. Grant for* 1870-71, *Rs.* 78,120.—Attention is drawn to para. 12 of the Budget Orders for 1869-70, and the wish of the Government of India to be informed, with reference to the Circular from the Home Department, No. 43, dated 15th July 1868, whether these buildings are in course of construction according to any general scheme approved of by competent authority.

AGRICULTURAL, EXTRAORDINARY.

ITEM No.	WORKS.	AMOUNT OF ESTIMATE.	COMPUTED OUTLAY TO END OF 1869-70.	GRANT, 1870-71.
		Rs.	Rs.	Rs.
70	Improving Biggaree Canal ...	4,01,699	1,42,000	50,000
71	Canal from Sukkur to Shadadpoor	7,29,820	5,75,000	75,000
86	Lakh Project	2,19,409	2,17,036	15,000
87	Palkbair Project	99,416	70,000	30,000
90	Moota Canal	30,58,984	7,80,000	10,00,000
92	Ekrookh Tank	9,45,613	7,00,000	1,55,000
		54,54,941	24,84,036	13,25,000

14. Of the works entered under this head, those noted in the margin have been specifically sanctioned as Extraordinary. The following have still to be so sanctioned :—

ITEM No.	WORKS.	AMOUNT OF ESTIMATE.	COMPUTED OUTLAY TO END OF 1869-70.	GRANT, 1870-71.
		Rs.		Rs.
77	Canal from Roree to Hyderabad...	2,00,35,691	...	5,00,000
84	Hathmuttee Project	6,42,093	...	2,00,000
91	Neera Canals	35,00,000	...	50,000
98	Gokak Canal	17,26,022	...	1,00,000
	TOTAL ...	2,59,03,806	...	8,50,000

15. The grant for the above four works, with the modification noted in para. 16, are allowed to stand on the condition that no expenditure is incurred on Items 77, 91 and 98, until the estimates for them have been furnished to, and sanctioned by, the Government of India and the Secretary of State. Item 84 has been commenced as a famine relief work. The Governor General in Council requests that as soon as pressure ceases, its progress may be stopped until the estimate for the work has been sanctioned by competent authority.

16. *Item* 85.—*Mooktee Nullah Reservoir. Grant for* 1870-71, *Rs.* 50,000.—**Funds for this work are provided for from the Ordinary grant, but as since the preparation of the Budget-Estimate the work has been sanctioned as Extraordinary, it can now be charged to that head. In this view, the allotment for Item 98 is reduced by Rs. 50,000, which amount is transferred to Item 85.**

	Rs.
Public Works Department letter No. 356 I, dated 26th November 1868	26,31,085
Public Works Department letter No. 207 I, dated 7th July 1869 ...	4,27,899
	30,58,984

17. It has to be noted that the amount of estimates as sanctioned by the Government of India for the Moota Canal, is only Rs. 30,58,984, and not Rs. 37,47,273 as entered in the Budget.

18. *Item* 86. *Lakh Project—Amount of estimate, Rs.* 2,19,409, *of which Rs.* 2,17,036 *has been spent.*—The revised estimate for this work will require the sanction of the Government of India. Meanwhile, the grant for 1870-71, Rs. 15,000, may stand.

AGRICULTURAL, ORDINARY.

19. No provision has been made, as required in Public Works Department letter No. 155 A—I, dated 20th July 1869, for a refund of the

expenditure of 1¼ lakhs incurred from Loan funds on the Bhatowdee Tank Project; in order to admit of this being done, the grants for the following works are reduced or disallowed :—

	Rs.
Item 72. *New mouth and clearance to the Ghar.*—Provision of Rs. 9,000 disallowed, as the funds for the work may be found from the grant for repairs	9,000
Item 76. *Clearance of jungle along the Narra.*—Provision of Rs. 18,000 disallowed, ditto ditto ...	18,000
Item 85. *Mooktee Nullah Reservoir.*—Funds provided from the grant for Extraordinary Irrigation Works	50,000
Item No. 99.—Grant for Minor Works reduced from Rs. 68,000 to Rs. 20,000	48,000
Total ...	1,25,000

By these reductions the grant for Original Works, Agricultural Ordinary, will stand as follows :—

	Rs.
Specific provision for ordinary works	2,75,000
Provision from ordinary grant to make good outlay improperly charged as extraordinary in former years	1,25,000
Total	4,00,000

20. **In making up the accounts of expenditure for 1870-71, the Controller should debit Rs. 1¼ lakhs of the outlay on Extraordinary works to the Ordinary grant; this will be equivalent to writing back to debit of head "Ordinary" the sum charged in 1867-68 and 1868-69 to the head "Extraordinary."**

21. *Item* 75.—*Completing Fordwah sluice, Rs.* 2,700.—It is understood that this work should have been described as *additions* to, and not *completion* of, sluice.

22. *Items* 78 *and* 93.—*Thurr Canal and Yerla Irrigation Project, Rs.* 32,000.—An expenditure of 1,27,215, excluding charges for Establishment and Tools and Plant, has been incurred on these two works from Loan funds, which must now be refunded from the Ordinary grant. The Government of Bombay has already been addressed on this point in Public Works Department letter No. 30A—I, dated 5th February 1870.

23. *Items* 79, 80 *and* 81.—***Cuts and Embankments in the bed of the Narra, Rs.*** 45,000.—**These works are understood to be mainly required to lead the waters to the Thurr Canal and the country beyond, as also to keep the channel within moderate limits, partly in view to reclaim land now liable to be flooded, and partly to prevent its running to waste into low ground. Under this view, it is thought that the expenditure and revenue should be incorporated with those of the Thurr Canal, or of the Narra generally, and that it would be proper to classify the head-works at Roree, the Mitrow Canal, Thurr Canal, and other channels from the Eastern Narra, under one head as Eastern Narra Irrigation Works.**

COMMUNICATIONS.

24. *Item* 101.—*Road from Dharwar Frontier to Carwar,* viâ *Arbyle Ghât. Amount of estimate, Rs.* 9,86,699. *Computed outlay to end of* 1869-70, *Rs.* 10,32,074. *Grant for* 1870-71, *Rs.* 1,50,000.—The grant may stand, but it is hoped that the revised estimate for the work will be soon furnished.

25. *Items* 107, 112, 126 *and* 127, *as per margin. Grant for* 1870-71, *Rs.* 2,22,500, *to be met from contributions by the Kolapoor State.*—The provision of Rs. 40,000 and of 80,000 for Items 112 and 127 respectively is disallowed, until the estimates for the works shall have been submitted to, and sanctioned by, the Government of India. As regards Item 126, information is desired as to the source from which the expenditure of Rs. 1,28,039 up to end of 1869-70 has been incurred. Meanwhile, the Government of India request that all further expenditure on the work may be stopped until the plans and estimate for it, which are said to be under consideration, are sanctioned by the Government of India.

Item No.	Works.	Amount of Estimate.	Grant, 1870-71.
		Rs.	Rs.
107	Improving road from Nepanee to Phoonda Ghât	27,566	27,500
112	Road from Nepanee to Phoonda Ghât	3,05,700	40,000
126	Bridge over the Panchgunga River	2,27,249	75,000
127	Bridge over the Krishna River..	3,63,444	80,000
		...	2,22,500

26. Information is desired also as to whether the contributions for the above works, and the contribution from the Barreah State, for the road from Dohud to Godra, have actually been realized.

27. *Item* 116.—*Road from Gagoda Khind to Campolee. Amount of estimate, Rs.* 1,59,986. *Grant for* 1870-71, *Rs.* 50,000.

Item 129.—*Bridge across the Moota River at Poona. Amount of estimate, Rs.* 1,92,215. *Grant for* 1870-71, *Rs.* 50,000.

Both of these are new works, the construction of which might perhaps be advantageously deferred for the present. It is suggested that the provision for them should be applied to meet the reduction made in para. 5.

28. *Item* 128.—*Bridge over the Quoina River at Kurrar.*—The sum sanctioned for this work, Rs. 3,60,742, has been expended, and a grant of Rs. 75,000 is proposed for 1870-71. This may stand, but the revised estimate for the work, which is said to be under preparation, should be forwarded for the orders of the Government of India as soon as possible.

29. The grant for Original Works, Communications, from Imperial funds will be as follows :—

	Rs.
Amount provided in Budget-Estimate	8,00,000
Add for Item 5—Improving road from Sheerwal to Panchgunny	25,000
	8,25,000
Less reduction in para. 27 above	1,00,000
Net grant for 1870-71 ...	7,25,000

Miscellaneous Public Improvement.

30. The grants passed are Rs. 2,65,000 for the Kurrachee Harbour Works, and Rs. 10,000 for Minor Works. In addition to this, the following sums are provisionally allowed for the Bombay Port Trust :—

	Rs.
Improvements to Apollo Pier	2,34,000
Reclaiming Gun-Carriage premises	35,300
Lighthouse on South-West Prongs	2,00,000
Moody Bay Reclamation	10,05,700
	14,75,000

The revised estimate for the Moody Bay works will require to be sent forward to the Government of India.

Repairs.

31. Under the head Military, a provision of Rs. 45,000 has been made from Imperial funds for repairs to roads in the Civil and Military Lines in the Cantonments of Poona and Kirkee. In Public Works Department letter No. 26A—B, dated 16th October 1869, the grant for this purpose was restricted to Rs. 13,000 per annum; and in Public Works Department letter No. 88A—B, dated 11th December 1869, an opinion was expressed that the sum of Rs. 30,000 proposed for the maintenance of roads in the Military Station was excessive, and that means should be found to reduce the charge against Imperial Revenues. This does not appear to have been done, but the Governor General in Council would request that the charge may be reduced to the sum fixed by the Government of India, the balance of the grant available being applied, at the discretion of the Government of Bombay, to augment the grant for any other sanctioned object under the head "Military".

Establishment.

32. The Budget-Estimate for this head of service amounts to Rs. 21 lakhs, distributed as follows, as compared with the Budget-Estimate of 1869-70 :—

	1870-71. Rs.	1869-70. Rs.
Ordinary grant	15,00,000	17,50,000
Port Trust	75,000	.....
Special Fund	.....	2,00,000
Local Funds	75,000	50,000
Extraordinary grant	4,50,000	4,00,000
	21,00,000	24,00,000

33. This distribution appears suitable, but the actual incidence of the expenditure will have to follow the rules laid down, and the debit to Local funds is subject to such further orders as may be passed on receipt of the Local Fund Public Works Budget-Estimate for 1870-71.

34. A provision of Rs. 1,200 has been made in the estimate for cooly allowance to Executive Engineer, Aden. The nature of this charge should be explained, and whether the provision of Rs. 45,000 for grain compensation to members of the permanent establishment receiving less than Rs. 200 per mensem is now still necessary.

Summary.

35. The following is an abstract of the Bombay Budget-Estimate for 1870-71 as modified by these orders :—

	Original Works.			Repairs.	Establishment.	Tools and Plant.	Railways.	Total.
Ordinary.	Major.	Minor.	Total.					
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Military	21,25,000	2,00,000	23,25,000	4,50,000	...	...	...	27,75,000
Agricultural	3,80,000	20,000	4,00,000	5,00,000	...	...	...	9,00,000
Other Services—								
Civil Buildings	9,02,900	97,100	10,00,000	2,50,000	...	...	...	12,50,000
Communications	7,02,500	22,500	7,25,000	3,50,000	...	...	...	10,75,000
Miscellaneous Public Improvement	2,65,000	10,000	2,75,000	25,000	...	...	...	3,00,000
Establishment	...	...	...	...	15,00,000	...	...	15,00,00
Tools and Plant	...	...	...	...	...	1,25,000	...	1,25,000
	18,70,400	1,29,600	20,00,000	6,25,000	15,00,000	1,25,000	...	42,50,000
Total ...	43,75,400	3,49,600	47,25,000	15,75,000	15,00,000	1,25,000	...	79,25,000
State outlay on Guaranteed Railways, *vide* P. W. D. Resolution No. 85A – R, dated 15th February 1870.	...	...	...	...	...	...	8,07,000	8,07,000
Total Ordinary ...	43,75,400	3,49,600	47,25,000	15,75,000	15,00,000	1,25,000	8,07,000	87,32,000
Extraordinary.								
Irrigation Works	20,50,000	...	20,50,000	...	4,50,000	75,000	...	25,75,000
Port Trust Works	14,75,000	...	14,75,000	...	75,000	...	...	15,50,000
State Railways	...	...	...	...	...	...	1,50,000	1,50,000
Total ...	35,25,000	...	35,25,000	...	5,25,000	75,000	1,50,000	42,75,000
Grand Total ...	79,00,400	3,49,600	82,50,000	15,75,000	20,25,000	2,00,000	9,57,000	1,30,07,000

36. In addition to the above, an expenditure of Rs. 13¼ lakhs, as per margin, is to be debited to Local funds and contributions. This is exclusive of the large expenditure that is to be incurred from Local funds, and provided for in the Local Fund Public Works Budget-Estimate for 1870-71.

	Rs.
Contributions.	
Military	22,260
Civil Buildings	4,66,140
Communications	3,06,820
Total	7,95,520
Local Funds.	
Communications	5,70,000
Establishment	75,000
Total	6,45,000
GRAND TOTAL	14,40,520
Less disallowed in para. 25 of these orders	1,20,000
	13,20,520

37. It has to be noted that no provision has been made in the Budget-Estimate for the items of charge noted in the margin. If it be determined to adjust these charges by a debit to Imperial funds in 1870-71, it will be necessary to provide a re-appropriation of Budget credits for the purpose.

Extinction of debt due by the Back Bay Reclamation Company by purchase of certain land in the city of Bombay.
Extinction in part of Vehar water debt by purchase of Freeland Estate, Bombay, *vide* P. W. D. letter No. 150A.—G., dated 17th December 1869.
Grant-in-aid to Municipality of Surat, *vide* P. W. D. letter No. 781A, dated 10th September 1869.

38. It is noticed that, in the indent for stores submitted to the Secretary of State by the Government of Bombay, a floating landing stage, with two sets of landing-steps and diagonal chains or moorings, has been indented for. This is said to be required for the Apollo Pier, and a Budget provision of Rs. 2 lakhs under head "Port Trust" has been made to meet the charge. But the grant has only been provisionally allowed, and until arrangements are finally settled as to the source from whence funds are to be obtained for the work, the Secretary of State should be requested to defer compliance with this indent.

PUBLIC WORKS REVENUE.

39. The estimate amounts to Rs. 3,07,500 as follows:—

	Rs.
Revenue Miscellaneous	2,72,100
„ Irrigation	35,400
Total ...	3,07,500

FORT WILLIAM; *March* 3, 1870.

R. STRACHEY, *Colonel, R. E.,*
Offg. Secy. to the Govt. of India.

BENGAL BUDGET ORDERS, 1870-71.

The Bengal Public Works Budget-estimate for 1870-71 has been framed for the grant of Rs. 110¼ lakhs assigned in Public Works Department Circular No. 104 of 1869, and is now modified, with reference to the remarks made below, by the transfer of Rs. two lakhs from the grant for Ordinary Agricultural Works, to that of Original Works, Civil Buildings. The following slight alterations are also made in the estimate to bring the grant to even numbers, for which estimates should always be framed:—

	Add. Rs.	Deduct. Rs.
ORDINARY—		
Original Works.		
Civil Buildings	...	611
Communications	2,228	
Miscellaneous Public Improvement	...	369
Repairs.		
Communications	...	500
Establishment	...	748
	2,228	2,228
EXTRAORDINARY—		
Irrigation Works	500	
Establishment	...	500
	500	500

2. These alterations leave the estimate for 1870-71 as follows:—

	Original Works. Major.	Original Works. Minor.	Original Works. Total.	Repairs.	Establishment.	Tools and Plant.	State Outlay on Railways.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
ORDINARY—								
Military	9,10,000	90,000	10,00,000	4,00,000	...	...	...	14,00,000
Agricultural	2,58,000	42,000	3,00,000	4,00,000	...	...	...	7,00,000
Other Services—								
Civil Buildings ...	9,03,000	1,02,000	10,05,000	5,00,000	...	...	...	15,05,000
Communications ...	5,29,000	55,000	5,84,000	9,67,000	...	...	...	15,51,000
Miscellaneous Public Improvement	21,000	5,000	26,000	1,000	...	...	...	27,000
Establishment... ...	...	...	...	...	17,52,000	...	...	17,52,000
Tools and Plant ...	...	...	...	...	...	90,000	...	90,000
	14,53,000	1,62,000	16,15,000	14,68,000	17,52,000	90,000	...	49,25,000
TOTAL ...	26,21,000	2,94,000	29,15,000	22,68,000	17,52,000	90,000	...	70,25,000
State Outlay on Guaranteed Railways, *vide* Public Works Department Resolution No. 74 A—R, dated 11th February 1870 ...	...	...	...	...	...	...	1,40,000	1,40,000
Outlay on State Railways, *vide* do. do. ...	...	...	...	...	...	...	1,25,000	1,25,000
TOTAL ORDINARY ...	26,21,000	2,94,000	29,15,000	22,68,000	17,52,000	90,000	2,65,000	72,90,000
EXTRAORDINARY.—								
Irrigation Works	28,20,000	...	28,20,000	...	7,30,000	4,50,000	...	40,00,000
State Railways							1,55,000	1,55,000
TOTAL EXTRAORDINARY ...	28,20,000	...	28,20,000	...	7,30,000	4,50,000	1,55,000	41,55,000
GRAND TOTAL ...	4,41,000	2,94,000	57,35,000	22,68,000	24,82,000	5,40,000	4,20,000	1,14,45,000

3. One noticeable feature of this estimate is the large number of appropriations proposed for a variety of works which the amounts provided are quite insufficient to complete. The Government of India cannot think that this is a desirable mode of applying the money available, but beyond indicating this opinion, the Governor General in Council will not interfere with the arrangements which the Government of Bengal have made.

4. The following remarks are called for on the details of the estimate :—

ORIGINAL WORKS.

MILITARY.

5. *Item No.* 1.—*Battery at Chingree Khall. Amount of estimate Rs.* 72,327. *Computed outlay to end of* 1869-70, *Rs.* 85,796. *Grant for* 1870-71 *Rs.* 15,000.—This work ought to be completed within the year. The design in all probability will have to be altered with reference to the remarks lately made by His Excellency the Commander-in-Chief on the subject.

6. *Item No.* 45.—*Constructing building for Railway Cranes and Turntables, Kidderpoor Dock-Yard, Rs.* 12,000.—This work not having been commenced as yet, the grant for it is disallowed. The sum thus set free may be applied to augment the grant for Military Works in progress.

CIVIL BUILDINGS.

7. No provision has been made in the Budget-estimate for continuing the construction of the Museum, the University, and the Telegraph Office at Calcutta. Under present circumstances this may be unavoidable, but the sum provided for the High Court at Calcutta seems insufficient to ensure adequate progress, and the grant for it is therefore increased from Rs. 2½ lakhs to 4 lakhs, which, it is expected, will be sufficient to complete the work. This the Government of India desire to have effected as soon as possible, and that the upper storey of the building may be carried on so as to admit of speedy occupation.

8. It appears not to be proposed to go on with the Museum at Calcutta during the year. By Act XVII of 1866, the Government bound itself to complete this work by the 23rd March 1871.

9. Appropriations as per margin have been made for construction of Central Jails. The Government of Bengal have already been informed that these works must be carried out as far as possible by convict labour; by this arrangement, a considerable portion of this grant will be available for other works.

	Rs.
102.—Hazareebaugh	50,000
103.—Midnapoor	45,000
104.—Bhaugulpoor	50,000

10. *Items* 54 *and* 55. *Gas furnaces, producers, and shed in Mint, Calcutta. Amount of estimate Rs.* 97,871.—The computed outlay to end of 1869-70, Rs. 84,061, thus leaving Rs. 14,000 to complete the works. But no provision whatever is made for so doing, and the necessary funds for the purpose must be got by a re-appropriation of Budget-credits; Rs. 50,000 are available under paras. 1, 7 and 15 of these orders.

AGRICULTURAL, EXTRAORDINARY.

11. Under this head, Items 145 to 151 (Orissa Irrigation Works, Rs. 5,89,621), are for works actually in progress and which must now be completed. Items 152 to 155 are for new sections of the High Level Canal, which have either not been commenced, or on which the expenditure has been quite insignificant. The estimates for the works have not been sanctioned, and no further expenditure should be incurred until regular sanction is given.

12. *Item No.* 180. *Subsidiary Minor Works for the Damoodah Canal Rs.* 48,537.—It is not understood what is meant by this entry, but the amount is added to the grant for the Damoodah Canal. The revised estimate for the canal has still to be sanctioned by the Government of India, and pending specific sanction no work must be put in hand.

13. *Item No.* 181. *Compensation for land for the Orissa and Behar Projects, Rs.* 2,00,000.—This should not be treated as a separate item, but

the outlay should be considered as a portion of the grants for the works for which the land is taken up. It is a well known rule that the cost of lands has to be included in estimates for works.

AGRICULTURAL, ORDINARY.

14. Under this head, expenditure to the extent of Rs. 2,29,000 is proposed for the Gunduck embankments.* It is said that the estimates, which have been repeatedly called for, are now with the Government of Bengal, and will be submitted on receipt of certain information from the Revenue Board.

* Amounting to Rs. 3,25,364 exclusive of Rs. 50,000 for land.

15. No further expenditure should be incurred on this work until the estimates for it have been properly sanctioned, and as there is nothing before the Government of India to show that it is liable for protective works of this class, the appropriation of Rs. 2,29,000 to them is disallowed. Of this amount, Rs. 2 lakhs is transferred to the grant for Civil Buildings, leaving Rs. 29,000 at the disposal of the Government of Bengal for appropriation to Agricultural Works, the total grant for which head of service will thus be Rs. 3 lakhs.

COMMUNICATIONS.

16. The appropriation for this head of service, with the modification made in the 1st para. of these orders, is passed for an even sum of Rs. 5,84,000, but it is suggested that some of the following works might be given up during next year to provide for greater progress on other and more important ones.

Item No. 207, Rs. 30,000.—Trunk Road from Sylhet to Cachar. The proposed appropriation will make no appreciable progress in the construction of the work.

Item No. 225, *Rs.* 15,000.—Metalling Cuttack Trunk Road. The sum proposed will not complete the work.

Item No. 230, *Rs.* 24,541.—Remodelling road from Madras to Cuttack Frontier. As above.

Item No. 242, *Rs.* 20,000.—Remodelling Section VII of the Trunk Road from Debrooghur to Jorehât. The estimate for this work is likely to be largely exceeded, and the propriety of going on with it is extremely doubtful.

Item No. 248, *Rs.* 40,000.—Section III of Assam Trunk Road. The complete estimate for this work is not ready.

Item No. 250, *Rs.* 12,000.—Renewal of road from Debrooghur to Jeypoor. No appreciable progress can be made with a grant of Rs. 12,000.

Item No. 252, *Rs.* 15,000.—Road from Nowgong to Lowkwaghât. As above. The estimate for this work has been already exceeded.

Item No. 255, *Rs.* 45,000.—Bridge over the Burrakur River. The proposed grant will not complete the work.

REPAIRS.

17. Under Military, the proposed grant is Rs. 4 lakhs against a grant of Rs. 4½ lakhs for 1869-70, and an outlay of 3¾ lakhs in 1868-69 and 1867-68. The sum of Rs. 16,500 provided for repairs to Cantonment Roads at Barrackpoor, appears excessive, and must be reduced. On this point attention is invited to the instructions contained in Public Works Department letter No. 271 A, dated 8th April 1868. A specific proposal should be made for fixing a grant for Barrackpoor in the manner usual in other Cantonments.

18. The outlay on repairs to Civil Buildings from 1866-67 to 1868-69, amounted to about 4 lakhs yearly, whereas the grant proposed for 1870-71 is Rs. 5 lakhs.

The following items appear to be very high :—

	Rs.
Repairs to Writers Buildings, Calcutta	29,000
,, to Treasury	16,300

19. Under Communications, the proposed grant is passed for Rs. 9,67,000, the outlay from Imperial Funds during 1868-69 having been Rs. 8,33,000, and in 1867-68 Rs. 7,05,000.

20. An appropriation of Rs. 68,000 is proposed for the maintenance of the Calcutta Maidan roads, the grant for the purpose for 1869-70 having been Rs. 42,000, and the outlay of the three preceding years, Rs. 45,413, Rs. 60,920, and Rs. 52,000 respectively. The Government of Bengal should be asked to state, with reference to the correspondence terminating with Public Works Department letter No. 420 A, dated 11th May 1865, and the reply thereto, whether some arrangement cannot now be made for providing for this charge from other than Imperial funds. The Government of India cannot assent to the further grant of money from the general revenues for the roads of Calcutta, and an early settlement of this matter is desirable, on the basis of fixing some grant for the roads within Fort William, and providing for all other public roads from the Municipal Funds.

ESTABLISHMENT.

21. Under this head the estimate amounts to Rs. 24,82,000 as follows, compared with the grant of 1869-70 :—

	Establishment, 1870-71.	Establishment, 1869-70.	Total Grant for 1870-71.	Percentage which Outlay on Establishment for 1870-71 bears to Total Grant.
	Rs.	Rs.	Rs.	
Ordinary—				
Buildings and Roads	14,89,000	19,12,000	60,62,000	24·5
Agricultural	1,99,000		9,63,000	20·6
Revenue	64,000	...	...	...
	17,52,000	19,12,000	70,25,000	24·9
Extraordinary—				
Irrigation	7,30,000	8,00,000	40,00,000	18·25
Grand Total ...	24,82,000	27,12,000	1,10,25,000	22·51

22. Thus the charges for Establishment under the head "Ordinary" absorb no less than one-fourth of the total grant. This cannot be accepted as a satisfactory arrangement. It may be admitted that the ratio of establishment charge to total outlay cannot always be maintained at a constant figure, and that when work is suddenly reduced, establishment cannot always be brought down commensurately. Still there appears to be a case here for decided and vigorous action, and the Government of India would ask that ahe state of the Bengal establishments may be at once investigated in view to ll possible reductions being made.

23. The Government of Bengal should be requested to supply as early as possible a statement showing the probable expenditure in each Division, during 1870-71, and the charge for establishment attached thereto. It is understood that in some of these Divisions there is little or no work to be done now under the present reduced rate of expenditure.

24. Meanwhile, the following points may be observed :—

The number of Upper Subordinates is exceptionally large in Bengal, as compared with the staff maintained in other Provinces. Vacancies occurring should accordingly not be filled up until receipt of a proposal for fixing a revised establishment in this class.

The number of Accountants in the Office of Account should be limited to that provided in the Budget-estimate of 1869-70. The saving will be Rs. 5,760.

The charges for temporary establishment in that Office should be reduced by Rs. 1,500.

Provision for inferior Medical establishment is larger than seems necessary. The matter is now under consideration, but possibly a reduction of Rs. 2,880, as well as of Rs. 1,092 under Conservancy establishment, might be effected.

The charges for Navigation establishment appear to be over-estimated by Rs. 3,072, the sum sanctioned being only Rs. 7,920.

25. The Government of India request that the full Revenue establishment, costing Rs. 52,000 per annum, may not be entertained until proved to be really necessary. As matters are at present, it appears out of all proportion to the work to be done and the revenue to be realized, *viz.*, Rs. 1,60,000 per annum.

PUBLIC WORKS REVENUE.

26. Under "Revenue Miscellaneous" the estimate amounts to Rs. 2,41,500, but no explanation has been given of the falling off from the receipts of the current year, which are expected to amount to Rs. 2,62,600. Pending the receipt of this, the amount will be taken at Rs. 2,50,000.

27. Under "Revenue Irrigation" the estimate is for Rs. 1,60,000 and under Railway Rs. 75,000.

FORT WILLIAM,
Dated March 14, 1870.

R. STRACHEY, *Colonel, R. E.,*
Offg. Secretary to the Govt. of India.

NORTH-WESTERN PROVINCES BUDGET ORDERS, 1870-71.

The final grant assigned to the North-Western Provinces for expenditure on Imperial Public Works during 1870-71, excluding Railways, amounted to Rs. 85¼ lakhs, as per margin, which the Local Government has distributed as follows :—

	Lakhs.
Ordinary	50¼
Extraordinary	35
Total ...	85¼

Budget Heads.	1870-71.			Grant for 1869-70.
	Ordinary.	Extraordinary.	Total.	
	Rs.	Rs.	Rs.	Rs.
Military	14,24,000	.....	14,24,000	35,00,000
Agricultural	5,66,000	26,56,000	32,22,000	35,59,400
Other Services—				
Civil Buildings	7,31,860	.. ...	7,31,860	13,69,500
Communications	7,92,500	.....	7,92,500	12,20,000
Miscellaneous Public Improvement	12,000	.....	12,000	5.000
Establishment	14,08,640	*6,00,000	20,08,640	19,39,500
Tools and Plant	90,000	2,44,000	3,34,000	3,81,600
Total Other Services ..	30,35,000	8,44,000	38,79,000	49,15,600
Grand Total...	50,25,000	35,00,000	85,25,000	1,19,75,000

* *Excluding Rs.* 20,000 *entered under the head "Railways."*

2. The grant under Ordinary will be increased by Rs. 56,000 to meet the charges for Conservancy and Working of the Canal Plantations in the North-Western Provinces, which have been transferred to the Public Works Budget-Estimate with effect from 1st April 1870, *vide* Financial Department Resolution No. 828, dated 31st January 1870.

3. Referring first to the details of the Budget-Estimate under the head "Ordinary," the following orders are passed :—

ORIGINAL WORKS.

Military.

4. *Item No.* 8. *Hospital for Native Infantry at Agra. Grant for* 1870-71, *Rs.* 15,000 ; *and No.* 19, *Hospital for Goorkahs at Dehra, Rs.* 20,000.—It is probable that the standard plans for these buildings will have to be considerably modified ; the items are accordingly struck out pending further orders, leaving the amounts available for other Military Works.

5. *Item No.* 12. *Dismantling European Infantry and Artillery Barracks at Meerut. Grant for* 1870-71, *Rs.* 14,000.—The dismantlement of these buildings is to be deferred for the present by desire of His Excellency the Commander-in-Chief. The item is accordingly cancelled, leaving the amount available for other Military works.

6. *Item No.* 17. *Road from Kalsi to Chukrata, Rs.* 20,000. *Item No.* 18, *Road from Kalsi to Saharunpoor, Rs.* 50,000. *And Item No.* 23, *Road from Ramnuggur to Raneekhet, Rs.* 1,20,000.—These works should properly be classed as Communications, and they are transferred to that head accordingly.

7. The grant for Original Works, Military, will thus stand at Rs. 10,27,000 as follows :—

	Rs.	Rs.
Amount as per original estimate		11,05,500
Deduct amount transferred to Communications as above		1,90,000
		9,15,500
Add the following items :—		
Reductions under Civil Buildings, as per para. 9 ...	78,860	
Reduction under Establishment (Account), as per para. 19	7,000	
Further reduction to reduce the total grant for Establishment to an even number	640	
Reduction under Tools and Plant, as per para. 20 ...	25,000	
		1,11,500
		10,27,000

8. Under the explanation given in para. 12 of the forwarding letter, the Military works included in the Budget-Estimate without sanctioned estimates are allowed to stand.

Civil Buildings.

9. The amount provided for expenditure on Original Works under this head, is Rs. 5,78,860. This is reduced to Rs. 5 lakhs, the difference, as per margin, being added to the grant for Military Works, which appears to His Excellency the Governor General in Council to have been relatively cut down too much, see preceding para.

	Rs.
Items Nos. 41 to 53, Revenue Buildings	10,000
Item No. 55, Printing Office at Allahabad	40,000
Item No. 59, Church in new Cantonments, Allahabad...	20,000
Items Nos. 63 to 65, Schools	3,860
Items Nos. 80 to 89, Police Buildings...	5,000
	78,860

10. *Item No.* 67. *Contribution towards the Thornhill Memorial, Museum and Library. Grant for* 1870-71, *Rs.* 10,000.—This work is apparently not urgent. The approval of this item must therefore depend upon whether the work is in progress, and the money really wanted for this purpose. If not, the amount, it is thought, might be more usefully applied.

Communications.

11. *Item No.* 131.—*New road from Papamhow to the Cantonments at Allahabad. Grant for* 1870-71, *Rs.* 7,500.—This item is struck out, leaving the amount available for any other more important work to which the Local Government may think proper to apply it.

Miscellaneous Public Improvement.

12. *Item No.* 137. *Bridges of boats for Hurdwar Fair. Grant for* 1870-71, *Rs.* 9,000.—Disallowed, as not being a proper Public Works charge, *vide* correspondence noted in the margin. The amount will be added to the grant for Communications.

Public Works Department letter No. 106 A, dated 8th June 1869.
Public Works Department letter No. 699 B—C, dated 24th November 1869.

REPAIRS.

13. The provision made for Repairs, Agricultural, amounts to Rs. 4,07,000, which is increased to Rs. 4,50,000 by the addition of Rs. 43,000 to meet charges on account of Conservancy and Working of Canal Plantations, which, under Financial Department Resolution No. 828, dated 31st January

1870, have to be provided for in the Budget-Estimate of the Public Works Department, with effect from 1st April 1870, *vide* para. 2.

ESTABLISHMENT.

14. The total Establishment charges, as estimated for 1870-71, amount to Rs. 20,08,640, against Rs. 19,39,500 for 1869-70 as follows:—

	1870-71. Amount.	1870-71. Total.	1869-70.
	Rs.	Rs.	Rs.
BUILDINGS AND ROADS—			
Direction	1,66,400		1,77,000
Construction, excluding Rs. 5,760 chargeable to Local Funds	4,80,240		5,73,360
Account, proportional charge	65,000		65,000
		7,11,640	8,15,360
IRRIGATION—			
Ordinary ... Direction and Construction ...	2,88,000		3,40,780
Account, proportional charge ...	10,000		8,060
		2,98,000	3,48,840
Extraordinary Direction and Construction ...	5,75,000		4,65,000
Account, proportional charge ...	25,000		20,000
		6,00,000	4,85,000
COLLECTION AND POLICE...	...	2,37,000	1,39,000
ROORKEE COLLEGE	...	1,53,000	1,43,800
GRANT-IN-AID FOR DISTRICT ROADS IN KUMAON ...	...	9,000	7,500
GRAND TOTAL ...	...	20,08,640	19,39,500

15. The charges for Direction and Construction under Buildings and Roads show a decrease of Rs. 1,03,720 as compared with the grant of the current year. But they are still much too high, being 24 per cent. of the amount allowed for expenditure on works and repairs as per margin, and 19·4 per cent. of the total amount provided for Buildings and Roads, including Establishment.

	Rs.
Military	14,24,000
Civil Buildings	7,31,860
Communications	7,92,500
Miscellaneous Public Improvement ...	12,000
Total Works and Repairs ...	29,60,360
Add Establishment	7,11,640
Total Buildings and Roads ...	36,72,000

16. It would appear very desirable that the first opportunity should be taken of a vacancy occurring among the Superintending Engineers to absorb one of the three Circles of the North-Western Provinces, as there can hardly be work sufficient for three such Officers under present circumstances. As one of them is only officiating in this grade, it is a matter for the consideration of His Honour the Lieutenant Governor whether the reduction should not be carried out at once.

17. The amount provided for Establishment under Irrigation, Ordinary, excluding the cost of the special establishment employed in connection with the canal revenue arrangements, is Rs. 2,98,000, as shewn in the foregoing statement, being 50 per cent. on the amount* provided for expenditure on ordinary agricultural works and repairs. This high rate appears to be due partly to the reduction of the ordinary grant, and partly to the comparatively small amount proposed to be charged to the Extraordinary grant on account of Establishment. Taking the two heads Ordinary and Extraordinary together, the total charge for Irrigational Establishments is about 25 per cent. of the total grant for this service, which is very high.

	Rs.
Original Works	1,59,000
Repairs	4,07,000
	*5,66,000

18. The charges for Collection and Police are estimated at Rs. 2,37,000, the excess of Rs. 98,000 over the grant of the current year being due chiefly to the provision made for Lumberdars' and Putwarrees' fees, and for extra measuring establishment, as per margin, *vide* orders of the Government of India, letter No. 27 A—I, dated 16th October 1867. The total grant under this head is increased to Rs. 2,50,000, by the addition of Rs. 13,000 on account of establishments employed on Canal Plantations, *vide* Financial Department Resolution No. 828, dated 31st January 1870.

	Rs.
Lumberdars' and Putwarries' fees ...	80,000
Extra measuring establishment	10,780
	90,780

19. The provision for Establishments under Accounts, excluding Rs. 20,000, which will be dealt with separately, amounts to Rs. 1,00,000,† being Rs. 7,000 in excess of the grant for the current year. This excess, the necessity for which is not apparent, has been transferred to Military Works, *vide* para. 7 of these orders. The reduction in amount of work owing to small expenditure in the Buildings and Roads Branch should at least be a set-off for increased Irrigation works. The grant for Accounts will thus stand at Rs. 93,000, the same as that for the current year, of which Rs. 25,000 are provided for under the head "Extraordinary."

	Rs.
† Buildings and Roads	65,000
Irrigation Ordinary	10,000
Extraordinary	25,000
	1,00,000

TOOLS AND PLANT.

20. The amount, Rs. 25,000, included under this head for stores from England on account of the Press buildings at Allahabad, is disallowed with reference to the reduction under Civil Buildings, *vide* para. 8 of these orders. The Ordinary grant for Tools and Plant will thus stand at Rs. 65,000, the difference, Rs. 25,000, being added to the grant for Military Works, see para. 7.

EXTRAORDINARY.

21. The total grant under this head is reduced from 35 lakhs to 30 lakhs.

22. *Item No.* 106. *Supplementary Canal head, Anoopshuhur. Grant for* 1870-71, *Rs.* 1,00,000. *And Item No.* 115. *Betwa Canal, Rs.* 1,00,000.—These amounts appear to the Governor General in Council to be unnecessarily large for merely survey operations, to which the expenditure must be confined until the projects are sanctioned by the Secretary of State.

SUMMARY.

23. The following is an abstract of the Imperial Public Works Budget-Estimate of the North-Western Provinces for 1870-71, as modified by the foregoing orders and with the following slight alterations which have been made to bring the appropriations for the different services to even figures :—

		Rs.		Rs.
Original works, Military, altered from		10,26,500	to	10,27,000
„ Communications, altered from ...		2,16,500	to	2,17,000
„ Civil Buildings, Major, altered from		4,44,140	to	4,44,000
„ „ Minor „ ...		55,860	to	56,000
Repairs, Military	„ ...	3,18,500	to	3,18,000
Establishment	„ ...	14,14,500	to	14,14,000

Budget Heads.	Original Works.			Repairs.	Establishment.	Tools and Plant.	Total.
	Major.	Minor.	Total.				
Ordinary.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Military	9,17,000	1,10,000	10,27,000	3,18,000	...	...	13,45,000
Agricultural	29,000	1,30,000	1,59,000	4,50,000	...	...	6,09,000
Other Services :—							
Civil Buildings	4,44,000	56,000	5,00,000	1,53,000	...	...	6,53,000
Communications	2,12,000	5,000	2,17,000	7,75,000	...	...	9,92,000
Miscellaneous Public Improvement	...	...	...	3,000	...	...	3,000
Establishment	...	...	...	...	14,14,000	...	14,14,000
Tools and Plant	...	...	...	...	...	65,000	65,000
Total Other Services ...	6,56,000	61,000	7,17,000	9,31,000	14,14,000	65,000	31,27,000
Total Ordinary ..	16,02,000	3,01,000	19,03,000	16,99,000	14,14,000	65,000	50,81,000
Extraordinary.							
Agricultural	21,56,000	...	21,56,000	...	6,00,000	2,44,000	30,00,000
Total Ordinary and Extraordinary	37,58,000	3,01,000	40,59,000	16,99,000	20,14,000	3,09,000	80,81,000

24. In addition to the above, a sum of Rs. 50,760 is to be expended by Officers of the Public Works Department from Local Funds as follows :—

	Rs.
Original Works, Communications	45,000
Establishment	5,760
	50,760

25. It may here be noted that there is a difference of Rs. 60* between the amount deducted on account of Local Funds as shown by the Controller's Note page 2, and the abstract at foot of Part IV of the Budget-Estimate, the cause of which is not understood. The latter, however, appears to be the correct amount, and it has been accepted accordingly.

	Rs.
*Amount shown in Controller's Note ..	5,820
„ in abstract at foot of Part IV	5,760
Difference	60

RAILWAYS.

26. The amount passed under this head for 1870-71, as per separate orders, is Rs. 32,97,000 as follows :—

	Rs.
Extraordinary. Expenditure on State Railways ...	31,43,000
Ordinary. State expenditure on Guaranteed Railways	1,54,000
	32,97,000

PUBLIC WORKS REVENUE.

27. The estimated receipts on account of Public Works Revenue Miscellaneous during 1870-71, amount to Rs. 2,80,000. This includes a sum of about Rs. 80,000 for Stores from London for the Roorkee Workshops which, under orders about to issue, will be adjusted by means of a remittance account, and not by credit to Public Works Revenue as was intended. Deducting this item, the estimate is reduced to Rs. 2,00,000 as follows :—

	Rs.
Tolls, dues, fees, fines, and refunds	90,000
Rents of buildings	22,500
Sales of produce	72,000
„ of buildings, and of tools and plant	15,500
	2,00,000

28. The receipts on account of Irrigation Revenue are estimated to amount to Rs. 27,12,000. To this may be added Rs. 53,000 on account of receipts from Canal Plantations which have to be accounted for as Public Works Revenue with effect from 1st April 1870, *vide* Financial Department Order of 31st January quoted above.

Fort William,
March 3, 1870.

R. STRACHEY, *Colonel, R. E.,*
Offg. Secy. to the Govt. of India.

PUNJAB BUDGET ORDERS, 1870-71.

The Ordinary Budget grant assigned to the Punjab for expenditure on Public Works from Imperial funds during 1870-71 amounted to Rs. 54 lakhs, which has been distributed as follows, as compared with the grant for 1869-70 :—

	1870-71.	1869-70.	INCREASE.	DECREASE.
	Rs.	Rs.	Rs.	Rs.
Military Works and Other Services.				
Military Works and Repairs ...	20,25,000	36,00,000	.....	15,75,000
Other Services	12,35,600	21,92,200	.....	9,56,600
Tools and Plant	80,820	82,000	.....	1,180
	33,41,420	58,74,200	.....	25,32,780
Establishment	8,51,580	10,27,900	.....	1,76,320
	41,93,000	69,02,100	.....	27,09,100
Agricultural, Ordinary.				
Works and Repairs	7,50,000	6,00,000	1,50,000	.....
Establishment ...	2,61,000	2,21,700	39,300	.....
Establishment. Collection and Police	1,96,000	1,76,200	19,800	.....
	12,07,000	9,97,900	2,09,100	.....
GRAND TOTAL ...	54,00,000	79,00,000	.....	25,00,000

2. This abstract shows that while the grant for 1870-71 for works and repairs under Military and Other Services has been reduced by Rs. 25¼ lakhs, or by upwards of 43 per cent., the grant for Establishment has been reduced by only 17 per cent., and now stands at about 20 per cent. on the total grant of the year. Considering that the outlay on Military Works is, as a rule, concentrated at a few stations, the charges for establishment would appear to be susceptible of further reduction. Something has already been done in this direction, bu their cost appears still incommensurate with the reduced grant, and to call for immediate and particular attention. In this view, it is suggested for the consideration of the Government of the Punjab, whether the appointment of one of the three Superintending Engineers for the General Department might not perhaps be dispensed with, and that the number of executive divisions might be diminished. A further reduction of Upper Subordinates might also be practicable, and in the charges for temporary establishment, both work and clerical. Railways and Irrigation will probably absorb all reductions that can be made.

3. Under the head Extraordinary, the Budget-Estimate provides for an expenditure of Rs. 38,42,000 on Irrigation works, whereas the grant assigned for the purpose is only Rs. 34 lakhs. The difference Rs. 4,42,000 represents the proposed increase to Establishments for loan Irrigation Works, which has not yet been sanctioned. The Budget-Estimate of expenditure from Loan funds on Irrigation works will therefore be reduced to Rs. 33⅓ lakhs, being the grant originally assigned less the sum available from the Ordinary grant on account of the provision of half a lakh made from it for refund of the expenditure incurred during 1867-68 and 1868-69 from Loan funds on the Madhopoor Workshops.

4. The ordinary grant is increased to Rs. 54,28,000 to provide for charges for Conservancy and Working of Canal Plantations transferred from the Forest to the Public Works Budget-Estimate, *vide* Financial Department Resolution No. 828, dated 31st January 1870.

ORIGINAL WORKS.

MILITARY.

5. The provision made for the following works is disallowed, as it appears not desirable with the present reduced grants to begin more works while so many are already in progress :—

		Rs.
Item No.	20.—Distribution channels from Cantonment watercourse, Meean Meer	25,000
„ „	39.—Church at Subathoo	12,000
„ „	47.—Stables for Royal Artillery, Sealkote ...	13,000
„ „	69.—Lines for a Battery of European Mountain Artillery, Abbottabad, the construction of which has been ordered to be deferred	36,000
„ „	73.—Hospital for Native Cavalry at Nowshera, to be held in abeyance pending issue of orders modifying standard plan of hospitals for Native troops...	23,000
„ „	74.—Orderly and Court-martial room at Nowshera...	11,000
„ „	76.—Bakery at Delhi	12,000
„ „	87.—Slaughter-house at Rawulpindee	15,000
	Total ...	1,47,000

6. This amount may be applied to augment the grants for barracks that have been duly sanctioned, or perhaps for new barracks that may be urgently demanded at Lawrencepoor in consequence of damage done to temporary barracks at Campbellpoor by earthquake.

7. ***Items Nos. 88 and 89.—Roads in the Hazara District, Rs. 25,000.***—This grant should properly be accounted for under the head "Communications," and it will be transferred accordingly, thus reducing the allotment for Original Works, Military, to Rs. 17,10,000.

8. The provision made for the following works is allowed to stand, on the condition that no expenditure is incurred until the estimates have been sanctioned by competent authority :—

		Rs.
Item No.	6.—Tank at Subzil-ka-kote Out-post	6,500
„ „	28.—Alteration and re-construction of Native Infantry Lines, Delhi	15,000
„ „	32.—Reconstruction of roofs of slated barracks, Umballa	20,000
„ „	33.—Quarters for Superintendent's rest-house, ditto	5,000
„ „	46.— „ for 20 families, European Infantry Lines, Meean Meer...	24,000
„ „	66.—Lines for a Regiment of Native Infantry, Kohat	20,000
„ „	67.— „ for a Mountain Train Battery, Kohat ...	12,000
„ „	68.— „ for a Regiment of Native Cavalry, Kohat	12,000

9. *Items as per margin.* ***Buildings at Tallagung.***—The Foreign Department will be asked if it is desirable to undertake the outlay involved in establishing a new Civil Station at this place under present circumstances. Meanwhile expenditure should not be incurred, but the grant may stand.

		Rs.
24.	Three wells at Tallagung	3,000
25.	Pumps for ditto	4,000
56.	Bells-of-Arms for Native Infantry at Tallagung	3,200
57.	Quarter-guard at Tallagung	3,800
96.	Collection of materials for Civil buildings at Tallagung	30,000

Civil Buildings.

10. The appropriations made for the following works are disallowed for want of sanctioned estimates or as being for new works the construction of which may be postponed for the present :—

	Rs.
Item No. 93.—Tehseel and Thannah at Depalpoor	17,000
„ „ 98.— Ditto at Lukkee	10,000
„ „ 108.—School-room for girls, Sanawar	16,000
Items Nos. 111 *and* 112.—Workshops and Solitary Cells for prisoners in Jail, Delhi	14,200
Item No. 115.—Police Station, Kalka	4,000
„ „ 116.—Barracks for Reserve Police, Loodiana ...	3,000
„ „ 120.—Solitary cells for prisoners in Central Jail, Lahore	14,100
„ „ 125.— Ditto Ditto Rawulpindee	10,000
	88,300
Add No. 118.—Solitary cells for prisoners, Sealkote	8,500
	96,800

11. Proposals for the specific appropriation of this amount to sanctioned works in progress should be made; meanwhile the amount may stand recorded under the head "Civil Buildings."

12. *Items Nos.* 103 *and* 104. *Buildings at Umritsur, Rs.* 14,500.—This grant is debitable to Local funds, but it is understood that there are no Local funds available to meet the charge. If this is the case, no expenditure should be incurred on the works.

13. *Item No.* 117. *Jail at Umritsur, Rs.* 36,000.—An expenditure of Rs. 42,000 is said to have been incurred on this work without estimate, which is very unsatisfactory.

Agricultural, Extraordinary.

14. The provision made under this head amounts to Rs. 20,44,000, and is passed as follows :—

	Rs.
To be debited to Loan	19,94,000
To be debited to Ordinary grant against provision made for refund of expenditure incurred from Loan funds on Madhopoor Workshops	50,000*
	20,44,000

* The exact amount is Rs. 53,415, but Rs. 50,000 have been entered here to make the grant an even one.

In making up the accounts of expenditure for 1870-71 the Controller should debit Rupees half a lakh of the outlay on Extraordinary works to the Ordinary grant; this will be equivalent to writing back to debit of Ordinary the sums charged in 1867-68 and 1868-69 to head "Extraordinary."

15. Of the provision of Rs. 20,44,000 made under this head, estimates have only been sanctioned for Rs. 3,41,000. It is understood that no expenditure will be incurred from loan funds on the works for which no estimates exist, or on works which have not been specifically sanctioned by the Government of India as Extraordinary.

Agricultural, Ordinary.

16. *Item No.* 186. *Chowkees on Canals, Rs.* 20,000.—It should be stated whether the estimate of Rs. 32,368 for this work has been sanctioned or not. If sanctioned, a reference to the particulars of the authority under which it was done should have been entered in the column set apart for that purpose.

17. *Item No.* 193. *Minor Works, Rs.* 53,500.—This amounts to one-fourth of the grant for works, and appears excessive. The amount is reduced to Rs. 29,500, the balance Rs. 24,000 being applied to augment the grant for other agricultural works in progress on proper authority.

18. The grant for Agricultural Works under head "Ordinary" will stand as follows :—

	Rs.
I.—Provision for specific works	1,56,000
II.— „ to make good outlay erroneously charged as extraordinary in former years... ...	50,000
	2,06,000

Communications.

19. *Item No.* 151. *Tunnel under the River Indus at Attock, Rs.* 10,000.—Separate orders will be issued regarding the source from whence funds are to be provided for this work. Meanwhile, the appropriation of Rs. 10,000 made for the purpose from the Ordinary grant is allowed to stand, to meet necessary expenses connected with the carriage and erection of the pumping engines now on their way from England.

REPAIRS.

20. The grant of Rs. 5,20,000 proposed for repairs under head "Agricultural" is increased to Rs. 5,44,000, to provide for the conservancy and working of the Canal Plantations in the Punjab, which under Financial Department Resolution No. 828, dated 31st January 1870, have now to be provided for in the Budget-Estimate of the Public Works Department.

21. Under Civil Buildings, the grant is passed for Rs. 46,000, and under Miscellaneous Public Improvement for Rs. 11,000. Under Communications it is noticed that the allotment for repairs amounts to Rs. 5,33,100, which is passed for Rs. 5,33,000 against Rs. 7,63,500 provided in 1869-70, the balance being made up from Local funds. As regards the Lahore and Peshawur Road, it is hoped that a considerable reduction of outlay on repairs may be found practicable, now that one-half the road is to be made over to the Railway.

ESTABLISHMENT.

22. The Estimate under this head amounts to Rs. 23,86,580, distributed as follows as compared with 1869-70 :—

	Other Services.		Agricultural.		Total.	
	1870-71.	1869-70.	1870-71.	1869-70.	1870-71.	1869-70.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Direction	1,72,032	1,69,000	1,59,000	1,23,000	3,31,032	2,92,000
Construction	6,09,024	7,96,000	11,80,000	7,18,300	17,89,024	15,14,300
Account	1,03,374	1,14,500	...	...	1,03,374	1,14,500
Collection and Police	...	...	1,96,000	1,76,200	1,96,000	1,76,200
	8,84,430	10,79,500	15,35,000	10,17,500	24,19,430	20,97,000
Less debitable to Local funds	32,850	51,600	...	...	32,850	51,600
Net charges against Imperial funds ...	8,51,580	10,27,900	15,35,000	10,17,500	23,86,580	20,45,400
Distribution of charges.						
Ordinary	8,51,580	10,27,900	4,57,000	3,97,900	13,08,580	14,25,800
Extraordinary	...	...	10,78,000	6,19,600	10,78,000	6,19,600
	8,51,580	10,27,900	15,35,000	10,17,500	23,86,580	20,45,400

23. The estimate does not show clearly the manner in which the charge of Rs. 10,78,000 to the head Extraordinary has been arrived at. It includes a sum of Rs. 4,42,000 for Establishment, which has not been sanctioned as yet, and which is therefore disallowed, thus reducing the debit to Loan funds to Rs. 6,36,000.

24. The Ordinary grant for Establishment is increased to Rs. 13,13,000 to make the sum an even one and to meet charges for establishment for Canal Plantations which has now to be transferred to the Public Works Budget-Estimate. The Punjab Government will have to make such provision from this grant as may be sufficient to provide for the pay of the Mining Engineer on duty there.

TOOLS AND PLANT.

25. The estimate under head "Ordinary" is passed for an even sum of Rs. 81,000.

26. Under Extraordinary, the estimate amounts to Rs. 7,20,000, of which Rs. 3,49,600 is for stores from England. But no indent for such stores has been received as yet.

SUMMARY.

27. The following is an abstract of the Punjab Budget-Estimate for 1870-71 as modified by the foregoing orders :—

	Original Works.			Repairs.	Establishment.	Tools and Plant.	State outlay on Railways.	Total.
	Major.	Minor.	Total.					
Ordinary.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Military	16,00,000	1,10,000	17,10,000	2,90,000	...	...	...	20,00,000
Agricultural	2,00,500	29,500	2,30,000	5,44,000	...	...	...	7,74,000
Other Services—								
Civil Buildings ...	3,36,000	36,000	3,72,000	46,000	..	...	...	4,18,000
Communications ...	2,50,000	25,000	2,75,000	5,33,000	...	...	...	8,08,000
Miscellaneous Public Improvement..	11,000	12,000	23,000	11,000	...	...	...	34,000
Establishment ...	...	...	...	...	13,13,000	...	...	13,13,000
Tools and Plant ...	...	...	...	...	...	81,000	...	81,000
	5,97,000	73,000	6,70,000	5,90,000	13,13,000	81,000	...	26,54,000
Total ...	23,97,500	2,12,500	26,10,000	14,24,000	13,13,000	81,000	...	54,28,000
State outlay on Guaranteed Railways ..	...	...	...	...	..	...	57,000	57,000
	23,97,500	2,12,500	26,10,000	14,24,000	13,13,000	81,000	57,000	54,85,000
Extraordinary.								
Irrigation Works ...	19,94,000	...	19,94,000	...	6,36,000	7,20,000	...	33,50,000
Railways	...	...	...	...	...	...	88,50,000	
	19,94,000	...	19,94,000	...	6,36,000	7,20,000	88,50,000	1,22,00,000
	43,91,500	2,12,500	46,04,000	14,24,000	19,49,000	8,01,000	89,07,000	1,76,85,000
And grant for Local funds and contributions—								
Original Works							1,67,700	
Repairs							70,000	
Establishment							32,850	
								2,70,550

PUBLIC WORKS REVENUE.

28. The estimate amounts to Rs. 18,14,000, *viz.* :—

	Rs.
Revenue Miscellaneous	1,28,000
„ Irrigation	16,86,000
	18,14,000

To this may be added Rs. 21,000 for receipts on account of Canal Plantations ordered to be brought to account as Public Works Revenue from 1st April 1870. This raises the total of the estimate to Rs. 18,35,000.

FORT WILLIAM ; *March* 3, 1870.

R. STRACHEY, *Colonel, R. E.*,
Offg. Secy. to the Govt. of India.

CENTRAL PROVINCES BUDGET ORDERS, 1870-71.

The final Public Works grant assigned to the Central Provinces for 1870-71 is 30¾ lakhs, which the Local Administration has distributed as follows :—

Heads of Service.	1870-71. Ordinary.	1870-71. Extraordinary.	1870-71. Total.	1869-70, Reduced Grants.
	Rs.	Rs.	Rs.	Rs.
Military	7,07,100	...	7,07,100	8,85,000
Agricultural	50,000	5,10,000	5,60,000	3,76,070
Other Services—				
Civil Buildings	1,46,922	...	1,46,922	2,27,250
Communications	10,10,500	...	10,10,500	14,58,950
Miscellaneous Public Improvement ...	10,000	...	10,000	11,000
Establishment	4,85,000	60,000	5,45,000	8,77,730
Tools and Plant	65,478	30,000	95,478	89,000
Total Other Services	17,17,900	90,000	18,07,900	26,63,930
Grand Total	24,75,000	6,00,000	30,75,000	39,25,000

2. This distribution will be slightly altered in accordance with the following remarks.

BUILDINGS AND ROADS.

3. *Items Nos.* 11 *and* 12 *as per margin.* *Grant Rs.* 30,000.—Disallowed, as it does not appear desirable to commence new works at the present time, while old ones are still incomplete for want of funds. The amount is added to item No. 13 (twelve barracks for Infantry at Jubbulpoor) the grant for which is thus increased to Rs. 2,30,000.

	Rs.
11. Extension of Cantonment, Jubbulpoor	15,000
12. Church at Jubbulpoor	15,000

4. *Item No.* 28. *Improvements to Deputy Commissioner's Court-house, Raepoor, Rs.* 8,100.—Disallowed for some reason, and added to item No. 24 (Central Jail at Jubbulpoor) the grant for which is thus increased to Rs. 38,100.

5. *Item No.* 33.—*Additions to Nagpoor Museum, Rs.* 10,000.—This work is not of an urgent nature, and the estimate has not yet been sanctioned. The item is accordingly struck out, leaving the amount available for properly sanctioned works.

6. *Item No.* 48.—*Kanhan Bridge, Rs.* 1,70,000.—This allotment is allowed to stand subject to the orders which may be passed on the revised Estimate which is now under consideration.

IRRIGATION.

7. The grant for the Kanhan Project (Item No. 36) may stand, subject to expenditure being finally allowed.

ESTABLISHMENT.

8. The necessity for the increased provision for Clerks under "Direction" and "Construction" is not apparent. The amounts provided are certainly within the

sanctioned scale, but that scale was sanctioned before the late reductions in expenditure, the effect of which, and of reducing the number of Executive Divisions, should certainly be to diminish correspondence and clerical labour.

9. The total rate for Establishment of 17·7 per cent. on the total grant is certainly not high, and the Government of India recognize the prompt efforts made by the Administration to adjust their working power to the altered state of things ; but then it is very unlikely that the extraordinary estimate for works will be worked up to, and if it is not, provision will have to be made from the Ordinary grant for such portion of the amount, Rs. 60,000, now proposed to be debited to the Extraordinary grant as cannot fairly be charged to that grant, and the percentage will be increased proportionately.

10. The following reductions will accordingly be made from this part of the estimate :—

		Rs.
Office of Chief Engineer and Secretary		5,000
Jubbulpoor Circle		1,000
Construction	English Clerks	4,000
	Vernacular „	1,000
	Total ...	11,000

This amount will be added to the Ordinary grant for Communications. A detail should be furnished in the usual form of the items comprising the provision of Rs. 2,04,200 made under the head Establishment for the Upper Godavery Works.

11. The total appropriations under each head of service should have been reduced to round numbers. This will now be done as follows :—

	Increase.	Decrease.
	Rs.	Rs.
Original Works—		
Military	...	750
Civil Buildings	78	...
Communications	13,050	...
Repairs—		
Military	...	350
Communications	...	550
Establishment	...	11,000
Tools and Plant	...	478
Total	13,128	13,128

12. The small item, Rs. 550, provided in the Budget-Estimate for the purchase of land on account of Guaranteed Railways has been struck out ; any trifling expenditure which may have to be incurred on this account during 1870-71 can be met from the Ordinary Public Works grant, or may be regarded as a permissible excess over that grant if necessary. This disposes of the separate estimate for this item received with Officiating Secretary's letter No. 394—5640, dated 10th November last.

SUMMARY.

13. The following is an abstract of the Central Provinces Public Works Budget-Estimate for 1870-71, as modified by the foregoing orders :—

Budget Heads.	Original Works.			Repairs.	Establishment.	Tools and Plant.	Total.
	Major.	Minor.	Total.				
Ordinary.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Military	6,08,000	38,000	6,46,000	60,000	...	...	7,06,000
Agricultural	...	50,000	50,000	..	..	...	50,000
Other Services—							
Civil Buildings	95,000	18,000	1,13,000	34,000	..	...	1,47,000
Communications	7,79,000	27,000	8,06,000	2,17,000	...	...	10,23,000
Miscellaneous Public Improvement	...	...	...	10,000	...	...	10,000
Establishment	...	...	...	...	4,74,000	...	4,74,000
Tools and Plant	...	...	...	...	...	65,000	65,000
Total "Other Services"	8,74,000	45,000	9,19,000	2,61,000	4,74,000	65,000	17,19,000
Total Ordinary ...	14,82,000	1,33,000	16,15,000	3,21,000	4,74,000	65,000	24,75,000
Extraordinary.							
Agricultural	5,10,000	...	5,10,000	...	60,000	30,000	6,00,000
Total Ordinary and Extraordinary	19,92,000	1,33,000	21,25,000	3,21,000	5,34,000	95,000	30,75,000

14. In addition to the above, it is estimated that Rs. 16,000 will be spent by Public Works Officers from Local funds during the year 1870-71, as follows :—

	Rs.
Repairs, Miscellaneous Public Improvement ...	12,000
Establishment	4,000
Total ...	16,000

PUBLIC WORKS REVENUE.

15. The estimate of Public Works revenue for 1870-71 amounts to Rs. 14,540, against a Regular-Estimate of Rs. 52,500 for 1869-70. This remarkable difference appears in the estimate without a word of explanation. Seeing that the actual average receipts of the last 5 years have amounted to nearly Rs. 60,000 per annum, as per margin, the estimate for 1870-71 may, it is thought, be increased to Rs. 50,000, the amount for the current year, as follows :—

	Rs.
1864-65	73,470
1865-66	38,378
1866-67	52,225
1867-68	51,710
1868-69	83,100
	2,98,883
Average	59,776
or say per annum ...	60,000

	Rs.
Tolls, fines and refunds	34,700
Rents of buildings	12,300
Sales of produce	2,000
Sales of buildings, and tools and plant	1,000
Total ...	50,000

But a report should be furnished on the subject by the Local Administration.

FORT WILLIAM, *February* 22, 1870.

R. STRACHEY, *Colonel, R. E.,*
Offg. Secy. to the Govt. of India.

BRITISH BURMAH BUDGET ORDERS, 1870-71.

In this Budget-Estimate the mistake has been made of including the grant from Local Funds to meet outlay on Establishment in the body of Part I of the estimate, nor has a comparison been made between the grants of the ensuing and current official year as prescribed by the rules.

2. The Budget-Estimate has been framed for a total grant of Rs. 18¼ lakhs, as sanctioned in Public Works Department Circular No. 104 of 1869, distributed as below with the following slight alterations which have been made to bring the appropriations for the different services to even figures :—

	Rs.	Rs.
Original Works, Communications, altered from	4,61,100	to 4,61,000
Establishment „ „ „	3,96,900	to 3,97,000

Heads of Service.	Original Works.			Repairs.	Establishment.	Tools and Plant.	Total.
	Major.	Minor.	Total.				
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Military	2,40,000	24,000	2,64,000	86,000	...	...	3,50,000
Agricultural	1,36,000	22,000	1,58,000	28,000	...	...	1,86,000
Other Services—							
Civil Buildings	1,89,000	19,000	2,08,000	39,000	...	...	2,47,000
Communications	4,48,000	13,000	4,61,000	1,37,000	...	...	5,98,000
Miscellaneous Public Improvement	24,000	4,000	28,000	5,000	...	...	33,000
Establishment	...	...	...	...	3,97,000	...	3,97,000
Tools and Plant	...	...	...	...	...	15,000	15,000
	6,61,000	36,000	6,97,000	1,81,000	3,97,000	15,000	12,90,000
Total ...	10,37,000	82,000	11,20,000	2,96,000	3,97,000	15,000	18,25,000
Add grant-in-aid from Local Funds—							
Establishment							58,200
Grand Total							18,83,200

3. This distribution of the grant is approved, subject to the following remarks, and on the understanding that no expenditure will be incurred on works for which estimates have not been sanctioned by competent authority.

4. Of the several works entered in the Budget-Estimate, the estimates for which are noted as having been submitted, the following have since been sanctioned by the Government of India :—

Item No.	Works.	Amount of estimate.	Computed outlay to end of 1869-70.	Grant, 1870-71.	Reference to sanction.
		Rs.	Rs.	Rs.	
1	Fortification of Arsenal position, Rangoon	2,67,012	1,94,000	63,000	Register No. 128 M of 1868-69, and No. 96 B M of 1869-70.
8	Ordnance Magazine at Rangoon	41,469	5,000	25,000	Register No. 100 B M. of 1869-70.
13	Protestant Church, Tounghoo	10,262	...	10,000	
29	Jail at Tounghoo	1,58,399	1,49,000	9,000	Register No. 71 C of 1869-70.
37 & 41	Bridges on Rangoon and Prome Road ...	4,40,076	18,000	1,10,000	„ „ 82 C of „
40	4th Section of ditto	1,81,296	1,24,645	36,100	„ „ 76 C of „
46	Tantabeen Road	97,561	77,191	20,000	„ „ 77 C of „

5. The estimates for the following works are still under the consideration of the Government of India:—

		Rs.
Item No.	5.—Hospital for European Infantry, Tounghoo	1,98,396
„ „	33.—Zaloon Embankment	91,179
„ „	38.—Bridge over the Wetpouk Choung ... ... held over pending receipt of information called for in Public Works Department letter No. 724 B—C, dated 4th December 1869.	30,465
„ „	47.—Sanitary Camp-road, Tounghoo ... ... held over pending receipt of information called for in Public Works Department letter No. 62 B—C, dated 28th January 1870.	62,286

6. Orders on Item 52, Accommodation at Elephant Point for Light House Inspector, have been given in Public Works Department letter No. 66 B—C, dated 31st January 1870. It is probable that the estimate, after the revision which has been ordered, will be within the power of sanction of the Chief Commissioner. As the project has been generally approved subject only to slight modifications, the entry may stand.

7. The appropriations made for Lock Hospitals at Rangoon, Akyab, Moulmein and Bassein (Items Nos. 17 to 20, Rs. 31,000) are allowed to stand, subject to sanction of estimates by competent authority. The grants for the following works are also allowed to stand, on the understanding that the revised estimates for them, which are said to be under preparation, are submitted as soon as possible :—

		Rs.
Item No.	4.—Hospital for Royal Artillery, Thayetmyo	44,499
„ „	7.—Quarter-guard and Cells for European Infantry, Tounghoo	48,143

8. The Governor General in Council observes that several of the entries in Part II are for new works not yet begun. Having in view the great importance of completing all works in progress before any thing fresh is undertaken, a consideration which is of more than usual weight at the present time, it is directed that none of the following items shall be commenced until the Government of India has been satisfied of their being really urgently required :—

		Rs.
Item No.	10.—Tanks for Commissariat and Artillery, Rangoon...	11,000
„ „	13.—Church at Tounghoo	10,000
„ Nos.	17 to 20.—Lock-hospitals	31,000
„ No.	21.—Church at Bassein	3,000
„ „	25.—Court-houses, Shoaygyeen	5,000
„ „	50.—Reclamation of swamp in rear of the town of Myanoung	8,000
„ „	51.—Protective embankment at Shoaygyeen ...	6,000
		74,000

Any sums rendered available by these works being deferred may be re-appropriated to the more pressing works actually begun, and now under construction.

9. It is noticed that the sum provided for Repairs, Military, amounts to Rs. 86,000, against Rs. 80,000 for the current year. In the provision for repairs, a sum of Rs. 22,500 is included for maintenance of Cantonment roads, with reference to which the attention of the Chief Commissioner should be drawn to Public Works Department Resolution No. 812 A, dated 17th September 1869, calling for proposals for fixing an annual grant for this purpose in accordance with the principles laid down in Chapter IX, Section iii, para. 9 of Code. It is requested that these proposals may be supplied as early as possible, with explanation as to the precise roads for the repairs of which the following Budget provision has been made under the head " Communications" :—

	Rs.
Rangoon	9,500
Tenasserim	2,500
Prome	6,000
Tounghoo ... ... „	4,500
	22,500

	Rs.
Akyab Imperial roads	2,000
Maulmein Suburban roads	7,000
Mergui and Tavoy Imperial roads	4,000
Rangoon Town and Suburbs Imperial roads	5,000

Items Nos. 48 and 49 of Part II also seem questionable, being for roads in Rangoon Town.

10. The provision for Establishment, excluding that for Port Blair, has been reduced from Rs. 4,21,000 in 1869-70, to Rs. 3,96,900 in 1870-71. The Governor General in Council, while cordially recognizing the efforts that have been made in British Burmah to reduce promptly the cost of Establishment, notices that the charge on this account against Imperial funds still amounts to about 22 per cent. of the allotment. The Government of India will await the report on the subject promised by the Chief Engineer, but meanwhile every practicable reduction should be made. The cost of the Office of Account would appear susceptible of reduction. Seven Accountants have been provided for, but as there are only nine Divisions in the Province, the established proportion is only six, and the Office should be reduced accordingly. Eight Clerks seem somewhat excessive. Moreover, a provision of Rs. 1,500 has been made for temporary establishment, which, since four Burmese Accountants are under training in the Office, appears unnecessary, and is therefore disallowed.

11. In paras. 27 and 28 of the letter transmitting the Budget-Estimate, a proposal is made to debit Local Funds on account of Establishment charges with the actual percentage of the cost of establishment with reference to the actual outlay incurred. This proposal appears proper, but before sanction is accorded to it, information is desired of the probable amount that will be debited to Local Funds by the arrangement.

12. With reference to the 10th para. of the transmitting letter of the Budget-Estimate, explanation should be furnished of the meaning attached to the remark, that the construction of hospital accommodation for a whole Regiment of European Infantry at Thayetmyo has been forced on the Local Administration. The report promised regarding hospital accommodation at Tounghoo will be awaited.

PUBLIC WORKS REVENUE.

13. The estimate for 1870-71 amounts to Rs. 38,500.

FORT WILLIAM; *February* 15, 1870.

R. STRACHEY, *Colonel, R. E.*, *Offg. Secy. to the Govt. of India.*

OUDH BUDGET ORDERS, 1870-71.

This Estimate is not altogether in proper form. The grants-in-aid from Local Funds have been shown in the body of Part I of the Budget-Estimate; they should have been shown only in the memorandum at foot of the estimate. Also the numbers of the different items have not been repeated at the right hand side of Part II of the estimate, as required by Standing Order No. 7 of 1867.

2. The estimate provides for an expenditure of Rs. 30 lakhs from Imperial Funds, being the grant originally assigned for the purpose, but as the grant has since been reduced* to Rs. 28¾ lakhs, it is necessary to modify the Budget-Estimate accordingly. In this view, the following reductions are made as suggested by the Chief Commissioner :—

* Public Works Department Circular No. 104 of 1869.

ORIGINAL WORKS.

MILITARY.

	Rs.	Rs.
Item No. 5.—Barracks for married men, European Infantry, Fyzabad. Grant reduced from Rs. 50,000 to Rs. 30,000	20,000	
„ „ 6.—Barracks for married men, Royal Artillery, Fyzabad. Grant reduced from Rs. 49,000 to Rs. 24,000	25,000	
„ „ 10.—Grant for Minor Works reduced from Rs. 43,000 to Rs. 38,000	5,000	
		50,000

CIVIL BUILDINGS.

Item No. 13.—School-house at Suffeepoor, disallowed ...	3,000	
„ „ 19.— „ at Misrick, „ ...	5,000	
„ *Nos.* 24—26.—Police Buildings, Roy Bareilly, disallowed	10,000	
„ *No.* 33.—Jail at Pertabgurh. Grant reduced from Rs. 20,000 to Rs. 14,000	6,000	
„ „ 34.—Jail at Sultanpoor. The Chief Commissioner has recommended that Rs. 6,000 out of Rs. 20,000 should be reduced, but as there is no estimate for the work, the entire provision is disallowed ...	20,000	
		44,000

COMMUNICATIONS.

Item No. 46.—Road from Byramghât to Baraich. Grant reduced from Rs. 1,00,000 to Rs. 69,000		31,000
Total reductions		1,25,000

3. In addition to these reductions, it is also necessary to provide from the Ordinary grant for that portion of the estimated charges for Direction and Account debited in the Oudh Budget-Estimate to the grant for Extraordinary Works. The sum roughly estimated for Establishment for Oudh in Public Works Department Circular No. 96 of 1869 was Rs. 2,55,000. The total in the estimate submitted is Rs. 3,04,644, of which Rs. 6,000 is debitable to Local Funds, and Rs. 43,644 to the Loan grant for Irrigation Works in part payment of the charges under "Direction" and "Account" Ordinary. This latter debit appears open to objection. There must be a Chief Engineer and Controller for the Province in any case, and it will not be well to borrow money to pay for their salaries. The charge must therefore be arranged for otherwise. This will be done by an absolute reduction of Rs. 17,644 as per margin in the total estimate for

	Rs.
Temporary Office establishment for Chief Engineer reduced from Rs. 1,800 to Rs. 800	1,000
Contingencies for Chief Engineer reduced from Rs. 6,000 to Rs. 4,000	2,000
Sub-divisional allowances for 15 Sub-divisions, whereas there are only 12 Upper Subordinates. Provision for three Sub-divisions disallowed	1,080
Temporary establishment and allowances for promotion under head Construction ...	8,600
Office contingencies under ditto. reduced from Rs. 6,000 to Rs 4,000	2,000
Temporary establishment and allowance for promotion under head Accounts	2,704
Contingencies under ditto reduced from Rs. 4,500 to Rs. 4,240	260
	17,644

establishment, the balance, Rs. 26,000 being met by disallowing the provision under Original Works, Civil Buildings, for constructing Havaluts at Lucknow and Sultanpoor (Items Nos. 36 and 38) for which no estimates have been sanctioned as yet.

4. Under the above orders, the grant for Establishment, Extraordinary, will be reduced by Rs. 43,644. A further reduction of Rs. 33,868 will also be made on account of the items as per margin, which should properly be debited to works. The aggregate of the sums thus reduced will be added to the grant for Original Works, Agricultural, which will thus be increased from Rs. 9,76,488 to Rs. 10,54,000. In this is included, however, an item (No. 45) of Rs. 97,649 for Minor Works which is not admissible. The grant for the Sardah Canal must be regarded as a whole, and Minor Works cannot be sanctioned separately by the Chief Commissioner.

Petty Establishment.

	Rs. per mensem.
Artificers, Blacksmiths, &c. ...	750
Duffadars, Peons, Classees, &c....	2,074
	2,824 × 12 = 33,868

5. These several reductions will leave the Oudh Public Works Budget-Estimate for 1870-71 as follows :—

Heads.	Original Works.			Repairs.	Establishment.	Tools and Plant.	State Outlay on Guaranteed Railways.	Total.
	Major.	Minor.	Total.					
Ordinary.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Military ...	2,95,000	38,000	3,33,000	1,17,000	...	...	...	4,50,000
Other Services—								
Civil Buildings ...	1,35,000	25,000	1,60,000	45,000	...	...	...	2,05,000
Communications...	1,62,000	22,000	1,84,000	1,45,000	...	...	...	3,29,000
Establishment ...	...	...	...	...	2,81,000	...	...	2,81,000
Tools and Plant ...	...	...	...	...	...	10,000	...	10,000
	2,97,000	47,000	3,44,000	1,90,000	2,81,000	10,000	...	8,25,000
Total Military and Other Services ...	5,92,000	85,000	6,77,000	3,07,000	2,81,000	10,000	...	12,75,000
State Outlay on Railways ...	...	...	...	...	...	...	90,900	90,900
Total Ordinary...	5,92,000	85,000	6,77,000	3,07,000	2,81,000	10,000	90,900	13,65,900
Extraordinary.								
Agricultural ...	10,54,000	...	10,54,000	...	2,31,000	3,15,000	...	16,00,000
Grand Total...	16,46,000	85,000	17,31,000	3,07,000	5,12,000	3,25,000	90,900	29,65,900

Add outlay from Local Funds and Contributions—

Original Works—	Rs.	
Civil Buildings	50,000	
Communications	58,250	
	1,08,250	
Establishment	6,000	
		1,14,250
		30,80,150

6. From the remark made against Item No. 33 of the Budget-Estimate, it would appear that expenditure has been incurred in the collection of materials in the District Jail at Pertabgurh. The work is said to have been sanctioned by the Home Department, but that is no authority for incurring expenditure.

7. The grants for the following works are allowed to stand only on the condition that estimates are sanctioned for them by competent authority before outlay is incurred :—

	Rs.
Item No. 1.—Renewing roofs of Military Buildings, Lucknow ...	25,000
„ „ 2.—Houses for servants, Royal Artillery, „ ...	5,500
„ „ 3.—Cook-houses, Lucknow	14,500
„ „ 12.—Additions to distilleries, Oudh	10,000
Items 32 & 33.—District Jails at Roy-Bareilly and Pertabgurh ...	54,000
Item No. 35.—Airing-yards to solitary cells, Fyzabad	5,000
„ „ 52.—Arching Charbagh Bridge, Lucknow	4,500

8. The provision for Repairs, Communications, from Imperial Funds is in excess of the grant for the current year by Rs. 20,000. From what was recently said on this subject, the Governor General in Council was not prepared for this increase. It may however stand, pending issue of further orders.

9. In the estimate for Establishments, in which the distinction between Ordinary and Extraordinary has not been so clearly preserved as it might have been, provision has been made for consolidated rates of pay which is allowed to stand, but information should be furnished as to the sanction under which the petty establishment is entertained, and the necessity for keeping it at its present strength.

PUBLIC WORKS REVENUE.

10. The estimate submitted amounts to Rs. 5,950. No explanation has been given for the large falling-off from the receipts of previous years, and in the absence of such, the estimate is increased to Rs. 13,000, but a report on the subject is requested.

	Rs.
1864-65	13,660
1865-66	11,448
1866-67 (11 months) ...	7,272
1867-68	18,414
1868-69	14,892

Fort William ;
February 15, 1870.

R. STRACHEY, *Colonel, R. E.,*
Offg. Secy. to the Govt. of India.

HYDERABAD BUDGET ORDERS, 1870-71.

IMPERIAL BUDGET-ESTIMATE.

The amount assigned to Hyderabad for expenditure on Imperial Public Works, Ordinary, during 1870-71 is 3½ lakhs, which the Local Administration propose to appropriate as follows :—

Budget Heads.	1870-71.	1869-70.
	Rs.	Rs.
Military	2,64,000	5,50,000
Agricultural	.....	.....
Other Services—		
Civil Buildings	17,000	37,000
Communications	.....	20,900
Miscellaneous Public Improvement	...	.. ...
Establishment	61,700	78,100
Tools and Plant	7,300	14,000
Total Other Services...	86,000	1,50,000
Total Grant ...	3,50,000	7,00,000

Buildings and Roads.

2. *Item No.* 6.—*Water-supply, 1st Regiment, Trimulgherry. Grant Rs.* 12,000.—The estimate for this work has been sanctioned by the Government of India only to the extent of completing the well. Any excess of the allotment beyond what is necessary for this purpose should be transferred to Item No. 9, Cavalry Barracks, which are much wanted, and should be pushed on to completion as rapidly as possible. The grant for these barracks will be supplemented by Rs. 7,000, *vide* para. 14.

	Rs.
Reduction of Establishment	6,700
„ Tools and Plan t.. ...	300
Total ...	7,000

3. *Item No.* 15.—*Telegraph Office at Chudderghât. Grant Rs.* 7,000.—The estimate for this work has not been sanctioned, but under the explanation contained in para. 2 of the letter accompanying the Budget-Estimate, the amount may stand.

Establishment.

4. *Military pay of Superintending Engineer at Rs.* 434 *per mensem* = *Rs.* 5,208.—From this must be deducted Rs. 1,680, being the net Military pay of the Superintending Engineer at Rs. 140 per mensem, drawn in the Military Department. The estimate has been corrected accordingly.

5. *Travelling and personal allowances, Rs.* 2,500.—It is not understood what personal allowances are alluded to, but as the Superintending Engineer's staff salary has been under-estimated by Rs. 100 per month, or Rs. 1,200 for the year, the deficiency may be supplied from this item, which is passed on this understanding.

6. *Office expenses and contingencies, Rs.* 4,020.—This amount is allowed to stand, subject to explanation as to the necessity for the provision of so large a sum under this head, the amount being considerably in excess of what is found to be sufficient for other similar Offices.

7. *Probable increase due to consolidation of salaries, Rs.* 1,800.—This item is inadmissible, being unauthorized, and is accordingly struck out. The amount with other reductions under this head will be added to Part II, Item 9, as shown further on, *vide* para. 14.

8. *Reduction on account of Assigned Districts, Rs.* 18,546.—This item is taken at ⅓rds of the total estimated charges under "Direction," instead of ⅔rds, which is the proper proportion, the grants for the Imperial and Assigned Districts, excluding Railways, being 3½ and 7 lakhs, respectively.

9. With these corrections the proportion of the Establishment charges debitable to the Imperial revenues under "Direction" will stand in even numbers at Rs. 9,000, as follows :—

	Rs.	Rs.
Total, as per original estimate		30,916
Deduct net Military pay of Superintending Engineer...	1,680	...
„ increase for consolidation of salaries	1,800	
		3,480
		27,436
Deduct ⅔rds chargeable to the Assigned Districts ...		18,291
One-third chargeable to Imperial revenue		9,145
Which is passed in even numbers for		9,000

Construction.

10. *Contingencies, Rs.* 1,400.—This seems high for one Division, and should, if possible, be reduced.

11. *Probable increase due to consolidation of salaries, Rs.* 1,800.—This is struck out for the reason already stated in the case of the similar item under "Direction." The total amount under *Construction* will thus be reduced to Rs. 42,000.

Accounts.

12. The total charges under this head amount to Rs. 21,200, thus divided :—

	Rs.
Imperial	5,300
Assigned Districts	5,300
Railways	10,600
	21,200

But the proper proportion according to the total grants under each of these heads should be as follows :—

	Rs.
Imperial	4,000
Assigned Districts	8,000
Railways	9,200
	21,200

13. *Contingencies, Rs.* 2,028.—The necessity for this apparently high charge should be explained.

14. The total amount chargeable to the ordinary Imperial grant on account of Establishments, as above modified, will be Rs. 55,000 in even numbers as follows :—

	Rs.
Direction	9,000
Construction	42,000
Accounts	4,000
Total ...	55,000

The difference Rs. 6,700 between this amount and that (Rs. 61,700) provided for in the original estimate, as also Rs. 300 from the grant for Tools and Plant will be added to Item No. 9, Part II, Cavalry Barracks, making the grant for this work Rs. 53,000, and the total grant for Original Works, Military, Rs. 2,22,000.

SUMMARY.

15. The following is an abstract of the Imperial Public Works Budget-Estimate of the Hyderabad Administration as now passed :—

Budget Heads.	Original Works.			Repairs.	Establishment.	Tools and Plant.	Total.
	Major.	Minor.	Total.				
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Military	2,00,000	22,000	2,22,000	49,000	...	...	2,71,000
Other Services :—							
Civil Buildings	9,000	3,000	12,000	5,000	...	...	17,000
Establishment	...	...	...	...	55,000	...	55,000
Tools and Plant	...	...	...	...	...	7,000	7,000
Total Other Services ...	9,000	3,000	12,000	5,000	55,000	7,000	79,000
Grand Total ...	2,09,000	25,000	2,34,000	54,000	55,000	7,000	3,50,000

PUBLIC WORKS REVENUE.

	Rs.
Tolls, dues, &c.	400
Rents of buildings	25,000
Sales of produce	200
Sales of buildings	100
Total ...	25,700

16. The anticipated receipts of 1870-71 amount to Rs. 25,700 in even numbers as per margin, against Rs. 20,700 for the current year. This estimate is accepted.

BUDGET-ESTIMATE OF THE ASSIGNED DISTRICTS (BERARS).

17. The amount allowed for expenditure on Ordinary Public Works in the Assigned Districts for 1870-71 is 7 lakhs, which is distributed in the Budget-Estimate as follows :—

Budget Heads.	1870-71.	1869-70.
	Rs.	Rs.
Military	56,700	35,000
Agricultural	9,210	10,000
Other Services—		
Civil Buildings	2,05,890	3,05,000
Communications	3,00,800	2,83,000
Miscellaneous Public Improvement	.....	4,000
Establishment	1,19,400	1,03,000
Tools and Plant	8,000	10,000
Total Other Services	6,34,090	7,05,000
Grand Total ...	7,00,000	7,50,000

BUILDINGS AND ROADS.

18. *Item No.* 8.—*Water-supply for the Cantonment at Aurungabad, Rs.* 6,000.—The estimate for this project has not yet been put in hand, but as it appears from para. 19 of the letter forwarding the Budget-Estimate that the work is very urgently required, the amount may stand on condition that the estimate will be prepared without any unnecessary delay.

19. *Item No.* 48.—*Yeotmahal and Damungaon Road, Rs.* 10,000.—The estimate for this work is not yet ready, and as there is apparently plenty of work already on hand from the grant available, the item is struck out. These orders leave the amount available for any sanctioned work under "Communications" to which the Resident may think proper to apply it.

20. The other works included in this part of the Budget, for which estimates have not yet been duly sanctioned, are allowed to stand under the explanation given in para. 2 of the covering letter, but it is particularly requested that no unavoidable delay may be permitted to occur in the preparation and submission of the estimates for these works.

ESTABLISHMENT.

DIRECTION.

21. There is an error of Rs. 1,000 in this part of the Budget. The amount entered in the abstract at page 16 under "Direction" is Rs. 22,300 instead of Rs. 21,300 as per page 14. The difference, Rs. 1,000, which has been caused apparently by the amount chargeable to Local funds having been included twice, will be corrected in the re-arrangement of the establishment charges as per these orders.

22. The amount chargeable to the Assigned Districts on account of "Direction" will thus stand at Rs. 20,000, as per margin, the total estimated charges for Establishment to be defrayed from the revenues of these Districts being Rs. 1,21,000 as shown below :—

	Rs.
Two-thirds of total charge for "Direction," as per para. 8, say	18,300
Other items, excluding Rs. 1,000 chargeable to Local funds	1,700
Total ...	20,000

	Rs.
Direction	20,000
Construction	93,000
Accounts, *vide para.* 12	8,000
Total ...	1,21,000

23. The difference between this amount and that entered in the original Estimate, is provided for as follows :—

	Increase to reduce amounts to even numbers.	Decrease to reduce amounts to even numbers.
	Rs.	Rs.
Military	300	...
Agricultural	...	210
Civil Buildings	110	...
Communications	...	800
Establishment	1,600	...
Tools and Plant	...	1,000
Total	2,010	2,010

SUMMARY.

24. The distribution of the Ordinary Public Works grant for the Assigned Districts, as modified by the foregoing orders, will be as follows:—

BUDGET HEADS.	ORIGINAL WORKS.			REPAIRS.	ESTABLISHMENT.	TOOLS AND PLANT.	TOTAL.
	Major.	Minor.	Total.				
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
MILITARY	36,000	6,000	42,000	15,000	...	...	57,000
AGRICULTURAL	...	9,000	9,000	...	...	...	9,000
OTHER SERVICES:—							
Civil Buildings ...	1,76,000	20,000	1,96,000	10,000	...	...	2,06,000
Communications ...	2,34,000	24,000	2,58,000	42,000	...	...	3,00,000
Establishment ...	...	...	...	...	1,21,000	...	1,21,000
Tools and Plant ...	...	...	...	...	...	7,000	7,000
Total Other Services ...	4,10,000	44,000	4,54,000	52,000	1,21,000	7,000	6,34,000
GRAND TOTAL ...	4,46,000	59,000	5,05,000	67,000	1,21,000	7,000	7,00,000

OUTLAY FROM LOCAL FUNDS.

25. In addition to the above, the following expenditure will be incurred from Local Funds by Public Works Officers :—

	Rs.
Original Works.	
Civil Buildings	5,000
Communications	5,000
Miscellaneous Public Improvements	14,100
Establishment	1,000
Total ...	25,100

HYDERABAD RAILWAY.

26. The amount passed under this head, as per separate orders, is Rs. 5 lakhs, as follows :—

	Rs.
Establishment	96,000
Construction of Line...	4,04,000
	5,00,000

KHAMGAON AND OOMRAWUTTEE LINES.

27. The amount passed under this head for expenditure during 1870-71, *vide* separate Orders, is Rs. 2¾ lakhs, as follows :—

	Rs.
Capital.—Oomrawuttee Branch Railway	2,50,000
Revenue.—Khamgaon Branch Railway	25,000
	2,75,000

PUBLIC WORKS REVENUE.

28. The probable receipts under this head for 1870-71 will be Rs. 2,000 as per margin, against Rs. 1,600 for the current year. This is exclusive of Rs. 40,000 from Traffic Earnings of the Khamgaon Branch Railway.

	Rs.
Tolls, dues, &c.	450
Rents of buildings	850
Sales of produce...	100
Sales of buildings and tools and plant ...	600
Total ...	2,000

FORT WILLIAM,
February 24, 1870.

R. STRACHEY, *Colonel, R. E.,*
Offg. Secy. to the Govt. of India.

RAJPOOTANA BUDGET ORDERS, 1870-71.

The Rajpootana Budget-Estimate for 1870-71 provides for an expenditure of Rs. 9,20,000 from Imperial funds, being the grant originally assigned for the purpose. But as the allotment has since been reduced* to Rs. 8,50,000, the Budget-Estimate has to be altered accordingly. In this view the following items are disallowed :—

* Public Works Department Circular No. 104 of 1869.

ORIGINAL WORKS.

MILITARY.

Item 5. *Hospital at Tarraghur.*—By orders issued in Public Works Department letter No. 642 M, dated 8th July 1869, this work will not be required ... ... Rs. 10,000

CIVIL BUILDINGS.

Item 10. *College at Ajmere.*—The accounts show an expenditure of Rs. 24,051 to have been incurred on this work to end of 1868-69, against an estimate of Rs. 35,934 sanctioned by the Government, North-Western Provinces. In the Rajpootana Progress Report for 1868-69, it is reported that the foundation, plinth, and about one-fourth of the superstructure of the work, has been completed. No grant appears to have been sanctioned for the work for the current year, and until information is furnished of the total probable cost of the building, for which a revised estimate is said to be awaited, the provision for next year is disallowed 10,000

AGRICULTURAL.

Item 14. *Balad Reservoir and Canal.*—No estimate. If the project is matured during the year, and approved of by the Government of India, a re-appropriation of Budget-credits may be proposed for it 50,000

Total reductions ... 70,000

2. These reductions leave the Rajpootana grant for 1870-71 as follows :—

Heads of Service.	Original Works.			Repairs.	Establishment.	Tools and Plant.	Total.
	Major.	Minor.	Total.				
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Military	3,30,000	30,000	3,60,000	30,000	...	...	3,90,000
Agricultural, Ordinary	...	...	...	1,00,000	...	...	1,00,000
Other Services—							
Civil Buildings ...	20,000	5,000	25,000	5,000	...	...	30,000
Communications ...	1,65,000	15,000	1,80,000	20,000	...	...	2,00,000
Establishment ...	...	...	...	...	1,25,000	...	1,25,000
Tools and Plant ..	...	...	...	...	...	5,000	5,000
	1,85,000	20,000	2,05,000	25,000	1,25,000	5,000	3,60,000
Grand Total ...	5,15,000	50,000	5,65,000	1,55,000	1,25,000	5,000	8,50,000

	Rs.	
Add grant from Foreign Funds—		
Original Works, Communications	2,00,900	
Establishment	32,900	
		2,32,900
Add grant from Local Funds—		
Original Works, Communications	5,000	
Repairs, for which details have to be given	5,000	
Establishment	1,000	
		11,000
Grand Total ...		10,93,900

3. Of the works entered in the Budget-Estimate, the following call for remark :—

I. *Item* 3.—*Stables for Royal Artillery, Nusseerabad. No estimate. Grant for* 1870-71, *Rs.* 3,000, *and computed outlay to end of* 1869-70, *Rs.* 5,000.—This work appears to have been commenced without sanctioned estimate in violation of rule.

II. *Item* 12.—*Completion of Police Lines in Ajmere District. Amount of estimate, Rs.* 13,894. *Grant for* 1870-71, *Rs.* 10,000.—Allowed only on the understanding that the scheme has been approved of by the Government of India in the Home Department, *vide* Public Works Department Resolution No. 711A, dated 25th August 1869.

III. *Item* 15.—*Deolee link of road from Nusseerabad to Deolee.*—The amount of estimate for this road is entered at Rs. 1,88,169, but the sum sanctioned is only Rs. 1,69,408. The provision of Rs. 25,000 for next year is allowed, on the understanding that no more than the authorised cost shall fall on Imperial revenue, *vide* Public Works Department letter No. 729 B.—C., dated 8th December 1869, and letter from Agent, No. 3538 S, dated 27th December 1869.

Amount sanctioned in Public Works Department letter No. 598 B—C, dated 24th November 1869	Rs. 1,14,885
Ditto No. 729 B—C, dated 8th December 1869	54,523
	1,69,408

IV. *Items* 21 *and* 22.—*Srinuggur and Munglewas links of Ahmedabad and Agra Road.*—The amount of estimate is entered at Rs. 97,947 and Rs. 73,666, but the sum sanctioned is only Rs. 83,710* and Rs. 60,375,† respectively. The total expenditure on the work should be limited accordingly.

* Public Works Department letter No. 745 B—C, dated 16th December 1869.

† Public Works Department letter No. 55C, dated 27th January 1869 ... ... Rs. 42,080
Ditto ditto No. 340 C, dated 9th June 1869 18,295
60,375

V. *Items* 20 *and* 23.—*Marwar Sections of the Ahmedabad and Agra Road.*—No estimates have been submitted for these sections of road; although it is computed that on the first of them an expenditure of Rs. 95,000 will have been incurred up to end of 1869-70. The work appears to have been commenced as a famine relief work. Information should be furnished as to when the estimates will be rendered, meanwhile, expenditure on the second section is prohibited, while further outlay on the first section should be stopped, unless the work is required for employment of the distressed, in which case the matter should be reported for the orders of the Government of India.

VI. *Item* 24.—*Pokur Road, Rs.* 5,000.—The precise Local funds from which this grant is to be made should be stated. The funds required for the current year, were proposed to be taken‡ from the Imperial Budget grant, and if Local funds are available to meet the charge, the outlay on it during 1869-70 should apparently be met from them.

‡ *Vide* letter from Agent, No. 3297 S, dated 3rd December 1869.

VII. *Item* 25.—*Minor Works, Communications, Rs.* 15,000.—This provision appears to be excessive, and a portion of it should be applied to augment the grant for Major Works.

4. The estimate of Establishment amounts to Rs. 1,58,900, which it is proposed to charge as follows :—

	Rs.
Imperial funds	1,25,000
Local „	1,000
Foreign States	32,900
	1,58,900

The proposal to charge Foreign States with a proportion of the cost of establishment engaged on works, three-fourths of the cost of which is met by those States, appears to be proper¶, but information should be furnished of the precise Local Fund to which it is proposed to debit the sum of Rs. 1,000, and the reason for so doing. This sum, as also the sum of Rs. 32,900 debitable to Foreign States, should have been entered in the memorandum at foot of Part I of the Budget-Estimate under head Establishment.

¶ *Vide* Foreign Department Resolution No. 681, dated 16th May 1868.

PUBLIC WORKS REVENUE.

5. The estimate for 1870-71 amounts to Rs. 10,000.

Fort William;
Dated January 31, 1870.

R. STRACHEY, *Colonel, R. E.,*
Offg. Secy. to the Govt. of India.

CENTRAL INDIA BUDGET ORDERS, 1870-71.

The Central India Public Works Budget-Estimate for 1870-71 has been prepared for the grant of Rs. 20 lakhs assigned in Public Works Department Circular No. 104 of 1869, which has been distributed as follows :—

	Original Works.			Repairs.	Establishment.	Tools and Plant.	Total.
	Major.	Minor.	Total.				
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Military	7,36,000	64,000	8,00,000	1,40,000	...	...	9,40,000
Other Services—							
Civil Buildings	29,000	4,000	33,000	17,000	...	...	50,000
Communications	2,86,000	19,500	3,05,500	2,80,500	...	...	5,86,000
Establishment	...	...	...	...	3,99,000	...	3,99,000
Tools and Plant	...	...	...	...	...	25,000	25,000
	3,15,000	23,500	3,38,500	2,97,500	3,99,000	25,000	10,60,000
Total, Imperial ...	10,51,000	87,500	11,38,500	4,37,500	3,99,000	25,000	20,00,000
Add outlay from Local Funds and Contributions—							
Original Works—						Rs.	
Civil Buildings						20,000	
Communications						1,65,000	
						1,85,000	
Repairs—							
Communications						31,500	
							2,16,500
Grand Total							22,16,500

2. This distribution of the allotment is approved, but the provision of Rs. 30,000 from contributions from Scindiah and Oojein for the road from Dewas to Oojein (Item No. 55) is disallowed for want of a sanctioned estimate for the work. The Government of India cannot admit the propriety of passing expenditure for which no estimate has been sanctioned from the funds of Foreign States any more than British Funds. The amount should, if possible, be applied to the construction of some other road carried out from the funds of these States, or a further representation may be made when the estimate is completed.

3. Items Nos. 75 and 76 being for works not yet begun are also struck out, as with so long a list of works in progress it is not expedient to add to the number. The appropriations may be transferred to some other Item.

4. It is remarked that the grant has been distributed over a great number of works. Concentration of expenditure over fewer works would have been, it is thought, a preferable disposition of the sum available, and the point may advantageously be borne in mind.

5. No expenditure should be incurred on the Native Cavalry Hospital at Augur (Item No. 12, Rs. 15,000), pending receipt of orders from the Government of India on the general question, it being very likely that the standard plan of hospital for Native troops will be modified.

6. The provision made for repairs to staging bungalows appears to be high; also that of Rs. 8,000 for construction of dák bungalow at Indore (Item No. 83). The latter item cannot be now allowed, the work not having been put in hand, and the sum provided for it may be transferred to some other work.

	Rs.
Southern Division, Agra and Bombay Road ...	2,000
Northern „ „ „ „ ...	4,000
Indore Agency ...	1,500
Bhopal „ ...	500
Nowgong Division ...	500
Western Malwa Agency ...	500
Bundlekhund ...	500
Total ...	9,500

7. The reduction so promptly made in the charges for Establishment from Rs. 5,05,000 in 1869-70, to Rs. 3,99,000, is very satisfactory, but this sum still forms more than 18 per cent. on the total grant.

PUBLIC WORKS REVENUE.

8. The estimate submitted amounts to Rs. 30,000, while the receipts of 1867-68 were Rs. 56,012, and of 1868-69 Rs. 42,528. So considerable a falling off should be explained, meanwhile the estimate for next year will be taken at Rs. 40,000.

Fort William; *February* 15, 1870.

R. STRACHEY, *Colonel, R. E.,*
Offg. Secretary to the Govt. of India.

COORG BUDGET ORDERS, 1870-71.

The Coorg revised Public Works Budget-Estimate for 1870-71 has been prepared for a grant of Rupees one lakh, which has been distributed as follows :—

Heads of Service.	1870-71.					Reduced Grant, 1869-70.
	Original Works.			Repairs.	Total.	
	Major.	Minor.	Total.			
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Civil Buildings	10,000	3,000	13,000	2,000	15,000	33,500
Agricultural	...	...	...	5,000	5,000	...
Communications	8,800	1,000	9,800	44,200	54,000	55,200
Miscellaneous Public Improvement	...	1,300	1,300	...	1,300	...
	18,800	5,300	24,100	51,200	75,300	88,700
Establishment					23,700	35,300
Tools and Plant					1,000	1,000
Grand Total					1,00,000	1,25,000

2. A considerable reduction has been made in Establishment, but the charge still forms 23·7 per cent. of the total allotment, and might apparently be further reduced to Rs. 21,000 by dispensing with the services of the Storekeeper, Cashier, Draughtsman and two Clerks. The particular attention of the Chief Commissioner is drawn to this matter, and it is requested that the necessary tabular statement of the reduced establishment as finally determined on may be submitted for sanction.

3. The provision for Tools and Plant includes Rs. 100 for Office furniture. The expenditure on this account from 1865-66 to 1868-69 has amounted to over Rs. 2,000, and it appears time that the outlay should cease. The Chief Commissioner may usefully look into this point.

PUBLIC WORKS REVENUE.

4. The estimate is for Rs. 1,300.

Fort William,
February 15, 1870.

R. STRACHEY, *Colonel, R. E.,*
Offg. Secretary to the Govt. of India.

MYSORE BUDGET ORDERS, 1870-71.

The Mysore Public Works Budget-Estimate for 1870-71 has been prepared for the grant of Rs. 15 lakhs from Ordinary revenue sanctioned in Financial Department Resolution No. 531, dated 22nd January 1870. In addition to this amount, an appropriation of Rs. 3 lakhs has been made from the deposit surplus for expenditure on Agricultural Works, the total assignment for which head of service amounts to Rs. 5,15,800, distributed as follows :—

	Rs.
Original Works	2,65,800
Repairs	2,50,000
Total ...	5,15,800

2. It would thus appear that, of the appropriation from the deposit surplus, Rs. 34,200 is applied to the execution of repairs. But this fund can only be considered to be available for the construction of works of a kind which in British territory would be carried out by loan. Moreover, many of the works entered in the Budget-Estimate under the head Original Works, Agricultural, are such as should properly be carried out from Ordinary revenue. The appropriation from that fund is therefore limited to Rs. 1,25,000 as follows :—

	Rs.
Item No. 16.—Sriramadevara Anicut	10,000
„ 17.— „ Channels	20,000
„ 18.—Madapoor Anicut Channels ...	10,000
„ 20.—Marikanive Reservoir with Channels	70,000
„ 21.—Buildings for „	5,000
„ 22.—Kumlar Katte	10,000
Total ...	1,25,000

No expenditure should be incurred on the last five items until the estimates for them have been sanctioned by competent authority. If it can be shown that other Agricultural Works entered in the Budget may be constructed from the deposit surplus fund, the Governor General in Council will be quite prepared to make the necessary appropriation for the purpose, as well as for the charges on account of Establishment and Tools and Plant arising directly out of these works. Meanwhile, the outlay under these two heads must be provided for from the grant from Ordinary revenue.

3. To make up the difference of Rs. 1¾ lakhs between the appropriation in the Budget-Estimate from the deposit surplus fund and the amount actually allowed above, the following reductions are made :—

	Rs.
ORIGINAL WORKS.	
CIVIL BUILDINGS.	
Item 8.—Improvements to Cutchery at Shimoga ...	5,000
AGRICULTURAL.	
Grant for Minor Works reduced from Rs. 20,000 to Rs. 14,200	5,800
COMMUNICATIONS.	
Items 59 and 60.—Opening out new Hyderghur ghât and approach to ditto	25,000
Item 61.—Kalurghât to Kulur Katte	8,000
Item 63.—Aldur Basavankote Road	5,000
Items 64 and 65.—Travellers' bungalows and Mussafir Khanas in the Nagar and Ashtagram Divisions	20,000
Appropriation for Minor Works, reduced from Rs. 26,000 to Rs. 15,000	11,000
MISCELLANEOUS PUBLIC IMPROVEMENT.	
Items 66 and 67.—Drainage of town of Hassan and Shimoga, which should properly be met from Municipal and Local Funds	10,000
Total Original Works ...	89,800
REPAIRS.	
Repairs—Agricultural, reduced from Rs. 2,50,000 to Rs. 2,35,000 ; the average expenditure of the five years ending with 1868-69 has been only Rs. 1¾ lakhs per annum	15,000
Repairs—Communications, reduced from Rs. 3,40,000 to Rs. 3,20,000, the average expenditure of the five years ending with 1868-69 having been Rs. 3 lakhs per annum	20,000
Total Repairs ...	35,000
ESTABLISHMENT.	
Reduced from Rs. 5,20,200 to Rs. 4,70,000 ...	50,200
Total	1,75,000

4. The estimate for Establishments is extraordinarily high, being nearly one-third of the total expenditure, a rate unknown in any other part of India. It has to be observed that the scales of Establishment sanctioned are, with certain

exceptions, those sanctioned in each case at the express recommendation of the Chief Commissioner, and therefore the protest made in the forwarding letter as to their large total cost is not understood, especially as provision has been made for ten more temporary Sub-Overseers in addition to the sanctioned scale, and three Clerks for the Chief Engineer's Office, which is already organized on an expensive scale. These items, with the items noted in the margin, are disallowed in part of the reduction of Rs. 50,200 made in the estimate.

	Rs.
Three Clerks in Chief Engineer's Office	840
Sub-divisional allowances for 24 Upper Subordinates, corresponding with the number of Upper Subordinates sanctioned. Explanation should be furnished of the necessity for this ; meanwhile, provision for 8 Sub-divisions is disallowed	2,880
Temporary Lower Subordinates	3,000
Difference between pay of 3rd and 4th grade Accountant provided for Executive Engineers' Offices, which has not been sanctioned	1,340
Excess in item salary of Controller	2,800
2nd grade Accountant in Controller's Office ...	3,120
Excess charge of Rs. 100 per mensem for Clerks of Controller's Office	1,200
	15,180

5. The present organization of the Establishments in Mysore calls evidently for reform, especially the arrangement which seems to have been adopted for detaching European Subordinates all over the Province. In para. 16 of Public Works Department letter No. 143 E—I, dated 1st August 1868, the Chief Commissioner was invited to offer suggestions for the education of Natives of Mysore to fit them for Engineering duties, and the Government of India would be glad to receive these as early as possible.

6. Further, the expansion of Divisions without any increase of funds appears injudicious. Three new Irrigation Divisions have been created, but the eight old ones have been continued. It might surely be practicable for the Irrigation Officers to carry out the petty road works in their neighbourhood ; double establishments all over the Province need hardly be necessary. It will be desirable that this matter should receive the prompt attention of the Local Administration. Meanwhile no vacancies occurring in any branch of the Department there will be filled up for the present by the Government of India unless on the special application of the Chief Commissioner, and pending definite reductions, the Establishment charges for the year are reduced by ½ a lakh. This still leaves the charge at the exceptionally high figure of 26 per cent. on the grant, and the Governor General in Council hopes that further considerable reductions may be found possible by the Local Administration.

7. The appropriation of Rs. 17,000 (Item 46) for constructing a bridge at Sakkalespura is allowed to stand, on the condition that the revised estimate for the work is submitted to the Government of India before the commencement of 1870-71.

8. The following is an abstract of the Mysore Public Works Budget-Estimate for 1870-71 as modified by the foregoing orders :—

Heads of Service.	Original Works.			Repairs.	Establishment.	Tools and Plant.	Total.
	Major.	Minor.	Total.				
ORDINARY.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Civil Buildings	49,336	12,664	62,000	5,000	...	...	67,000
Agricultural	1,20,800	14,200	1,35,000	2,35,000	...	...	3,70,000
Communications	2,22,000	15,000	2,37,000	3,20,000	...	...	5,57,000
Miscellaneous Public Improvement	...	3,000	3,000	3,000		...	6,000
Establishment	...	...	...	...	4,70,000	...	4,70,000
Tools and Plant	...	...	...	..	...	30,000	30,000
TOTAL ...	3,92,136	44,864	4,37,000	5,63,000	4,70,000	30,000	15,00,000
SURPLUS DEPOSIT FUND.							
Agricultural	1,25,000	...	1,25,000	...	...	...	1,25,000
GRAND TOTAL ...	5,17,136	44,864	5,62,000	5,63,000	4,70,000	30,000	16,25,000

9. In addition to the above, a sum of Rs. 43,000 is entered for expenditure on Military Works and Repairs as detailed on the margin. It is explained that all works, whether Original or Repairs, for hutting the Mysore Force, or constructing stables, were formerly provided for out of yearly savings, but that it has been considered more regular to provide for the amount in the Public Works Budget-Estimate, and to credit the savings to Government. But the provision has been made in excess of the grant, and the question as to whether it can be passed will be referred to the Foreign and Financial Departments for disposal.

	Rs.
Stables and huts for Regiment of Mysore Horse, Shimoga	20,000
Huts for Regiment of Native Infantry, Shimoga	12,500
Repairs to huts for Regiment of Native Infantry, Shimoga	10,500
	43,000

PUBLIC WORKS REVENUE.

10. The estimate amounts to Rs. 13,900.

FORT WILLIAM,
February 25, 1870.

R. STRACHEY, *Colonel, R. E.,*
Offg. Secy. to the Govt. of India.

PORT BLAIR BUDGET ORDERS, 1870-71.

This Budget-Estimate has been prepared for a total expenditure of Rs. 1,20,552, instead of the grant named, Rs. 1,25,000, and contains some other mistakes. The grant from Local Funds has been included in the body of Part I of the estimate instead of being entered only in the memorandum at foot. The grants for heads of service as well as for the total are not for even numbers, while the numbers of the items in Part II are not continuous.

2. The appropriations are modified as follows :—

ORIGINAL WORKS.

MILITARY.

	Rs.
Budget provision	42,735
Deduct Item No. 7, Skittle-alley for European Infantry, Ross Island, which is not a necessity	2,600
	40,135
Add unappropriated grant available to meet expenditure on other works should they be required during the year ...	6,365
Total Military ...	46,500

CIVIL BUILDINGS.

Budget provision	44,727
Deduct Items Nos. 22 and 23 for improvements to Commissariat Office and tramway for Commissariat, Ross Island, for which no estimates have been sanctioned, and which are therefore disallowed. If estimates are approved hereafter, a re-appropriation of Budget credits can be proposed for the same	6,000
	38,727
Add unappropriated grant available to meet expenditure on other works that may be sanctioned during the year ...	1,273
Total Civil Buildings ...	40,000

ESTABLISHMENT.

Budget provision	21,590
Add charge for Settlement Overseers who, it is proposed, should take charge of Public Works within their range under the Executive Engineer, and whose pay should therefore be debited to the Public Works grant, a corresponding reduction having been made in the Budget-Estimate of the Civil Department	3,600
Add for difference of pay between Accountant, 2nd grade, appointed to Port Blair, and Accountant, 4th grade, for which provision has been made in the Budget-Estimate	1,560
Add to make the grant an even one	250
Total Establishment ...	27,000

3. Under these orders, the Public Works Budget grant for 1870-71 for Port Blair will be distributed as follows:—

	Original Works.			Repairs.	Establishment.	Tools and Plant.	Total.
	Major.	Minor.	Total.				
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Military	43,000	3,500	46,500	3,500	...	...	50,000
Other Services—							
Civil Buildings	36,000	4,000	40,000	6,000	...	...	46,000
Establishment	...	...	...	...	27,000	...	27,000
Tools and Plant	...	...	...	...	...	2,000	2,000
	36,000	4,000	40,000	6,000	27,000	2,000	75,000
	79,000	7,500	86,500	9,500	27,000	2,000	1,25,000
Add grant from Local Funds—							
Original Works—							
Communications						1,200	
Miscellaneous Public Improvement						9,900	
						11,100	
Repairs—							
Miscellaneous Public Improvement						1,000	
							12,100
							1,37,100

4. It should be explained what Local Funds are referred to.

5. Of the works entered in the Budget-Estimate, the estimate for quarters for Settlement Officers (Item No. 11) does not appear to have been sanctioned as yet. This, as also the revised estimate for stone barracks on Viper Island (Item No. 69), should be submitted for the orders of the Government of India as soon as possible.

Fort William;
February 16, 1870.

R. STRACHEY, *Colonel, R. E.*,
Offg. Secretary to the Govt. of India.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

RAILWAY BUDGET ORDERS, 1870-71.

MADRAS RAILWAY BUDGET ORDERS.

Nos. 32—34 A—R, dated 31st January, 1870.

RESOLUTION,—By the Government of India, P. W. Dept.

Read—

Letter No. 3498, dated 2nd November 1869, from Secretary to Government of Madras, Public Works Department.

The estimate of State expenditure for 1870-71, amounting to Rs. 2,03,675, is increased to Rs. 2,04,700 on account of the additional establishment sanctioned in Financial Department Resolution No. 2282, dated 3rd November 1869; this estimate includes a sum of Rs. 1,08,500 for land for the Neilgherry Branch of the South-West Line, Madras Railway. As regards the outlay on this Branch, both from State funds and also from guaranteed Capital, the necessity for obtaining the sanction of the Government of India to complete estimates before work is commenced should not be overlooked, *vide* Public Works Department letter No. 1277 R, dated 2nd September 1869.

ESTIMATE OF ADVANCES ON CAPITAL ACCOUNT.

REGULAR-ESTIMATE, 1869-70.

2. The probable net advances on Construction account during 1869-70 are entered as amounting to Rs. 24,43,000, but it is considered that this may be reduced to Rs. 23 lakhs, as per margin, the net advances for the first six months of the year having been only Rs. 12 lakhs.

Railways.	Regular-Estimate as submitted.	Net advances for 1st-half of 1869-70.	Regular-Estimate as altered.
	Rs.	Rs.	Rs.
Madras { South-West Line ...	8,80,000	1,23,627	9,30,000
{ North-West Line ...	12,25,000	8,12,861	12,00,000
Great Southern of India ...	2,88,000	2,14,140	2,50,000
Total ...	24,43,000	12,09,298	23,00,000

BUDGET-ESTIMATE, 1870-71.

3. For the Madras Railway, South-West Line, the estimate of net advances amounts to Rs. 15,07,000. This is reduced to Rs. 9 lakhs as follows:—

	Rs.
1.—Works on Neilgherry Branch reduced from Rs. 9,09,915 to	7,00,000
2.—Provision for other works passed in full	5,00,000
3.—Provision of Rs. 6,68,000 for stores considered excessive and reduced to there being a large quantity of stores in hand which should be consumed as far as possible before additional stores are purchased.	5,00,000
4.—Provision of Rs. 3,55,000 for Establishment is considered large. The average capital expenditure on Establishment for the last six months known is under Rs. 9,000 per month. For 1870-71 a sum of should suffice.	1,50,000
Total ...	18,50,000
Less refunds	9,50,000
Net amount passed	9,00,000

4. It is noticed that the Budget-Estimate shows outlay to have been incurred on certain works which have not as yet been sanctioned. Explanation is requested on this point, and the Accountant General, Public Works Department, should be called upon to report whether the irregular outlay incurred was duly brought to notice.

5. The estimate for the North-West Line, Madras Railway, is passed for an even sum of Rs. 20 lakhs as per margin.

	Rs.
Gross advances	23,50,000
Less refunds	3,50,000
	20,00,000

6. The provision of Rs. 92,308 and Rs. 59,098 made in the estimate for minor works on portions of the South-Western and North-Western lines respectively open more than two years appears excessive, and it is hoped that the Government of Madras may be able to effect a reduction on this head.

7. The estimate for the Great Southern of India Railway is passed for:—

	Rs.
Gross advances	2,35,000
Less refunds	1,85,000
Net advances	50,000

ESTIMATE OF TRAFFIC EARNINGS.

REGULAR-ESTIMATE, 1869-70.

8. This estimate appears to be reliable on the whole, excepting that the working expenses of the South-West Line, and the receipts from the North-West Line, appear to have been somewhat over-estimated, while it is thought that perhaps sufficient provision may not have been made for the working expenses of the latter Line. For these reasons, the estimate will be altered as follows:—

Railways.	Gross Earnings.		Working Expenses.		Net Revenue.	
	Estimate as submitted.	Estimate as altered.	Estimate as submitted.	Estimate as altered.	Estimate as submitted.	Estimate as altered.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Madras S.-W. Line ...	46,00,000	46,00,000	21,62,000	21,00,000	24,38,000	25,00,000
Madras N.-W. Line ...	18,00,000	16,50,000	6,00,000	6,50,000	12,00,000	10,00,000
G. S. of India ...	8,00,000	8,00,000	4,00,000	4,00,000	4,00,000	4,00,000
Indian Tramway ...	55,000	55,000	45,000	45,000	10,000	10,000
	72,55,000	71,05,000	32,07,000	31,95,000	40,48,000	39,10,000

BUDGET-ESTIMATE, 1870-71.

9. This estimate may be altered as shown in the following table:—

Railways.	Gross Earnings.		Working Expenses.		Net Revenue.	
	Estimate as submitted.	Estimate as altered.	Estimate as submitted.	Estimate as altered.	Estimate as submitted.	Estimate as altered.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Madras S.-W. Line ...	47,00,000	47,00,000	21,15,000	21,00,000	25,85,000	26,00,000
Madras N.-W. „ ...	20,00,000	21,00,000	7,60,000	8,00,000	12,40,000	13,00,000
G. S. of India ...	9,00,000	8,50,000	4,50,000	4,25,000	4,50,000	4,25,000
Indian Tramway ...	55,000	55,000	43,000	43,000	12,000	12,000
Total ...	76,55,000	77,05,000	33,68,000	33,68,000	42,87,000	43,37,000

10. The increase made in the estimate for the North-West Line is to provide for a possible augmentation of receipts should the line be opened throughout by the end of the current year. The estimate for the Great Southern of India Railway is decreased, owing to its being considered unlikely that the revenue will improve to the extent provided for.

SUMMARY.

11. The following is an abstract of the Madras Railway Budget-Estimate for 1870-71 as modified by these orders, and as compared with the Regular and Budget-Estimates of the current year:—

		Budget-Estimate, 1870-71.	Regular-Estimate, 1869-70.	Budget-Estimate, 1869-70.
State Expenditure.		Rs.	Rs.	Rs.
Establishment		66,400	65,200	65,200
Purchase of land		1,38,300	20,000	39,000
		2,04,700	85,200	1,04,200
Advances on Construction Account.				
Madras Railway, S.-W. Line.	Gross advances	18,50,000	13,50,000	...
	Refunds	9,50,000	9,00,000	...
	Net advances	9,00,000	4,50,000	5,00,000
Madras Railway, N.-W. Line.	Gross advances	23,50,000	18,00,000	...
	Refunds	3,50,000	2,00,000	...
	Net advances	20,00,000	16,00,000	18,00,000
Great Southern of India Railway.	Gross advances	2,35,000	4,43,000	...
	Refunds	1,85,000	1,93,000	...
	Net advances	50,000	2,50,000	2,75,000
Total ...	Gross advances	44,35,000	35,93,000	...
	Refunds	14,85,000	12,93,000	...
	Net advances	29,50,000	23,00,000	25,75,000
Revenue Account.				
Madras Railway, S.-W. Line.	Gross earnings	47,00,000	46,00,000	48,00,000
	Working expenses	21,00,000	21,00,000	23,00,000
	Net revenue	26,00,000	25,00,000	25,00,000
Madras Railway, N.-W. Line.	Gross earnings	21,00,000	16,50,000	20,00,000
	Working expenses	8,00,000	6,50,000	8,00,000
	Net revenue	13,00,000	10,00,000	12,00,000
Great Southern of India Railway.	Gross earnings	8,50,000	8,00,000	8,00,000
	Working expenses	4,25,000	4,00,000	4,00,000
	Net revenue	4,25,000	4,00,000	4,00,000
Indian Tramway Company.	Gross earnings	55,000	55,000	48,000
	Working expenses	43,000	45,000	43,000
	Net revenue	12,000	10,000	5,000
Total ...	Gross earnings	77,05,000	71,05,000	76,48,000
	Working expenses	33,68,000	31,95,000	35,43,000
	Net revenue	43,37,000	39,10,000	41,05,000

ORDER.—Ordered, that this Resolution be communicated to the Government of Madras for information and guidance, and to the Financial Department for information.

Ordered also, that a copy be forwarded to the Accountant General, Public Works Department, for the purpose indicated in para. 4.

BOMBAY RAILWAY BUDGET ORDERS.

Nos. 85—6 A—R, dated 15th February, 1870.

RESOLUTION,—By the Government of India, P. W. Dept.

Read—

Letter from Secretary to Government of Bombay, Public Works Department, No. 2113, dated 9th November 1869.

STATE EXPENDITURE.

The Budget-Estimate of Rs. 1,95,370 for State outlay on Establishments for Guaranteed Railways during 1870-71 is reduced by Rs. 3,370 as per margin, and passed for an even sum of Rs. 1,92,000. In this amount is included an increased provision of Rs. 1,200 for Office contingencies for the Deputy Consulting Engineers, and Examiner of Railway Accounts, regarding which detailed explanation should have been furnished.

	Rs.
Excess provision of Rs. 5 per month made for Military pay and allowances of Consulting Engineer	60
Moiety of increase of Rs. 6,000 made in provision for travelling allowances, disallowed, as in 1870-71 the whole of the Great Indian Peninsula Railway will be open except about 60 miles for the first 6 or 8 months (to make even figures say) ...	3,310
	3,370

2. The estimate for land, amounting to Rs. 13,65,239, is reduced as follows :—

	Lakhs.
1st.—Reclamation on outer line of breakwater, Bombay, Baroda and Central India Railway. Disallowed, as it has yet to be determined on the receipt of estimates whether the approach by the outer line shall be adopted. It is gathered from the Budget-Estimate that the cost of the work will amount to at least Rs. 10 lakhs in addition to the sum of 25½ lakhs sanctioned, and in great part spent, for the inner line. Rs. 50,000 have been entered as the probable expenditure on the work up to end of 1869-70, but it is hoped this is a mistake, the work not having been sanctioned, and the special attention of the Bombay Government having been directed to the necessity for obtaining regular sanction before operations were begun	6
2nd.—Provision of Rs. 2,50,000 as a reserve appears excessive, and is reduced by	1½
The Government of India trust that all applications by the Railway Companies for additional land will be rigidly scrutinized before being complied with, and the outlay only incurred on regularly sanctioned estimates.	
These reductions aggregate	7½

and leave the amount of the estimate for land at Rs. 6,15,000 in even numbers, as follows :—

	Rs.
I.—Reclamation of Back Bay in-shore line	3,15,000

The estimates sanctioned for this purpose by the Government of India amount to Rs. 22,81,689,* but in the Budget this amount is increased to Rs. 25,40,000, the difference, Rs. 2,58,311, representing the amount of supplementary estimates sanctioned by the Government of Bombay, as also the value of rails and sleepers taken over from the Back Bay Company for sidings to the Cotton Green. As the amount involved in these cases is over Rs. 2 lakhs, the sanction of the Government of India is necessary to the increased cost, and this should be applied for in the usual manner.

	Rs.
* Reclamation, *vide* Public Works Department letter No. 848 R, dated 27th September 1867; and Resolution of Government of Bombay, No. 224, dated 5th February 1868...	19,29,194
Filling in unreclaimed ground north of Sonapoor Drain, *vide* Public Works Department letter No. 908R, dated 13th August 1868	3,52,495
	22,81,689

II.—Purchase of properties to give access to site for terminus at Colaba	2,00,000

Allowed to stand with the remark that no land should be taken up until a plan has been placed before the Government of India, showing the quantity required for the approach according as the inner or outer line is adopted (if there would be any difference); and until the probable cost in each case has been reported, confidentially if necessary.

III.—Reserve	1,00,000
Total	6,15,000

ADVANCES ON ACCOUNT OF GUARANTEED CAPITAL.

3. The Regular-Estimate for 1869-70, and the Budget-Estimate for 1870-71 are shown in the Table at the end of this Resolution.

4. The Consulting Engineer seems to be fully alive to the necessity of exercising control over Capital expenditure, and to be determined to enforce it to the full extent of his power, and the Governor General in Council agrees with the Government of Bombay in accepting unreservedly the several recommendations made by him. His Excellency in Council observes with much satisfaction the desire evinced by that Government and their Consulting Engineer to close old sanctions, to postpone as long as possible works of re-construction and the supply of any but really urgent wants, as well as to reduce establishments. It is suggested that no expenditure not urgently required should be incurred for Khundwa until it is settled what point is likely to be the junction of a line to Indore, should it be carried out. The estimates seem large.

5. The provision of Rs. 10,000 (Item 65) made for renewal of engines on the Bombay, Baroda and Central India Railway, may be admitted as a debit to Capital, on the understanding that they have been exclusively used on Construction, and that Revenue has not benefitted by them.

6. Since this estimate was sent forward, the construction of the Veramgaum and Wudwan Branches by the Bombay, Baroda and Central India Railway Company has been sanctioned by the Secretary of State. A provision of 10 lakhs has accordingly been made for the probable outlay on this project during 1870-71. Estimates should be sent forward for orders, as early as possible, showing the probable outlay on surveys and other preliminary operations, and it should be borne in mind that no expenditure on works of any kind can be permitted until estimates have been regularly sanctioned by competent authority.

Estimate of Traffic Earnings.

7. It is thought the Regular-Estimate for 1869-70 may be modified as follows, with reference to the actual receipts up to the last known date :—

Railways.	Gross Earnings.		Working Expenses.		Net Revenue.	
	Estimate as submitted.	Estimate as altered.	Estimate as submitted.	Estimate as altered.	Estimate as submitted.	Estimate as altered.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Great Indian Peninsula Railway	1,58,00,000	1,55,00,000	1,02,50,000	1,01,00,000	55,50,000	54,00,000
Bombay, Baroda and Central India Railway	48,00,000	46,00,000	36,00,000	35,00,000	12,00,000	11,00,000
Sindh Railway	9,50,000	7,50,000	10,00,000	8,50,000	— 50,000	—1,00,000
Indus Steam Flotilla	10,20,000	10,20,000	8,70,000	8,70,000	1,50,000	1,50,000
	2,25,70,000	2,18,70,000	1,57,20,000	1,53,20,000	68,50,000	65,50,000
Add value of stores transferred to debit of Capital from that of Revenue, Sindh Railway, as also sale proceeds of Chinnee Creek Bridge materials					13,50,000	13,50,000
Total ...					82,00,000	79,00,000

8. With respect to the traffic earnings for 1870-71, the estimate for the Sindh Railway appears to be fixed somewhat too high, and is modified as follows :—

	Rs.	Rs.
Gross earnings, altered from	... 11,00,000	to 8,00,000
Working expenses, altered from ...	... 9,00,000	to 7,00,000
Net Revenue	... 2,00,000	1,00,000

The figures for the remaining Railways are shown in the Table at the end of this Resolution.

9. The Budget-Estimate submitted shows the details of the working expenses under the several heads of service; the grants assigned to each head are intended to be the limits within which the several Departments concerned must confine their expenditure, or show good cause for additional allotments being made. This is the first time that this check over a kind of expenditure which has a most important influence on the financial condition of the country has been attempted in India, and the special acknowledgments of the Governor General in Council should be conveyed, through the Government of Bombay, to the Consulting Engineer for the very elaborate Budget-Estimate that has been submitted, and for his careful review of the requirements of the different Railways in the Bombay Presidency.

SUMMARY.

10. The following is an abstract of the Bombay Railway Budget-Estimate for 1870-71, as compared with the Budget and Regular-Estimate of 1869-70 :—

		Budget Estimate, 1870-71.	Regular Estimate, 1869-70.	Budget Estimate, 1869-70.
	State Expenditure on Guaranteed Railways.	Rs.	Rs.	Rs.
Ordinary	Establishment	1,92,000	1,69,200	1,69,000
	Purchase of land	6,15,000	2,30,800	4,00,000
	Total ...	8,07,000	4,00,000	5,69,000
Extraordinary	Land, Bombay Special Fund ...	.....	4,75,000	6,00,000
		8,07,000	A 8,75,000	11,69,000
	Advances on Capital Account.			
Great Indian Peninsula Railway.	Gross advances	1,40,00,000	1,60,00,000	.....
	Refunds	58,00,000	60,00,000	.....
	Net advances	82,00,000	1,00,00,000	1,20,00,000
Bombay, Baroda and Central India Railway.	Gross advances	22,15,000	23,00,000	.....
	Refunds	13,00,000	17,00,000	.....
	Net advances	9,15,000	6,00,000	10,75,000
Sindh Railway	Gross advances	3,50,000	18,70,000	.....
	Refunds	1,80,000	6,20,000	.....
	Net advances	1,70,000	12,50,000	— 1,25,000
Indus Flotilla	Gross advances	3,14,000	3,79,000	.....
	Refunds	3,21,000	3,92,000	.....
	Net advances	— 7,000	— 13,000	30,000
Total ...	Gross advances	1,68,79,000	2,05,49,000	.....
	Refunds	76,01,000	87,13,000	.....
	Net advances	92,78,000	1,18,37,000	1,38,80,000
	Revenue Account.			
Great Indian Peninsula Railway.	Gross revenue	1,90,00,000	1,55,00,000	1,60,00,000
	Working expenses	1,22,00,000	1,01,00,000	96,00,000
	Net revenue	68,00,000	54,00,000	64,00,000
Bombay, Baroda and Central India Railway.	Gross revenue	48,00,000	46,00,000	45,00,000
	Working expenses	30,00,000	35,00,000	30,00,000
	Net revenue	18,00,000	11,00,000	15,00,000
Sindh Railway	Gross revenue	8,00,000	7,50,000	12,50,000
	Working expenses	7,00,000	8,50,000	10,00,000
	Net revenue	1,00,000	— 1,00,000	2,50,000
Indus Flotilla	Gross revenue	10,70,000	10,20,000	10,00,000
	Working expenses	9,20,000	8,70,000	7,00,000
	Net revenue	1,50,000	1,50,000	3,00,000
Total ...	Gross revenue	2,56,70,000	2,18,70,000	2,27,50,000
	Working expenses	1,68,20,000	1,53,20,000	1,43,00,000
	Net revenue	88,50,000	65,50,000	84,50,000
Add value of stores transferred from debit of Revenue to that of Capital, Sindh Railway		.....	13,50,000	.....
		88,50,000	79,00,000	84,50,000

A.—*Vide* letter from Secretary to Government of Bombay, No. 414 A, dated 11th December 1869.

Order.—Ordered, that this Resolution be communicated to the Government of Bombay for information and guidance, and to the Financial Department for information.

BENGAL RAILWAY BUDGET ORDERS.

Nos. 74—6 A—R, dated 11th February, 1870.

RESOLUTION,—By the Government of India, P. W. Dept.

Read—

Letter from Joint Secretary to Government, Bengal, Public Works Department, Railway Branch, No. 2528 G, dated 30th November 1869.

STATE OUTLAY ON GUARANTEED RAILWAYS.

The estimate of Rs. 92,880 for State outlay on Establishments for Guaranteed Railways is reduced by Rs. 2,916, as per margin, on account of the transfer of one of the Senior Deputy Consulting Engineers and his Establishment to the Government, North Western Provinces. This reduces the amount of the estimate to Rs. 89,964, which is passed for an even sum of Rs. 90,000, with the remark that the comparison made in the estimate with the grant of 1869-70 should have exhibited the amount sanctioned by the Government of India, and not the grant applied for by the Government of Bengal.

	Rs.
1 Clerk, mean salary	80
2 Peons	13
	93
	12
	1,116
Travelling allowances	1,200
Contingencies	600
	2,916

2. The estimate of Rs. 1,76,415 for purchase of land is passed for Rs. 50,000, *viz.*, Rs. 26,415 the estimated cost of lands ordered to be taken up, and the balance to meet demands of a minor nature as they arise. Rs. 1,50,000 has been proposed by the local authorities for land which it is thought may possibly be required during the year, but it is not desirable to appropriate funds for purposes of which the exact nature cannot be indicated. Every proposal for taking up fresh land should be most closely scrutinized, and it is time that the demands for lands on account of existing Railways in Bengal should cease.

OUTLAY ON STATE RAILWAYS.

3. The Regular-Estimate of expenditure on the Calcutta and South-Eastern Railway for 1869-70 amounts to Rs. 1,28,000, *viz.* :—

	Rs.
Extraordinary—	
Construction charges	13,000
Ordinary—	
Working expenses	1,15,000
	1,28,000

The provision for Working expenses appears however large, and may it is thought be reduced to Rs. 1,00,000. The probable earnings during 1869-70 are set down at Rs. 1,00,000, but Rs. 75,000 is considered a safer estimate.

4. For 1870-71, the estimated expenditure is Rs. 1,44,000, *viz.* :—

	Rs.
Extraordinary—	
Construction charges	34,000
Ordinary—	
Working expenses	1,10,000
	1,44,000

The time, however, appears to have arrived for stopping the debit of further expenditure to the Capital Account of this Line, and in this view the provision of Rs. 34,000 for Construction charges is disallowed. A sum of Rs. 50,000 is, however, allowed under Ordinary to meet outlay on Minor Works that may arise during the year, such as gate-keepers' lodges, (which should be limited to simple huts with tiled roof), putting the Calcutta yard in proper order, re-ballasting the line, &c. &c.

5. The provision for Working expenses is reduced from Rs. 1,10,000 to Rs. 75,000, and the estimate of traffic earnings is also reduced to a like amount. Under these orders, the revenue estimate of the Calcutta and South-Eastern Railway for 1870-71 will stand as follows :—

	Rs.
Improvements, additions, repairs and renewals	50,000
Working expenses	75,000
	1,25,000
Receipts	75,000
Deficit	50,000

Orders will be issued separately regarding the preparation of an estimate working up to the amount now passed.

ADVANCES ON GUARANTEED CAPITAL ACCOUNT.

6. The Regular-Estimate for 1869-70, submitted by the Local Government, may be accepted as detailed in the Table at the end of this Resolution for an even sum of Rs. 95½ lakhs, being Rs. 12½ lakhs in excess of the Budget allotment. The Government of Bengal should, however, bear in mind that the sanction of the Government of India should invariably be applied for in every case in which it is found necessary to make advances in excess of the Budget assignment.

7. The Budget-Estimate of advances during 1870-71 for the East Indian Railway, Main and Jubbulpoor Lines, amounting to Rs. 1,28,31,061, is reduced as follows :—

	Amount disallowed. Rs.
I.—Protection of Bridges.—It is probable that some outlay will be necessary on this account. But there must be a limit to the charge thrown on Capital, and the provision under this head is consequently disallowed. A special reference should be made to the Government of India in every case of importance, and the outlay on all small works of this kind that may be found necessary must be charged to Revenue ...	50,000
Carried over ...	50,000

		Rs.
	Brought forward ...	50,000
II.—Putting in permanent drains in cuttings, Beerbhoom and Rajmehal Districts. Estimate, Rs. 25,000. Expenditure this year Rs. 10,000. Proposed for 1870-71		10,000
All further expenditure on this head from Capital should be discouraged, and the provision is therefore disallowed. If found necessary, the outlay should be provided for from Revenue.		
III.—Construction of rooms for Native employés and Baboos, Bengal Division	Rs. 10,900	
Pucca huts for maintenance gangs, and rooms for Native employés, North Western Division	2,03,390	
against estimates aggregating Rs. 4,15,770, of which Rs. 1,19,790 is expected to be spent up to the end of this year. The Government of India cannot assent to any further outlay, except in completing buildings commenced, until the propriety of the expenditure has been carefully investigated and reported on by the Consulting Engineer. The Governor General in Council cannot admit the propriety of erecting permanent structures at such a heavy cost for Natives, especially in the North-Western Provinces, where mud walls and roofs are used by the whole community furnishing this class of servants. The same remark probably applies to the out-offices of dwellings for the European servants, and certainly to quarters for Natives on the Jubbulpoor Line, for which there is a demand of Rs. 36,200 against estimates aggregating Rs. 64,600, Rs. 23,200 having already been spent. The total provision for quarters for the Main and Jubbulpoor Lines is Rs. 2,50,490. This will be reduced by		2,00,000
IV.—Reserve to meet unforeseen requirements Rs. 5,96,238.* Rupees two lakhs is deemed sufficient for this purpose, and a sum of		3,96,238
is therefore disallowed.		
V.—New Passenger Station, Jubbulpoor.—Disallowed, as the expenditure already sanctioned and which should be incurred during the current official year provides all that seems required for the purpose		1,00,000
Carried over ...		**7,56,238**

*	Rs.
Bengal	96,767
North-Western Provinces	4,08,011
Jubbulpoor	91,460
Total ...	5,96,238

		Rs.
	Brought forward ...	7,56,238
VI.—Doubling Line between Buxar and Mogul Serai, Rs. 8,09,852.—Four lakhs should suffice for expenditure during 1870-71, and the balance ... ... is therefore disallowed.		4,09,852
VII.—Chord-Line, Assensole Changing Station, Rs. 7,68,000.—It is highly improbable that this amount will be required during 1870-71, and it is therefore reduced by		3,68,000
It is understood that the construction of this work does not come under the contract with Messrs. Brassey and Co.		
VIII.—Establishments, Rs. 16,35,000.—Of which, Rs. 1,75,000 is for the Jubbulpoor Line. This latter sum is large for the purpose, and is reduced to Rs. one lakh. That for the Main Line is reduced to Rs. 12 lakhs. Statements should be furnished without delay showing the details of the large establishments proposed to be paid from Capital		3,35,000
8. These reductions aggregate		18,69,090

and reduce the amount of the estimate of advances for 1870-71 as follows :—

	Main Line.	Jubbulpoor Extension.	Total.
Advances.	Rs.	Rs.	Rs.
Estimate submitted	1,21,07,801	7,23,760	1,28,31,061
Less reductions	16,22,480	A 2,46,660	18,69,090
Sum passed in even numbers ...	1,05,00,000	5,00,000	1,10,00,000
Refunds.			
As estimated	28,00,000	4,00,000	32,00,000
Add as per para. 20 of Consulting Engineer's Note for Sale proceeds of stores	1,00,000	...	1,00,000
Total refunds ...	29,00,000	4,00,000	33,00,000
Net advances ...	76,00,000	1,00,000	77,00,000

A.—*Viz.*, Part of item No.		Rs.
III ...		30,200
IV ...		41,460
V ...		1,00,000
VIII ...		75,000
Total ...		2,46,660

9. In the estimate as above passed, a sum of Rs. 90,000 is included in part of estimates amounting to Rs. 2,17,500 for ballasting ; this provision the Consulting Engineer states is not for renewal of ballast, but is merely to make up the ballast to the required section, which in some parts was not wholly done on first making the Line. Before allowing any portion of this expenditure to be debited to Capital Account, the Government of India desire to be furnished with a statement showing what has been the charge to Revenue for ballast on these parts of the line since the outlay on the present estimates commenced. Meanwhile, the item may stand *provisionally*.

10. The sums proposed to be taken for the Locomotive and Carriage and Wagon Departments are comparatively small, but the estimates are unsupported by details of any kind. Certain sanctions, some of very old date, are quoted, but there is no information as to the number of locomotives and vehicles erected and remaining to be erected on those sanctions, or of the number to be erected within the year on the proposed grants. Pending submission of full details on these points, the sums are only admitted provisionally.

11. The provision made in the estimate for Minor Works is passed on the understanding that all expenditure on works of this nature is contingent on the orders that may issue as to limits of cost of works that may be charged against Capital.

12. For the Eastern Bengal Railway the estimate of advances, amounting to ... ... Rs. 8,86,208 is reduced as follows :—

	Rs.	Rs.
Branch Line to Chitpoor, not sanctioned ...	20,000	
Works at Samnuggur	15,000	
Chief Accountant's Office	10,000	
		45,000
Leaving available in even numbers ...		8,41,000
Less refunds		3,50,000
Net advances ...		4,91,000

This includes Rs. 80,000 for Establishments, for which details should be furnished.

ESTIMATE OF TRAFFIC EARNINGS.

13. The Regular-Estimate of traffic earnings for the East Indian Railway shows the receipts of 1869-70 at Rs. 250 lakhs, and the working expenses at Rs. 107½ lakhs, but the former may be altered to Rs. 266 lakhs, corresponding in amount to the actual receipts of 1869, and the provision for working expenses increased to Rs. 111 lakhs. This leaves the net revenue at Rs. 155 lakhs, of which Rs. 8,13,000 should be reserved for payment of surplus profits of the half-year ending 30th June 1869, thus diminishing the sum to be credited to Government to Rs. 1,46,87,000. *(a)*

	Lakhs. Rs.
Actual charges, first-half	56½
Charges for second-half, 45 per cent. of earnings	54½
Total	111

(a)—Exclusive of Rs. 1,11,756, being loss in the working of the Jubbulpoor extension for the half-year ending 30th June 1869, to be recovered in England.

14. In the Regular-Estimate for the Jubbulpoor Line a provision of Rs. 10½ lakhs is made for working expenses. But this seems insufficient, and the amount is increased to Rs. 12¼ lakhs. The estimate of earnings is also altered from Rs. 10½ to 10¼ lakhs. This alteration gives an estimated loss of Rs. 2 lakhs in the working of this Line during 1869-70.

15. The receipts of the Eastern Bengal Railway during 1869-70 are estimated to amount to Rs. 23 lakhs, but the actual receipts during 1869 have only been Rs. 18,80,000, and the Regular-Estimate will be altered accordingly. The working expenses will be taken at Rs. 11,10,000 lakhs, instead of Rs. 11 lakhs, and consequently the net profits may be set down at Rs. 7,70,000 lakhs.

16. The estimate of traffic earnings during 1870-71 provides for a considerable increase, owing to the opening of the Goalundo Extension, and the through Line to Bombay. That estimate is modified as follows, with reference to the actual realizations of 1869 :—

	Gross Earnings.		Working Expenses.		Net Revenue.	
	Estimate as submitted.	Estimate as altered.	Estimate as submitted.	Estimate as altered.	Estimate as submitted.	Estimate as altered.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
East Indian Railway, Main Line	2,65,00,000	2,70,00,000	1,19,25,000	1,12,00,000	1,45,75,000	1,58,00,000
Ditto, Jubbulpoor Line	12,50,000	15,00,000	11,25,000	10,00,000	1,25,000	5,00,000
Eastern Bengal Railway ...	30,00,000	25,00,000	13,00,000	13,00,000	17,00,000	12,00,000
Total ...	3,07,50,000	3,10,00,000	1,43,50,000	1,35,00,000	1,64,00,000	1,75,00,000
Less estimated moiety of surplus profits, East Indian Railway...						9,00,000
Net Revenue to be credited to Government						1,66,00,000

SUMMARY.

17. The following is an abstract of the Bengal Railway Budget-Estimate as now passed for 1870-71, compared with the Regular and Budget-Estimate of 1869-70 :—

	Budget-Estimate, 1870-71.	Regular-Estimate 1869-70.	Budget-Estimate, 1869-70.
State expenditure on Guaranteed Railways.	Rs.	Rs.	Rs.
Establishment	90,000	1,04,500	1,04,500
Purchase of land	50,000	1,82,000	1,82,000
Total	1,40,000	2,86,500	2,86,500
Expenditure on Calcutta and South-Eastern State Railway.			
Construction Charges, Extraordinary ...	...	13,000	38,000
Ditto, Ordinary ...	50,000	...	...
Working expenses Ordinary ...	75,000	1,00,000	1,30,000
Total	1,25,000	1,13,000	1,68,000
Grand Total State expenditure ...	2,65,000	3,99,500	4,54,500
Revenue Account—State Railways.			
Gross earnings, Calcutta and South-Eastern Railway	75,000	75,000	82,000
Advances on Capital Account.			
East Indian Railway, Main Line ... Gross advances	1,05,00,000	1,11,00,000	...
East Indian Railway, Main Line ... Refunds	29,00,000	34,00,000	...
East Indian Railway, Main Line ... Net advances	76,00,000	77,00,000	60,00,000
East Indian Railway, Jubbulpoor Extension ... ... Gross advances	5,00,000	9,50,000	...
East Indian Railway, Jubbulpoor Extension ... ... Refunds	4,00,000	6,00,000	...
East Indian Railway, Jubbulpoor Extension ... ... Net advances	1,00,000	3,50,000	8,00,000
Eastern Bengal Railway ... ... Gross advances	8,41,000	18,60,000	...
Eastern Bengal Railway ... ... Refunds	3,50,000	3,60,000	...
Eastern Bengal Railway ... ... Net advances	4,91,000	15,00,000	15,00,000
Total ... ... Gross advances	1,18,41,000	1,39,10,000	...
Total ... ... Refunds	36,50,000	43,60,000	...
Total ... ... Net advances	81,91,000	95,50,000	83,00,000

		Budget-Estimate, 1870-71.	Regular-Estimate, 1869-70.	Budget-Estimate, 1869-70.
Revenue Account.		Rs.	Rs.	Rs.
East Indian Railway, Main Line ..	Gross Revenue ...	2,70,00,000	2,66,00,000	2,60,00,000
	Working expenses ...	1,12,00,000	1,11,00,000	1,25,00,000
	Net Revenue ...	1,58,00,000	1,55,00,000	1,35,00,000
East Indian Railway, Jubbulpoor Extension	Gross Revenue ...	15,00,000	10,25,000	15,00,000
	Working expenses ...	10,00,000	12,25,000	10,50,000
	Net Revenue ...	5,00,000	—2,00,000	4,50,000
Eastern Bengal Railway	Gross Revenue	25,00,000	18,80,000	20,00,000
	Working expenses ...	13,00,000	11,10,000	9,00,000
	Net Revenue	12,00,000	7,70,000	11,00,000
Total	Gross Revenue ...	3,10,00,000	2,95,05,000	2,95,00,000
	Working expenses ...	1,35,00,000	1,34,35,000	1,44,50,000
	Net Revenue	1,75,00,000	1,60,70,000	1,50,50,000
Less estimated amount of moiety of surplus profits of East Indian Railway to be paid to shareholders		9,00,000	8,13,000	...
Net Revenue to be credited to Government ...		1,66,00,000	1,52,57,000	1,50,50,000

ORDER.—Ordered, that this Resolution be communicated to the Government of Bengal for information and guidance, and to the Financial Department and Accountant General, Public Works Department, for information.

N. W. P. RAILWAY BUDGET ORDERS.

Nos. 50—4 A—R, dated 3rd February, 1870.

RESOLUTION,—By the Government of India, P. W. Dept.

Read—

Letter from Secretary to Government, North Western Provinces, No. 316 R, dated 25th November 1869.

RESOLUTION.—The Budget-Estimate of the North Western Provinces for 1870-71, for purchase of land for Guaranteed Railways, amounting to 2,50,000 is reduced as follows :—

	Rs.	Rs.
1st.—Provision for land likely to be required for East Indian Railway ... ... Disallowed, as the Government of Bengal are not aware at present of any probable requirements. If any emergent demand arise, an additional grant may be applied for.	1,00,000	
2nd.—Provision for unforeseen requirements of the Delhi Railway, Rs. 20,000. Rupees 10,000 would appear to be sufficient for the purpose. Amount disallowed	10,000	
These reductions aggregate		1,10,000
Leaving the estimate at		1,40,000

This amount includes a provision of Rs. 1,30,000 for land for the Oudh and Rohilkhund Railway, and the whole sum is allowed on the understanding that the outlay will only be incurred on estimates sanctioned by competent authority.

2. In addition to the above, a sum of Rs. 14,000 as per margin is added to the estimate to provide for the salary, establishment, &c., of the Senior Deputy Consulting Engineer for Railways in Bengal, who has recently been placed under the direct orders of the Government, North Western Provinces, *vide* Public Works Department Resolution Nos. 1303—4 R, dated 4th September 1869.

	Rs.	Rs.
Staff pay of Deputy Consulting Engineer	700	
Military allowances as Captain of Engineers	294	
One Clerk	80	
Peons	13	
	1,087 × 12 =	13,044
Travelling Allowances and Contingencies ...	...	956
		14,000

3. Under these orders the grant for 1870-71 will be—

	Rs.
Establishment	14,000
Purchase of land	1,40,000
Total ...	1,54,000

ORDER.—Ordered, that this Resolution be communicated to the Governments and Administration noted in the margin, for information and guidance, and that a copy be forwarded to the Financial Department for information.

Governments of Bengal, North Western Provinces and Punjab, and Chief Commissioner, Oudh.

PUNJAB RAILWAY BUDGET ORDERS.

Nos. 64—5 A—R, dated 7th February, 1870.

RESOLUTION,—By the Government of India, P. W. Dept.

Read—

Letter from Joint Secretary to Government, Punjab, Public Works Department, Railway Branch, No. 1932, dated 10th November 1869.

STATE EXPENDITURE.

The Budget-Estimate of State expenditure on Establishments for Guaranteed Railways, amounting to Rs. 63,036, provides for the Consulting Engineer and his Deputy receiving a consolidated monthly pay of Rs. 2,000 and Rs. 950, respectively. This, however, has not been sanctioned as yet, and the excess provision of Rs. 4,740 is therefore disallowed. The provision of Rs. 2,196 for Military pay of the Consulting Engineer is also disallowed, as the Officer holding the appointment at present is only officiating, and in consequence it is improbable that he will be seconded. A provision of Rs. 300 is added for pay of an Examiner of Accounts, instead of the Accountant lately sanctioned, and with this addition, the estimate for Establishments will then stand in even numbers at Rs. 56,500.

	Rs.	Rs.
Amount provided in Estimate		35,400
Amount that should have been provided—		
Consulting Engineer.	Rs.	
Staff pay	1,000	
Military Allowances as 1st Class Lieutenant-Colonel	759	
Deputy Consulting Engineer.		
Staff pay	600	
Military Allowances as Lieutenant of Engineers	196	
	2,555 × 12 = 30,660	
Excess ...	4,740	

2. The estimate shows that the expenditure on Establishments during 1869-70 is likely to be in excess of the Budget grant by Rs. 7,390, of which, Rs. 1,300 is on account of contingencies. The probable expenditure during the current year should be again calculated with reference to the recent promotion of the Officiating Consulting Engineer to the rank of Lieutenant-Colonel, and application made to the Government of India for an additional grant to cover the probable excess, which should reach the Government of India by end of this month at latest.

ADVANCES ON GUARANTEED CAPITAL ACCOUNT.

3. The Regular-Estimate of advances during 1869-70, submitted by the Local Government, may be accepted as exhibited in the Table at the end of this Resolution.

4. The estimate of advances for the Punjab Railway during 1870-71, amounting to Rs. 10,69,000, is reduced as follows:—

	Rs.	Rs.
I.—Passenger Station, Mooltan, and Office accommodation at Lahore, disallowed	1,10,000	
II.—Workshops at Lahore reduced from Rs. 4,50,000 to Rs. 3,00,000	1,50,000	
III.—Provision for rolling-stock reduced from Rs. 1,14,000 to Rs. 50,000, with the remark that before the construction of more rolling-stock is allowed, the insufficiency of the existing stock should first be established	64,000	
IV.—Provision of Rs. 2,40,000 for stores and freight, and of Rs. 96,000 for Establishment debitable to Capital, seems excessive. The former is reduced to Rs. 1,50,000, and the latter to Rs. 60,000 ...	1,26,000	
Total		4,50,000
Leaving the net amount of the estimate at		**6,19,000**
That for refunds being		**4,00,000**
The net amount of advances will be passed for		**2,19,000**

5. The estimate for the Delhi Railway is passed for—

	Rs.
Gross advances	40,00,000
Refunds	4,00,000
Net advances	36,00,000

REVENUE ACCOUNT.

6. The Regular-Estimate of traffic earnings for 1869-70 for the Punjab Railway shows a loss of Rs. 50,000, but as the actual earnings of the year 1869 have amounted to Rs. 10,53,000, that amount will be entered in the Regular-Estimate. The working expenses may be assumed at Rs. 9,73,000, and the net profits at Rs. 80,000.

7. The Budget-Estimate for 1870-71 shows that the whole of the estimated earnings, amounting to Rs. 12 lakhs, are likely to be absorbed by the working expenses. This would be an extraordinarily unsatisfactory result, and the Government of India must express surprise that such an estimate should have been sent up by the Local Government without a word of comment, or any proposal for arriving at a better result. The case calls for immediate and vigorous action, in view to reduction of expense and development of traffic. Stations which do not pay should be closed, and trains which do not pay should be stopped, while the whole of the charges for establishment, from the Agent down to the lowest paid servant on the Line, should also be reviewed with special reference to the recent Circular, No. 40 R of 1869. This Review should be submitted to the Government of India by the 31st March; meanwhile, a provision of only 9 lakhs will be passed for working expenses, leaving 3 lakhs as net revenue. Even this may prove to be a sanguine estimate of the sum available in reduction of the charge for guaranteed interest, which is about £ 115,000.

8. For the Delhi Railway, the Regular-Estimate for 1869-70 shows a net revenue of Rs. 5½ lakhs. This, however, may be safely increased to Rs. 6 lakhs, *viz.* :—

	Rs.
Gross earnings	13,00,000
Working expenses	7,00,000
Net Revenue ...	6,00,000

9. For 1870-71 the figures are—

	Rs.
Gross earnings	22,00,000
Working expenses	15,00,000
Net Revenue ...	7,00,000

10. The gross earnings appear to be considerably over-estimated, while more is provided for working expenses than can be passed. Allowing that 13 lakhs will be realized in 1869-70, that the earnings of the 50 miles between the Beas and Phillour will be received in 1870-71, and that an increase to the through traffic may be expected, there being a break only at the valley of the Sutlej, the estimate for 1870-71 may be taken at—

	Rs.
Earnings	19,00,000
Working expenses	10,00,000
Net Revenue ...	9,00,000

SUMMARY.

11. The following is an abstract of the Punjab Guaranteed Railway Budget-Estimate for 1870-71 as compared with the Budget and Regular-Estimates for 1869-70 :—

		Budget-Estimate, 1870-71.	Regular-Estimate, 1869-70.	Budget-Estimate, 1869-70.
State Expenditure on Guaranteed Railways.		Rs.	Rs.	Rs.
Establishment		56,500	58,500	51,000
Purchase of land...		500	3,000	5,000
		57,000	61,500	56,000
Advances on Construction Account.				
Punjab Railway	Gross advances ...	6,19,000	...	...
	Refunds ...	4,00,000	...	...
	Net advances ...	2,19,000	—2,50,000	7,00,000
Delhi Railway	Gross advances ...	40,00,000	...	...
	Refunds ...	4,00,000	...	...
	Net advances ...	36,00,000	50,00,000	55,00,000
TOTAL ...	Gross advances ...	46,19,000	...	...
	Refunds ...	8,00,000	...	...
	Net advances ...	38,19,000	47,50,000	62,00,000
Revenue Account.				
Punjab Railway	Gross Revenue ...	12,00,000	10,53,000	12,00,000
	Working expenses ...	9,00,000	9,73,000	8,00,000
	Net Revenue ...	3,00,000	80,000	4,00,000
Delhi Railway	Gross Revenue ...	19,00,000	13,00,000	10,00,000
	Working expenses ...	10,00,000	7,00,000	7,00,000
	Net Revenue ...	9,00,000	6,00,000	3,00,000
TOTAL ...	Gross Revenue ...	31,00,000	23,53,000	22,00,000
	Working expenses ...	19,00,000	16,73,000	15,00,000
	Net Revenue ...	12,00,000	6,80,000	7,00,000

ORDER.—Ordered, that this Resolution be communicated to the Government of Punjab for information and guidance, and to the Financial Department for information.

OUDH RAILWAY BUDGET ORDERS.

Nos. 83—4 A—R, dated 7th February, 1870.

RESOLUTION,—By the Government of India, P. W. Dept.

Read—

Letter from Secretary to Chief Commissioner, Oudh, No. 1563 R, dated 12th November 1869.

STATE EXPENDITURE.

The Budget-Estimate of Rs. 40,155 for State expenditure on establishment for Railways during 1870-71, after a reduction of the excess provision of Rs. 2,040* for the pay of the Deputy Consulting Engineer, is increased to Rs. 40,900† on account of the probable cost of the Office establishment and allowances of that Officer; a tabular statement should, however, be submitted for sanction in the usual manner. The estimate of Rs. 50,000 for purchase of land is passed in full.

		Rs.	
* Amount provided			9,192
Amount likely to be drawn :—	Rs.		
Staff Salary	400		
Military Allowances	196		
		596	7,152
Excess			2,040
† Details of amount added :—	Per mensem.		
	Rs.		
1 Clerk	60		
2 Peons	10		
Travelling Allowances	100		
Office Rent	30		
Contingencies	30		
	230 × 12 =		2,760
Add.—Estimate	40,155—2,040 =		38,115
			40,875

OUDH AND ROHILKUND RAILWAY.

Estimate of advances on Capital Account.

2. The Regular-Estimate of advances for 1869-70, amounting to Rs. 33 lakhs, may be accepted. The Budget-Estimate of Rs. 77,90,000 for 1870-71 is passed for‡ Rs. 65 lakhs, as the Government of India think more than that sum will not be spent, and that large reductions may be safely made in several of the items detailed in the estimate of the year.

	Rs.
‡ Gross advances	67,10,000
Less refunds	2,10,000
	65,00,000

Revenue Account.

3. The Regular-Estimate for 1869-70 appears to be approximately correct, so far as the gross receipts are concerned, but sufficient provision does not appear to have been made for working expenses; the estimate is passed by the Government of India as follows :—

	Rs.
Gross earnings	2,13,000
Working expenses	1,90,000
Net revenue ...	23,000

4. For 1870-71 the figures are :—

	Rs.
Gross earnings	4,14,000
Working expenses	2,48,000
Net revenue ...	1,66,000

This estimate, which appears to be a somewhat over-sanguine one, is based on the expectation that the line from Lucknow to Byramghât, and a portion of the line from Nawabgunge towards Fyzabad, will be open for traffic during the year. Even if this were likely, it is very much doubted whether the additional line will bring in the same proportional returns as the present length for some time to come. But it is not anticipated that the whole 60 miles will be opened for traffic by the end of the rains of 1870. The Byramghât Branch, 40 miles in length, may however be opened at this time, and the gross earnings may be taken at Rs. 2,85,000, of which 75 per cent., or Rs. 2,10,000, will probably be absorbed in working expenses, leaving the net revenue at Rs. 75,000.

SUMMARY.

5. The following is an abstract of the Oudh Railway Budget-Estimate for 1870-71, as compared with the Regular and Budget-Estimate of 1869-70 :—

		Budget-Estimate, 1870-71.	Regular-Estimate, 1869-70.	Budget-Estimate 1869-70.
State Expenditure.		Rs.	Rs.	Rs.
Establishment		40,900	28,600	28,600
Purchase of land		50,000	1,94,400	2,00,000
		90,900	2,23,000	2,28,600
Advances on Capital Account.				
Oudh and Rohilkund Railway.	Gross advances ...	67,10,000	35,00,000	...
	Refunds ...	2,10,000	2,00,000	...
	Net advances ...	65,00,000	33,00,000	50,00,000
Revenue Account.				
Oudh and Rohilkund Railway.	Gross revenue ...	2,85,000	2,13,000	3,25,000
	Working expenses ...	2,10,000	1,90,000	2,25,000
	Net revenue ...	75,000	23,000	1,00,000

ORDER.—Ordered, that this Resolution be communicated to the Chief Commissioner, Oudh, for information and guidance, and to the Financial Department for information.

BUDGET ORDERS OF MADRAS IRRIGATION & CANAL CO.

Nos. 63—4 A—I, dated 1st March, 1870.

RESOLUTION,—By the Government of India, P. W. Dept.

Read:—

Letter from Secretary to Government of Madras, No. 3757, dated 25th November 1869.

STATE EXPENDITURE.

The estimated expenditure under this head during 1870-71, which is to be provided for from the Ordinary Public Works grant, amounts to Rs. 53,800, of which Rs. 27,200 is for a Consulting Engineer and Office Establishment. But now that a separate Chief Engineer is maintained for Irrigation Works, the Government of Madras may be asked whether the appointment of Consulting Engineer is necessary, and whether the duties of the appointment, which are believed not to be onerous, might not be provided for by some more economical arrangement.

2. Rupees 1,728 has been entered for establishment employed to make over land in the Cuddapah District estimated to cost Rs. 10,000. The provision corresponds with what was allowed in previous years, but the time appears to have arrived for dispensing with the services of the establishment. The Government of Madras should be asked to take this matter into consideration and do what is needful.

ADVANCES ON CONSTRUCTION ACCOUNT.

Rs.

3. The Budget-Estimate under this head for 1869-70 amounts to 22,00,000

The Regular-Estimate for 1869-70 to 17,29,000

And the Budget-Estimate for 1870-71 to 22,80,000

This latter sum is reduced to Rs. 13¾ lakhs, being the estimated unexpended balance of the sum authorized to be spent. If it is shown that the balance is larger, the Government of India will be prepared to sanction the necessary additional funds, but it is to be distinctly understood that the expenditure must be strictly limited by the total which is available under the agreement, and the Government of Madras are requested to arrange for restricting the outlay accordingly.

Credits.	Rs.	Rs.
Paid up capital of the Company against an authorized sum of one crore	99,96,660	
Loan sanctioned by Secretary of State ...	60,00,000	
		1,59,96,660
Debits.		
Withdrawals in England up to end of December 1869—		
Against Capital Account	7,66,810	
Against Loan Account...	45,80,000	
And in India	91,88,218	
		1,45,35,028
Balance undrawn on 1st January 1870 ...	...	14,61,632
Estimated advances for the last three months of 1869-70, *viz.* :—		
Regular-Estimate	17,29,000	
Less withdrawn during the first nine months of 1869-70 in England ...	16,50,000	
		79,000
Balance available for expenditure during 1870-71	...	13,82,632

REVENUE ACCOUNT.

4. The figures are as follows compared with the Budget and Regular-Estimate of 1869-70 :—

	Budget-Estimate, 1869-70.	Regular-Estimate, 1869-70.	Budget-Estimate, 1870-71.
	Rs.	Rs.	Rs.
Gross earnings	99,000	16,290	99,000
Working expenses...	23,000	4,970	23,334
NET REVENUE ...	76,000	11,320	75,666

5. The cause of the falling off in the receipts of 1869-70 is explained to be due to the main and distributary channels having been in a much less forward condition than was expected. But the available funds for this undertaking are fast coming to an end, while, so far as is known, the works are still in a very incomplete state. It appears only too evident that the financial condition of this Company will soon again call for the serious consideration of Government.

SUMMARY.

6. The following is an abstract of the Budget-Estimate of the current year :—

HEADS OF SERVICE.	Budget-Estimate, 1870-71.	Regular-Estimate, 1869-70.	Budget-Estimate, 1869-70.
State Expenditure.	Rs.	Rs.	Rs.
Establishment	33,800	30,896	29,000
Purchase of land	20,000	9,124	36,000
Total	53,800	40,020	65,000
Expenditure from Construction funds	13,75,000	17,29,000	22,00,000
Revenue Account.			
Gross earnings	99,000	16,300	99,000
Working expenses...	23,000	5,000	23,000
NET REVENUE	76,000	11,300	76,000

ORDER.—Ordered that this Resolution be communicated to the Government of Madras for information and guidance, and to the Financial Department for information.

BOMBAY STATE RAILWAY BUDGET ORDERS.

Nos. 114—15 A—R, dated 4th, March 1870.

RESOLUTION,—By the Govt. of India, P. W. Dept.

Read :—

Letter No. 191, dated 8th February 1870, from Secretary to the Government of Bombay, Public Works Deparment, forwarding the above.

RESOLUTION.—The estimate submitted, amounting to Rs. 1,35,480, is for establishment for the survey of a line of Railway from Carwar to Hooblee, which has been authorized by the Government of India. The estimate is passed for an even sum of Rs. 1,50,000 as follows :—

	Rs.
Establishment	88,000
Travelling allowances	12,000
Contingencies	36,000
Reserve to meet unforeseen demands during the year	14,000
Total ...	1,50,000

ORDER.—Ordered, that this Resolution be communicated to the Government of Bombay for information and guidance, and to the Financial Department for information.

BENGAL STATE RAILWAY BUDGET ORDERS.

Nos. 110—11 A—R, dated 4th March, 1870.

RESOLUTION—By the Govt. of India, P. W. Dept.

EXTRAORDINARY.

The amount passed under this head is as follows :—

Calcutta and South-Eastern Railway.

	Rs.
Anticipated payment in England to debenture holders of this Railway	1,05,000
Survey of proposed Railway, north of Ganges.	
Establishment for survey expenses	50,000
Total ...	1,55,000

ORDINARY.

2. The following is the Budget-Estimate under this head for the Calcutta and South-Eastern Railway as passed in Public Works Department Resolution Nos. 74—6 A—R, dated 11th February 1870 :—

	Rs.
Charges—	
Construction	50,000
Working expenses	75,000
	1,25,000
Revenue—	
Traffic earnings	75,000
Net deficiency ...	50,000

ORDER.—Ordered, that this Resolution be communicated to the Government of Bengal for information and guidance, and to the Financial Department for information.

N. W. P. STATE RAILWAY BUDGET ORDERS.

Nos. 112—13 A—R, dated 4th March, 1870.

RESOLUTION—By the Govt. of India, P. W. Dept.

Read :—

Letter No. 94 S—R, dated 15th December 1869, from Secretary to Government, North Western Provinces, Public Works Department, submitting the estimate for 1870-71.

RAJPOOTANA RAILWAY.

Delhi District.

For the line from Delhi to Gurhee Hurseroo, the amount included in the Budget-Estimate is Rs. 2,56,500 ; but the sum entered in the letter from the Government, North Western Provinces, is Rs. 3,54,000, which is passed as follows :—

	Rs.
Purchase of land	2,00,000
Construction of line	1,19,000
Ballast	30,000
Stations and Buildings	5,000
Total ...	3,54,000

2. For the line from Gurhee to Rewaree, the sum entered is Rs. 1,84,000. This amount is increased to Rs. 2,34,000 for larger outlay on earth-work and ballast, distributed as follows :—

	Rs.
Purchase of land	22,000
Construction of line	1,50,000
Ballast	55,000
Stations and Buildings	7,000
Total ...	2,34,000

3. The estimated expenditure for the Furrucknuggur Branch is passed for Rs. 60,000.

Agra District.

4. For the line from Agra to Sambhur, the grant is passed for Rs. 2½ lakhs, *viz.* :—

	Rs.
Preliminary expenses	10,000
Purchase of land	40,000
Construction of line	1,50,000
Ballast	50,000
Total ...	2,50,000

5. One lakh is entered for advances to the Forest Department for timber. That Department expects to deliver in 1870-71 about 80,000 sleepers at an estimated rate of Rs. 5 each. This seems excessive, and a reduced rate should be assumed. Allowing for this, and for short deliveries, the estimate may include a payment of Rs. 3½ lakhs, or for Rs. 2½ lakhs in excess of the amount entered.

6. It is somewhat difficult to estimate for the payments in London for stores. Some outlay may be incurred on plant, to meet which 2 lakhs may be provided, as well as on rails, for which Rs. 5 lakhs may be reserved, assuming that rails for 60 miles for the Delhi-Rewaree Section are ordered and paid for. The Rs. 7 lakhs thus provided should be sufficient to meet any small payments for girder bridges that may be required.

SUMMARY.

7. The following is an abstract of the Budget-Estimate for 1870-71 as now passed :—

	Delhi District.			Agra District.	Total.
	Delhi to Gurhee.	Gurhee to Rewaree.	Furruck-nuggur Branch.	Agra to Sambhur.	
	Rs.	Rs.	Rs.	Rs.	Rs.
Preliminary expenses	...	...	...	10,000	10,000
Purchase of land	2,00,000	22,000	6,000	40,000	2,68,000
Construction of line	1,19,000	1,50,000	36,000	1,50,000	4,55,000
Ballast	30,000	55,000	15,000	50,000	1,50,000
Stations and Buildings ...	5,000	7,000	3,000	...	15,000
	3,54,000	2,34,000	60,000	2,50,000	8,98,000
ESTABLISHMENT					2,23,000
PLANT					1,00,000
SLEEPERS					3,50,000
STORES FROM ENGLAND					7,00,000
ADD OUTLAY INCURRED ON SURVEY OPERATIONS BY OFFICERS OF THE B. B. R. COMPANY, TO BE ADJUSTED IN 1870-71, AND ABOUT WHICH SEPARATE ORDERS WILL BE ISSUED					4,07,000
TOTAL ...					26,78,000
ADD PROBABLE OUTLAY ON ROLLING-STOCK— IN INDIA				2,50,000	
IN ENGLAND				2,15,000	
					4,65,000
TOTAL ...					31,43,000

ORDER.—Ordered, that this Resolution be communicated to the Government, North Western Provinces, for information and guidance, and to the Financial Department for information.

PUNJAB STATE RAILWAY BUDGET ORDERS.

No. 116—17, dated 4th March, 1870.

RESOLUTION—By the Govt. of India, P. W. Dept.

Read—

Letter from Joint Secretary to Government, Punjab, Public Works Department, Railway Branch, No. 407 S, dated 24th January 1870, submitting Budget-Estimate for 1870-71.

PUNJAB NORTHERN RAILWAY.

The proposed appropriation for "Construction of Line" and "Stations and Buildings," amounting to Rs. 26 lakhs, appears somewhat excessive, and is reduced to Rs. 18 lakhs as follows :—

	Rs.
Amount of estimates sanctioned by Government of India	7,75,000
Add for three bridges	4,00,000
Total ...	11,75,000
Less probable outlay in 1869-70	5,75,000
Ballance to be spent in 1870-71	6,00,000
Add for large bridges	8,00,000
Add for line beyond Jhelum	4,00,000
	18,00,000

2. On the other hand, the estimate for "Ballast and Permanent-way," Rs. 14,50,000, may be increased to Rs. 23 lakhs as follows :—

		Rs.
*Sleepers ... 5,00,000	Aggregate of amount sanctioned ...	17,00,000
Ballast ... 3,00,000	Less probable outlay in 1869-70 ...	*8,00,000
8,00,000	Balance to be spent in 1870-71 ...	9,00,000
	Add freight up-country for rails, &c., for 100 miles	6,00,000
	Add for line beyond Jhelum—	
	Ballast	1,00,000
	Sleepers	6,00,000
	Add for freight of stores from England payable in India	1,00,000
		23,00,000

3. Rupees 3½ lakhs for Electric Telegraph and Rolling-stock, are disallowed. The telegraph will be constructed by the Government Telegraph Department, the rolling-stock by a separate agency, regarding which special provision will be made (see para. 13). The grant for Plant is reduced from 3 to 2 lakhs.

4. The amount entered for Stores, Rs. 1,38,716, is passed for Rs. 1,00,000. To this amount must be added the probable expenditure in England on account of stores, for which a sum must be arbitrarily taken. Most of the permanent-way material already ordered is likely to be paid for within 1869-70. Some of the girders for large bridges ought to be shipped next cold season, while some small girders have been recently indented for, and it is probable that there will be some more permanent-way to be ordered. Though much of this material will not be required until 1871-72, payments on account of it, as also for station machinery, are likely to be made in England during 1870-71. The aggregate of such payments may be estimated to amount to Rs. 10 lakhs.

	Rs.	Rs.
5. Under Establishment, the estimate amounts to ...		5,61,284
and is reduced as follows :—	Rs.	
Appropriation of ... ... for portion of pay of Consulting Engineer, and his Establishment, which must be provided for from the Ordinary grant.	8,832	
Excess amount in estimate for salaries of Engineer Establishment, which have been entered at the proposed rates of pay, instead of the rates sanctioned	24,000	
Further reduction to make the grant an even one	3,452	36,284
Net amount of estimate		5,25,000

6. It is to be understood that, although the estimate for establishment is passed for Rs. 5¼ lakhs, this does not permit of expenditure being incurred unless otherwise properly sanctioned.

INDUS VALLEY LINE.

7. For preliminary expenses the amount provided is Rs. ¼ lakh. This is increased to Rs. 5 lakhs to provide for the adjustment of the expenditure incurred up to end of 1867-68 on the Indus Valley Survey by Officers of the Sindh Railway Company. Separate orders will be issued as to the manner in which this expenditure should be adjusted.

8. The proposed grant for purchase of land amounts to Rs. 4¾ lakhs. On this line land will be, as a rule, very cheap, and it may be doubted whether the whole can be paid for within the year even if taken up. The amount is therefore reduced to Rs. 1 lakh.

9. Under "Ballast and Permanent-way" the amount is reduced to Rs. 2 lakhs, and is allowed chiefly to meet demands that may be made by the Sindh Forest Department for sleepers.

10. It is improbable that sanction can be given in time for much work on this line during the year, as the Secretary of State has to be referred to before the project is commenced. Three lakhs is therefore considered sufficient for "Construction of Line" and "Stations and Buildings," instead of four lakhs as estimated for.

11. The provision made for Electric Telegraph is disallowed, while that for Plant is reduced to Rs. one lakh, and that for Stores to Rs. ¼ lakh. This is exclusive of stores from London, for which no provision need be made in 1870-71.

12. The estimate for Establishment is passed for an even sum of Rs. 2,00,000.

SUMMARY.

13. The following is an abstract of the estimate as modified by the foregoing orders :—

	Punjab Northern Railway.	Indus Valley Line.	Total.
	Rs.	Rs.	Rs.
Preliminary expenses	...	5,00,000	5,00,000
Purchase of land	25,000	1,00,000	1,25,000
Construction of Line	18,00,000	3,00,000	21,00,000
Stations and Buildings			
Ballast and Permanent-way	23,00,000	2,00,000	25,00,000
Plant	2,00,000	1,00,000	3,00,000
Stores	1,00,000	25,000	1,25,000
Stores from England	10,00,000	...	10,00,000
Total ...	54,25,000	12,25,000	66,50,000
Establishment	5,25,000	2,00,000	7,25,000
Total ...	59,50,000	14,25,000	73,75,000
Add probable outlay on Rolling Stock—			
In India		7,50,000	
In England		7,25,000	
			14,75,000
Total			88,50,000

14. It has to be noticed that, except under Establishment, no details have been given shewing how the several estimates have been made up.

Order.—Ordered, that this Resolution be communicated to the Government of Punjab, for information and guidance, and to the Financial Department for information.

HYDERABAD STATE RAILWAY BUDGET ORDERS.

Nos. 118—20 A—R., dated 4th March, 1870.

RESOLUTION—By the Govt. of India, P. W. Dept.

Read—

Letter No. 160, dated 31st December 1869, from Secretary to Resident, Hyderabad, submitting Estimates for 1870-71.

Hyderabad Railway.

Resolution.—Under arrangements in course of progress, it is probable that the cost of this Railway will be defrayed by the Government of the Nizam. The estimate submitted is passed for Rs. 5 lakhs as per margin. Separate orders will be issued as to the precise manner in which the expenditure incurred should be adjusted.

	Rs.
Establishment	96,000
Works	4,04,000
	5,00,000

Oomrawuttee Branch Railway.

2. The estimate of expenditure, amounting to Rs. 2,80,000, is passed for Rs. 2,50,000 as follows, subject to sanction being accorded to the prosecution of the works. The expenditure is debitable to the Berar Revenues :—

	Rs.
Establishment	34,200
Less excess sum entered herein for share of Office of Account	1,300
	32,900
Passed for	33,000
Works	2,17,000
	2,50,000

Khamgaon Branch Railway.

3. The estimate of expenditure is as follows :—

	Rs.
Maintenance	20,000
Working expenses	20,000
	40,000

4. The first amount appears excessive, and is reduced to Rs. 10,000, which will give Rs. 1,200 per mile for the first year. The amount should however be treated as a charge under working expenses, as although the item in other Railways is commonly treated as a capital charge for the first year, it need not be so treated with this branch.

5. For working expenses also the estimate appears excessive. The line is to be worked by the Great Indian Peninsula Railway at a train mileage rate, and this charge should not amount to more than Rs. 15,000 yearly, with an average of a train each w[illegible]ily. Allowing for more trains in the busy season, less will

probably be needed at the slack season. Hence the working expenses may be taken at Rs. 25,000, including Rs. 10,000 for maintenance, thus leaving the net revenue at Rs. 15,000, the gross revenue being Rs. 40,000.

SUMMARY.

6. The following is an abstract of the grant for 1870-71 as modified by the foregoing orders :—

	Foreign State.	Berars.	Total.
	Rs.	Rs.	Rs.
Capital outlay.			
Establishment	96,000	33,000	1,29,000
Construction of line	4,04,000	2,17,000	6,21,000
Total ...	5,00,000	2,50,000	7,50,000
Revenue Account.			
Khamgaon Branch			
Maintenance	...	10,000	10,000
Working expenses	...	15,000	15,000
Total ...	...	25,000	25,000
Gross Revenue	...	40,000	40,000
Net Revenue	...	15,000	15,000

ORDER.—Ordered, that this Resolution be communicated to the Resident, Hyderabad, for information and guidance, and to the Financial and Foreign Departments for information.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

STANDARD RAILWAY TIME.

Nos. 604—13 R., dated 5th April 1870.

RESOLUTION—By the Govt. of India, P. W. DEPT.

READ—

A telegram from the Government of Bombay, dated 28th March 1870.

RESOLUTION.—A junction having been effected of the two trunk Railways between Bombay and Calcutta, the Bombay Government have proposed that, as Madras is the only Government Observatory in India, its time shall be adopted on these lines.

2. Jubbulpoor time is now in use on the system of the East Indian Railway, as well as on Railways connected with it. It is said to be 32 minutes later than Calcutta time, but is more correctly 34 minutes 6 seconds; Madras time is 32 minutes 49 seconds later than Calcutta. Practically, Madras and Jubbulpoor times are identical and the proposed change, if approved, would scarcely affect the Railway system of Northern India.

3. The Telegraph Department uses Madras time, and should therefore be in a position to give the true Madras time at any Station where there is a Government Telegraph Office. Its adoption would have the advantage of being fairly convenient to Calcutta, Bombay and Lahore, and therefore to the included area, whilst to Madras itself as one of the great cities of India, it would necessarily be acceptable. It would further be convenient when through Railway communication is established between Madras and Bombay, which may be looked for in the course of a few months.

4. The Governor General in Council is accordingly pleased to approve of the adoption of Madras time on the Great India Peninsula Railway, and to desire that the time in use on the East Indian Railway and on the Railways connected with it may be modified at an early date to the same standard. For this purpose, Madras time may, as in the Telegraph Department, be considered 33 minutes later than Calcutta time, and the change will be only one minute on the Railways of Northern India.

ORDER.—Ordered, that this Resolution be communicated to the Governments named in the margin for information and communication to the Railway Authorities concerned.

Bombay. | Punjab. | Bengal. | Oudh.

Also to the Governments and Administrations marginally noted for information.

Madras. | Central Provinces, | Hyderabad. | N. W. P. | Mysore. | Central India.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

PROTECTION FROM HEAT OF PASSENGERS AND SERVANTS OF RAILWAY COMPANIES IN TRAINS DURING THE HOT SEASON.

Nos. 614—23 R., dated 5th April 1870.

RESOLUTION—By the Govt. of India, P. W. DEPT.

RESOLUTION.—The Governor General in Council desires that the attention of the officials of the several Railway Companies may be immediately invited to the urgent necessity for endeavouring by every measure in their power to render travelling during the hot season less trying and dangerous, especially to those who are not natives of India, including their own servants, the guards, drivers and firemen, who are necessarily exposed to the worst heat.

2. It is believed that on the East Indian Railway the addition of a double roof to the third class carriages has been found to reduce the temperature somewhat when the vehicles are not in motion, and that this improvement has either been, or is being, applied to the whole stock. The first and second class vehicles have all along had this advantage, and it is evident that something more is wanted to reduce the risks encountered by Europeans in travelling even in those carriages. One obvious improvement would be the fitting of *tatties* to the windows with appliances for watering them, and the Governor General in Council trusts that it is only necessary for him thus to draw attention to the matter to ensure immediate steps being taken to provide first and second class carriages with this means of keeping down the extreme temperature that must otherwise prevail in Railway carriages in most parts of India during the hot months. There is no time to lose if this advantage is to be secured during the season just commencing.

3. The Governor General in Council has no reason to suppose that the Companies would desire to make any extra charge for this convenience, and it does not appear that the supply of the *tatties* and the arrangements for keeping them moist need be productive of much expense. But His Excellency in Council considers that no objection should be made to the demand by the Railway Companies of a reasonable extra payment from those who desire to avail themselves of the means of comfort thus placed within their power, rather than there should be any hesitation or delay on the part of the Companies in acting on this suggestion.

4. But while His Excellency in Council thus advocates the interests of the public, he is not less mindful of the severe trial which the running and working of every train must prove to the working staff during the hot weather months, and especially to the drivers and firemen. How far the cabs of the locomotives may be improved to ward off the effects of the sun from those who, in addition, have to bear the great heat inseparable from their position on the engine, without interfering with their efficiency, is deserving of the most careful investigation of the departmental officials. The prudence of subjecting the drivers and firemen to the effect of a *tatty* may perhaps be questioned, but it would seem desirable at least to try its effect experimentally, as well as to endeavour to devise some other means by which

the temperature may be kept down. For the guards, a tatty fitted to the brake-vans would be a simple expedient.

ORDER.—Ordered, that this Resolution be communicated to the Governments and Administrations marginally noted, for immediate attention and needful action.

Bengal.
Punjab.
Oudh.

Also, to the Governments of Madras and Bombay for information and such further action as the circumstances of the climate of those Presidencies may call for.

Also, to the Government, North Western Provinces, the Chief Commissioners of the Central Provinces and Mysore, the Resident at Hyderabad, and the Governor General's Agent, Central India, for information.

Printed and Published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 16 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, APRIL 23, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

HOME DEPARTMENT.

SEARCH FOR COAL IN THE CHANDA DISTRICT OF THE CENTRAL PROVINCES.

From T. OLDHAM, Esq., LL.D., Superintendent, Geological Survey of India, to the Secretary to the Government of India, Home Department,—No. 661, dated Calcutta, the 28th March 1870.

I HAVE the honor to submit, for the information of His Excellency the Governor General in Council, the additional information obtained during the past week or ten days relative to the search for coal in the Chanda District.

2. Carrying out the systematic exploration to the North, a bore-hole was put down near the village of Majri. As already stated (my letter No. 649, dated 19th instant), I had no confident expectation of finding coal there, but there was a chance which it was desirable to test. This chance has not proved favorable. The boring has struck the rocks below the coal at about 100 feet from the surface, and has consequently been stopped. Another bore-hole has been commenced further to the South-West, where it is possible the remarkable overlapping of the successive series of rocks may be avoided. The result shall be communicated as soon as known.

3. A boring has also been put down near the village of Koonara, which has been carried through a good thickness of carbonaceous shale (26 feet) but no coal, and it is probable from the last report that this too has reached the rocks below the coal. To test this fully, a few days more will be required.

4. The boring to the North of Jonara is progressing, but is tedious owing to the necessity for piping the hole from the presence of soft clays which press into the boring and clog the hole.

5. The most important facts ascertained, however, have been arrived at by Mr. Hughes in the course of the detailed geological examination. It appears that a very large portion of the surface of the country to the North is covered with trap-rocks of varying thickness. This trap area, which has its highest elevation in the hill near Dongurgaon, stretches over the whole country lying West of that village to the River Wurdah. The village of Nundoree Kulan is just on the Southern edge of this trappean area. Wurrora town is well on it, also the village of Kulungoham (Kurngaon), Talanah (Tarana), Ashtee, Mardha, and Wanoja, also North of Wurrora, the village of Mohballa, Chinoora, Niensurra, and Ainsa (Yainsa).

6. Saimbal (Saimbar), also four miles to the South of Wurrora, is probably on it, but no sections are there visible, that is, the trap-rocks cover an area of more than 30 square miles.

7. The important bearing which the existence of this great spread of trap has on the capabilities of the Chanda District as a coal-yielding area, will be evident. It cannot of course be asserted that the coal-bearing rocks do not extend under this newer series; but the question as to where they may so exist, or whether at all, is one of such utter uncertainty, and the probable depth below the surface at which, if they do exist at all, they would be found, is also so beyond calculation, that I think the entire of this area covered by trap-rocks may safely be rejected or left out of any estimate, if attempting to sum up the amount of coal now available in the District. Indeed, there is no reason why this area should not be set aside with quite as little hesitation as the more extended area covered by trap-rocks to the North. It may be added that in addition to the impossibility of saying how deep or how shallow the coal-bearing rocks may be under these trap flows (assuming for the moment that they exist), there is the now established fact that the successive groups of beds all largely overlap each other. The Talchirs, below all the coal, are widely overlapped by the Barákar beds, in which the coal occurs, and these again by the lower group of the so-called Kampti beds, which are again overlapped to a grant extent by the upper group or Panchets. And the only reliable indications of coal in the District are those beds of the Kampti, or the peculiar nodular sandstones and beds of the Barákar group. *Neither of these are seen in the area indicated as occupied by the trappean rocks,* so that I believe it would be impossible to give any reliable opinion as to the depth at which coal might be found, or whether it would be found at all. So very uncertain, therefore, would be the result, that I am satisfied this area ought to be left entirely out of calculation at the present. When the District has been more fully opened out or worked, it may be tested; at present it would be simply waste of time and money where coal is known to be more accessible at many other points.

8. I have therefore to state that I believe a sufficiently full and satisfactory answer can now be given to the important question of the most Northerly point at which coal may be justly looked for. Mr. Hughes has carefully gone over the ground in continuation of the examinations which we were carrying out together at the commencement of the month; and the result is that coal *may* exist on the left bank of the Wurdah River for a distance of about four miles to the North of the village of Koonara, and within an area extending for a breadth of about two miles, parallel to the Wurdah. There is at the same time good reason to suppose that much of the coal has been here, as elsewhere, washed away; for instance, Rargao (Bailgaon) village stands on land which was undoubtedly a former bed of the river, and Patalla is probably in the same category; all which facts combine to diminish the probable area under which coal will ever be found on the Chanda side of the Wurdah, and of course to diminish also the probable amount of coal there available. The small area alluded to above as the only part likely to yield coal is now being rapidly proved, and I shall have the honor of submitting the results as soon as known.

No. 17 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, MAY 7, 1870.

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GOVERNMENT OF INDIA.

FINANCIAL DEPARTMENT.

EXPENDITURE ON ACCOUNT OF EDUCATION IN BENGAL.

Resolution by the Government of India, Financial Department, No. 2296, dated Fort William, the 31st March 1870.

Read again Resolution No. 3233, dated 8th September 1869.

Read docket from the Home Department, No. 61, dated 2nd February, with enclosure, forwarding a reply by the Government of Bengal to the above Resolution.

RESOLUTION.—In the report now received from the Home Department, the Government of Bengal complains of the terms of the Resolution of the 8th of September, and controverts some of the assertions that it contains.

2. The object of that Resolution was generally to invite attention to the large expenditure in Bengal for giving an advanced education to classes of the population who, it was believed, might be expected to provide for their own education, and had ample inducements to do so, without much, if any, pecuniary assistance from the State. Considering the very limited funds available for the development of education, and the urgent importance of expending whatever money can be allotted by the State for this object in the most economical manner, the Government of India invited the Government of Bengal to enquire whether the time had not come, and whether means could not be found, for setting free some of the funds now devoted to high English education.

3. The Government of Bengal appears to have regarded this invitation as indicating disapproval of the principle upon which the Educational Department is administered in the Lower Provinces.

4. It is urged, in the first place, that to take cognisance only of the imperial income and expenditure on account of education in Bengal, without at the same time referring to the

sums raised and spent by the Local Government which do not appear in the imperial accounts, is calculated to lead to inferences unfair to the people of Bengal, and injurious to the cause of education there.

5. The Government of India regrets that the Government of Bengal should have deduced from the Resolution of September inferences in no way intended by the Governor General in Council. That Resolution had reference only to the effect of the expenditure for education in Bengal upon the imperial finances, and it would not have been consistent with its object to add to the figures which showed this effect any local revenues or expenditure. Doubtless, no complete opinion can be formed of the progress of education in Bengal without taking as much note of local as of imperial income and expenditure upon it; and any account of the operations of the Educational Department which excluded local income and expenditure would be wholly unsatisfactory. But it does not follow that it was improper in the Resolution of September to deal with the imperial receipts and expenditure only; for the Government of India was considering nothing else. It is very desirable that all possible misunderstanding on this point should now be removed.

6. Further, the Government of Bengal urges that it is a mistake to suppose that "the bulk of the State expenditure for education in Bengal is for *high English education*," and asserts that not more than about £54,000 is so spent. The Resolution of September stated only the general impression of the Government of India based upon the imperial accounts, in which the classification of educational expenditure is not very detailed. Dividing the imperial educational expenditure, so far as the imperial accounts furnish the means of doing so, between English and Vernacular education, and distributing the expenditure not susceptible of classification rateably between these two heads, the Government of India find that more than three-fourths* of the gross imperial expenditure on education in Bengal in 1868-69 was on account of English education. Calculated in the same way, the earlier figures exhibit a still larger proportion of the expenditure as devoted to English only. The Governor General in Council acknowledges that the opinion expressed by him agrees very much with this figured result.

* The exact figures are £150,768 out of £200,089, or 75·35 per cent.

7. He is, however, glad to find from the educational section of the Administration Report of the Lower Provinces for 1868-69 (*vide* abstract in the appendix) that a much larger proportion of the unclassified expenditure than was supposed is on account of Vernacular education. Dividing the figures on pages 216 and 217 of that report between English and Vernacular, and distributing the charge for direction, inspection, and miscellaneous rateably between the two, the Governor General in Council finds that £92,492 were spent upon English, and £59,234 on Vernacular education, being in the proportion of about 60·96 and 39·04 per cent., respectively.

8. The difference between these figures and those given by the Government of Bengal arises probably from that Government attempting to distinguish between *high* and *other* English education. It is scarcely possible to make this distinction upon any satisfactory basis; and for the purposes with which the Government of India recorded the Resolution of September 1869, all English education must be classed as high.

APPENDIX.

Bengal Administration Report for the year 1868-69.

EDUCATION.

Higher Education—	Rs.	Rs.	
Government Colleges affiliated to the University in Arts ..	1,91,456		
Private ditto ditto ...	25,720		
Higher and Middle Class Government English Schools ...	2,29,730		
Ditto private ditto ...	2,00,334		
Ditto ditto for girls	18,673		
Scholarships in Government Colleges	60,282		
		A	7,26,195
Proportion of		C	1,98,727
	Rs.		9,24,922 or
			£92,492
			60·96

Vernacular Education—	Rs.	Rs.	
Government Vernacular and Lower Schools	67,807		
Private ditto ditto	1,86,939		
Ditto ditto for Natives	37,153		
Government Normal Schools	1,15,219		
Private ditto ditto	9,336		
Government Scholarships tenable in Schools	48,411		
Endowed ditto ditto	202		
		B	4,65,067
Proportion of		C	1,27,268
	Rs.		5,92,335 or
			£59,234
			39·04
Direction	45,075		
Inspection	2,48,240		
Miscellaneous	32,680		
		C	3,25,995
Special—			
Law, Medicine, and English Colleges	1,26,985		
Government Madrissas	17,731		
,, Schools of Medicine	45,385		
School of Art	19,088		
Ditto (special)	1,000		
Special Arabic, Sanscrit, Medical, and Engineering ...	27,544		
			2,37,733
Total ...			17,54,990

9. The principle which the Government of India had in mind in the Resolution of September applies alike to all English education, viz., this, that the motives which induce the people to seek it are *primâ facie* sufficient for its rapid development without any contribution from the imperial finances. It is notorious that the same assertion can by no means be made in regard to Vernacular education. It may, it is believed, truly be said, in respect even to the most intellectually-advanced Provinces of India, such as Bengal, that the desire for Vernacular education, or, as might distinctively be said, for education in order to develop the intellectual powers, apart from the immediate purpose of securing material advantages, is so low as perhaps hardly to exist. It is undeniable that in this form education needs, and ought to receive much artificial stimulus and encouragement.

10. The Government of India is glad to perceive that though dissatisfied with the terms of its Resolution, the Hon'ble the Lieutenant-Governor and the Director of Public Instruction admit the practicability of gradually, and with discretion, increasing the contributions of those who receive from the State, or by its aid, an English education.

11. The Governor General in Council is of opinion that this should be kept constantly and prominently in view, and that it should be, in accordance with the views expressed by successive Secretaries of State, the constant aim of the Supreme and the Local Governments, co-operating cordially together, to reduce to the utmost the charge upon the State for English education with a view to render it as self-supporting as possible.

ORDERED, that a copy of this Resolution be forwarded to the Home Department for communication to the Government of Bengal.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

IRRIGATION OPERATIONS OF FUSL RUBBEE IN THE NORTH-WESTERN PROVINCES UP TO 28th FEBRUARY 1870.

Canal Divisions.	Water distributed during February 1870: Depth in Canal at Regulating Gauge. Full supply, feet.	Actual throughout, feet.	Gross Consumption, Cubic Feet per Second. Estimated full discharge.	Actual average throughout.
Ganges Canal. Northern ..	9·00	8·02		373
Meerut ..	6·80	6·72		1,318
Futtehgurh ..	6·50	5·92		407
Boolundshuhur ..	5·75	5·24	5,585	285
Allygurh ..	6·00	4·88		766
Etawah ..	4·80	2·50		712
Cawnpore ..	6·00	3·60		642
			Total ..	4,503
Eastern Jumna Canal	..	3·32	..	618
Doon Canals ..	..	..	..	117
Rohilkhund Canals ..	..	..	..	380
Total ..	..	..	..	5,618

Navigation Return, Ganges Canal. Nature of Traffic.	Up. Mds.	Up. No.	Down. Mds.	Down. No.	Total Up and Down. Mds.	Total Up and Down. No.
Grains—						
Wheat ..	..	..	408	..	408	..
Gram ..	176	..	..	..	176	..
Oorud ..	1,836	..	..	..	1,836	..
Rice ..	2,054	..	..	..	2,054	..
Muckha ..	1,350	..	..	..	1,350	..
Moong ..	2,002	..	..	..	2,002	..
Jowar ..	830	..	..	..	830	..
Urhur ..	137	..	..	..	137	..
Atta ..	552	..	..	..	552	..
Kootoo ..	..	..	16	..	16	..
Total ..	8,937	..	424	..	9,361	..
Cotton ..	..	..	20,901	..	20,901	..
Oil-seeds ..	449	..	60	..	509	..
Salt ..	..	..	200	..	200	..
Metals ..	1,454	..	1,954	..	3,408	..
Building materials ..	1,357	..	28,410	..	29,767	..
Miscellaneous goods ..	3,150	..	6,341	..	9,491	..
Fire-wood ..	..	..	52,254	..	52,254	..
Bamboos ..	..	19,260	..	81,551	..	100,811
Bullees, &c. ..	..	..	..	7,533	..	7,533
Kurrees ..	..	144	..	4,707	..	4,851
Logs ..	..	..	..	617	..	617
Miscellaneous timber ..	..	2,191	..	658	..	2,849
Passengers ..	..	..	..	167	..	167
Total ..	15,347	21,595	110,574	95,233	125,921	116,828

Land Irrigated (approximate). Zillah.	Acres.
Saharunpore ..	46,503
Mozuffernuggur ..	69,759
Meerut ..	122,225
Boolundshuhur ..	41,661
Allygurh ..	45,329
Muttra ..	12,439
Agra ..	654
Etah ..	14,733
Mynpoorie ..	21,265
Futtehgurh ..	6,376
Etawah ..	26,113
Cawnpore ..	40,969
Dehra Doon ..	5,500
Bijnour ..	191
Terai ..	510
Bareilly ..	4,105
Jhansie ..	971
Humeerpore ..	498
Total ..	459,801

Rain-fall. Total from 1st October 1869 to 28th February 1870.	Average of nine previous years for the same period.
1·1	3·1
0·8	2·1
1·4	1·4
4·0	1·3
7·0	2·1
1·5	0·9
5·1	0·8
7·8	0·7
3·1	2·2
5·8	1·4
10·3	1·8
4·5	1·8
4·7	4·9
4·0	2·3
6·3	4·5*
4·9	2·0
4·8	2·1
6·3	1·2
..	..

Remarks.

The mean volume of the Ganges Canal passing the Roorkee gauge during the month, was 4,770 cubic feet.

The volumes discharged by the canal were as follows:—

Tail, Etawah Branch	..	38 cubic feet.
Escapes ,, ,,	..	20 ,, ,,
Tail, Cawnpore ,,	..	209 ,, ,,
Escapes ,, ,,	..	*Nil.*
Total	..	267 ,, ,,

The Cawnpore and Etawah Branches have alternate weeks of high and low supply. The gauge readings show the mean of the month.

At the commencement of the month a demand for water was experienced, which steadily increased to the close of the month. In the latter part of the month the demand was very great indeed, and at the close of the month large areas still remained that had not received their first or *kor* watering.

The average supply of the Eastern Jumna reached in this month a very low ebb, and was quite unequal to the demand. Some loss is anticipated in the Meerut District. Bunds are now necessary in the canal, and zillahs are alternately *tateeled*. Some little relief was obtained from a fall of rain on 12th and 13th, chiefly in the Northern part of the canal.

Kulsea rain-gauge	..	= 1·20″
Bhainswal	..	= 0·20″

It will be observed that the rain-fall in Saharunpore and Mozuffernuggur is below the average; in other Districts it is considerably above the average. In the Doon there was a fair demand for water when cloudy weather did not raise an expectation of rain.

* Average for five years only: rain-fall previous to 1864 not given.

ALLAHABAD;
The 23rd March 1870.

W. G. ROSS, *Lieut., R.E.,*
Asst. to Chief Engineer, Irrigation Works, N. W. P.

IRRIGATION OPERATIONS OF FUSSL RUBBEE IN THE PUNJAB UP TO 31st JANUARY 1870.

Canal Division.	Water distributed during January: Depth in Canal at regulating guages. Full supply.	Actual throughout January.	Gross consumption, cubic feet per second. Estimated full supply.	Actual average throughout January.	Navigation Return Canal. Principal items of Traffic. Up.	Down.
1st Division	4·9	.....	.....	.....	...	.....
2nd ,, Main Branch Lower ...	4·6	.....	.....	.....	...	.....
,, ,, Lahore Branch ...	3·3	.....	3,073·6	.....	...	.....
Total, Baree Doab Canal ...	.....	.....	.....	.....	...	.....
Kurnaul Division	4·33	3·35	.....	308·28	...	1,056 mds. firewood, 121,047 kurries, planks, &c. ...
Delhi ,, ...	4·4	3·43	.....	595·83	...	
Hansi ,, ...	8·8	7·20	2,546	542·00	...	
,, Bulla Head	8·4	6·90	.....	229·00	...	
Total, Western Jumna Canal ...	.....	.....	.....	.....	...	.....
Upper Sutlej Division	.....	.....	.....	.....	...	.....
Lower Sutlej and Chenab ...	.....	.....	.....	.....	...	.....
Indus Canals	.....	.....	.....	.....	...	.....
Total, Inundation Canals ...	.....	.....	.....	.....	...	.....
Delhi and Goorgaon Works ...	.....	.....	.....	.....	...	.....
Total, Delhi and Goorgaon Works	.....	.....	.....	.....	...	.....
Grand Total ...	.....	.....	.....	.....	...	1,056 mds. firewood and 121,047 kurries, &c.

Land Irrigated (approximate). Zillah.	Acres.
Goordaspoor ...	14,414
Umritsur ...	34,314
Lahore ...	20,363
.....	69,091
Umballa ...	1,392
Kurnaul ...	43,778
Delhi ...	42,841
Rohtuck ...	32,404
Hissar ...	32,377
Jheend ...	17,059
Bikaneer ...	522
.....	170,373
.....	12,063
.....	21,400
.....	33,900
.....	67,363
Delhi ...	565
Goorgaon ...	2,225
.....	2,790
.....	309,617

Rain-fall. Average.	During month.	Chief Crops—approximations. Name.	Area in acres.	Remarks.
1·42	·73	Barley ...	4,766	
·78	·00	Mixed grain	8,288	Canal closed during the month for repairs.
...	·00	Wheat ...	45,903	
		Other crops	10,134	
...	...	.....	69,090	
...	...	Barley ...	7,958	
...	...	Mixed grain	12,974	141·50 feet per second passed down the Bhoodakhera Escapes.
2·9	...	Wheat ...	143,309	
3·1	...	Other crops	6,132	
...	...	.....	170,373	
...	...	Wheat ...	34,000	The areas entered as irrigated by inundation canals are very rough approximations, there being no Revenue Establishment as in perennial canals.
...	...	Other crops	33,363	
...	...	.....	67,363	
...	...	Barley ...	690	
...	...	Wheat ...	2,100	
...	...	.....	2,790	
...	...	.....	309,617	

LAHORE;
The 4th April 1870.

W. BROADFOOT, *Lieut., R.E.,*
Asst. Secy. to Govt., Punjab, Irrigation Branch.

IRRIGATION OPERATIONS OF FUSSL RUBBEE IN THE PUNJAB UP TO 28th FEBRUARY 1870.

Canal Divisions.	Water distributed during February.				Navigation Return Canal.		Land irrigated (approximate).		Rain-fall.		Chief crops—approximations.		Remarks.
	Depth in Canal at regulating guage.		Gross consumption, cubic feet per second.		Principal items of Traffic.								
	Full supply.	Actual throughout February.	Estimated full supply.	Actual average throughout February.	Up.	Down.	Zillah.	Acres.	Average.	During month.	Name.	Area in acres.	
1st Division	4·9	3·21	3,073·6	777·65	...	.....	Goordaspoor ...	16,875	2·99	0·50	Barley ...	5,752	127·22 cubic feet per second escaped.
2nd „ Main Branch Lower ...	4·6	2·60	.....	668·74	...	.....	Umritsur ...	39,887	·69	...	Mixed grain	9,602	
„ „ Lahore Branch ...	3·3	2·59	.....	522·25	...	.....	Lahore ...	25,060	...	...	Wheat ...	55,029	
											Other crops.	11,439	
Total, Baree Doab Canal ...	.....	.....	.....	1,968·64	...	.....	... .	81,822	...	...	.....	81,822	
Kurnaul Division	4·33	3·21	2,546	274·93	...	1,240 mds. fire-wood, 8,850 mds. timber, &c., and 1,66,429 bullies, kurries, &c.	Umballa ...	2,480	1·98	0·7			
Delhi „	4·4	3·55	.....	650	...		Kurnaul ...	49,063	0·49	0·5			
Hansi „	8·8	7·20	.....	542	...		Delhi ...	50,031					
„ Bulla Head	8·4	6·90	.....	229	...		Rohtuck ...	33,611	2·9	...	Barley ...	8,377	
							Hissar ...	32,377	3·1	...	Mixed grain	13,325	
							Jheend ...	17,059	...	...	Wheat ...	156,323	
							Bikaneer ...	522	...	...	Other crops.	7,118	
Total, Western Jumna Canal ...	.....	.....	.....	1695·93	...	10,090 mds. fire-wood, and 166,429 kurries, &c.	.....	185,143	...	...	.....	185,143	
Upper Sutlej Division	.....	.....	.....	.....	...	.....	.....	12,063	...	...	Wheat ...	34,000	The areas estimated as irrigated by inundation canals are very rough approximations, there being no Revenue Establishment as in perennial canals.
Lower „ „	.....	.....	.....	.....	...	.....	.....	21,400	...	...	Other crops.	33,363	
Indus Canals	.....	.....	.....	.....	...	.....	.....	33,900					
Total, Inundation Canals ...	.....	.....	.....	.....	...	.....	.....	67,363	...	...	.....	67,363	
Delhi and Goorgaon Works ...	.....	.....	.....	.....	...	.....	Delhi ...	565	...	...	Barley ...	526	
							Goorgaon ...	2,225	...	...	Wheat ...	1,700	
											Other crops.	564	
Total, Delhi and Goorgaon Canals	.....	.....	.....	.....	...	.....	.....	2,790	...	...	.....	2,790	
Grand Total ...	.....	.....	.....	.....	...	10,090 mds. fire-wood, &c., and 166,429 kurries, bullies, &c.	.....	337,118	...	...	.....	337,118	

LAHORE;
The 4th April 1870.

W. BROADFOOT, *Lieut., R.E.,*
Asst. Secy. to Govt., Punjab, Irrigation Branch.

COMPARATIVE ABSTRACT OF TRAFFIC ON THE GUARANTEED AND STATE RAILWAYS THROUGHOUT INDIA, FOR THE YEARS 1868 AND 1869.

	East Indian.				Eastern Bengal.		Calcutta and South-Eastern (State) Railway.		Oudh and Rohilkhund.		Punjab.		Delhi.		Madras.				Great Southern-of-India.		Conjeveram Tramway.		Great Indian Peninsula.		Bombay, Baroda, and Central India.		Sindh.		Total of all Lines with the exception of Conjeveram Tramway.	
	Main Line.		Jubbulpore Line.												South-West Line.		North-West Line.													
	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
First Quarter.																														
Total earnings	709,439	540,974	30,924	20,244	43,006	38,345	2,238	2,412	5,780	5,795	29,540	23,327	30,726	2,923	94,823	91,150	23,086	22,499	16,346	16,321	1,024	...	499,958	427,676	130,409	107,189	16,804	26,007	1,633,079	1,324,862
Mean mileage open	1,131	1,131	223	223	113	113	28	28	42	42	246	246	174	53	492	492	185	153	168	168	19	...	874	862	307	306	107	109	4,090	3,926
Average receipt per week	54,572	41,613	2,378	1,557	3,308	2,950	172	185	445	446	2,272	1,794	2,363	224	7,294	7,012	1,776	1,731	1,257	1,255	79	...	38,458	32,898	10,031	8,245	1,292	2,000	125,620	101,912
Average receipt per week per mile open ...	48·2	36·8	10·7	6·9	29·2	26·1	6·1	6·6	10·6	10·6	9·2	7·3	13·5	4·2	14·8	14·2	9·6	11·3	7·5	7·5	4·2	...	44·0	38·2	32·6	26·9	12·0	18·3	30·7	25·9
Second Quarter.																														
Total earnings	633,617	542,528	23,757	21,373	38,905	39,373	2,410	1,971	5,139	6,151	27,067	28,820	28,776	3,910	104,692	111,139	35,195	50,332	17,189	17,950	1,659	...	383,013	435,965	122,541	140,955	25,129	32,165	1,448,330	1,432,632
Mean mileage open	1,131	1,131	223	223	113	113	28	28	42	42	246	246	174	53	492	492	185	153	168	168	19	...	874	873	307	306	106	109	4,089	3,937
Average receipt per week	48,739	41,732	1,827	1,644	2,992	3,029	185	151	395	473	2,151	2,217	2,213	301	8,053	8,549	2,707	3,871	1,322	1,382	128	...	29,462	33,536	9,426	10,843	1,933	2,474	111,410	110,202
Average receipt per week per mile open ...	43·1	36·9	8·2	7·3	26·5	26·8	6·6	5·3	9·4	11·3	8·7	9·3	12·7	5·7	16·3	17·3	14·6	25·3	7·8	8·2	6·7	...	33·7	38·4	30·7	35·4	18·2	22·7	27·2	28·0
Third Quarter.																														
Total earnings	491,870	473,978	16,700	15,349	41,689	40,117	1,460	1,583	4,672	5,919	19,966	20,251	23,712	3,622	101,973	91,585	45,503	31,447	17,871	17,354	979	...	202,077	230,337	60,621	46,944	12,519	21,034	1,040,633	999,520
Mean mileage open	1,131	1,131	223	223	113	113	28	28	42	42	246	246	187	53	492	492	204	163	168	168	19	...	873	874	308	306	106	109	4,121	3,948
Average receipt per week	37,836	36,460	1,284	1,180	3,206	3,086	112	121	359	455	1,536	1,558	1,824	278	7,844	7,045	3,500	2,419	1,374	1,335	75	...	15,544	17,718	4,663	3,611	963	1,618	80,049	76,886
Average receipt per week per mile open ...	33·4	32·2	5·7	5·3	28·3	27·3	4·0	4·3	8·5	10·8	6·2	6·3	9·7	5·2	15·9	14·3	17·1	14·7	8·1	7·9	3·9	...	17·8	20·3	15·1	11·8	9·0	14·8	19·4	19·4
Fourth Quarter.																														
Total earnings	628,027	591,677	24,558	28,945	41,245	44,438	1,440	1,951	5,684	6,886	20,130	30,435	46,195	5,642	97,345	108,437	36,402	40,509	11,324	21,754	778	...	340,867	376,618	114,280	114,391	16,377	17,260	1,390,874	1,388,943
Mean mileage open	1,131	1,131	223	223	113	113	28	28	42	42	246	246	271	53	492	492	215	185	168	168	19	...	873	874	308	306	106	109	4,216	3,970
Average receipt per week	48,310	45,513	1,889	2,226	3,173	3,418	111	150	437	529	1,548	2,343	3,553	434	7,488	8,341	2,800	3,116	1,409	1,673	60	...	26,221	28,970	8,791	8,799	1,260	1,327	107,050	106,841
Average receipt per week per mile open ...	42·7	40·2	8·5	9·9	28·0	30·2	4·0	5·3	10·4	12·5	6·3	9·5	13·1	8·1	15·2	16·9	13·0	16·8	8·4	9·9	3·2	...	30·0	33·1	28·5	28·7	11·9	12·1	25·4	26·9
Total for the year.																														
Total earnings	2,462,953	2,149,157	95,939	85,910	164,845	162,273	7,548	7,917	21,275	24,753	96,703	102,833	129,409	16,097	398,833	402,311	140,186	144,787	69,730	73,379	4,440	...	1,425,915	1,470,596	427,851	409,479	70,829	96,467	5,512,916	5,145,957
Mean mileage open	1,131	1,131	223	223	113	113	28	28	42	42	246	246	201	53	492	492	197	163	168	168	19	...	873	871	308	306	106	109	4,128	3,945
Average receipt per week ...	47,364	41,329	1,845	1,652	3,170	3,120	145	152	409	476	1,857	1,977	2,488	309	7,670	7,737	2,696	2,784	1,341	1,411	85	...	27,421	28,280	8,228	7,874	1,362	1,855	106,017	98,860
Average receipt per week per mile open ...	41·8	36·5	8·3	7·4	28·0	27·5	5·2	5·4	9·7	11·3	7·6	8·0	12·3	5·8	15·6	15·7	13·7	17·0	8·0	8·4	4·5	...	31·4	32·4	26·7	25·7	12·8	17·0	25·7	25·1

No. 18 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, MAY 14, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

PROGRESS OF WORKS IN CONNECTION WITH THE ESTABLISHMENT OF THROUGH RAILWAY COMMUNICATION BETWEEN MADRAS AND BOMBAY.

Read the following letter from MAJOR J. H. M. SHAW STEWART, R.E., Consulting Engineer for Railways, Madras, to the Secretary to the Government, Madras, Public Works Department,—No. 79, dated Madras, the 25th February 1870.

I HAVE the honor to submit the following report upon the progress of the works on the North-West Line of the Madras Railway, which I have lately inspected in company with the Agent and Manager and the Acting Chief Engineer.

2. The Government are aware that the line is at present available for traffic as far as Ghooty, to which point it was opened on the 1st August 1869 : the distance from Madras being 258 miles.

3. Beyond Ghooty, the whole of the work on the main line up to the junction with the Great Indian Peninsula Railway at Raichore has been given on contract to Mr. E. W. Barnett, with the exception of the various stations which are being constructed under the charge of the Company's Engineers. The works on the Bellary branch have been given on contract between Balakistnamah Naidoo and Mr. E. M. Ross. The two stations on the branch at Veerapoor and Bellary have also been given to Mr. Ross. The particulars of the various contracts are given in a summary appended to this report.

4. *District XI., Main Line.*—The work on this District has not made good progress of late. According to the terms of the agreement with the contractor, the line should have been completed as far as the Bellary branch junction by the 31st December 1868 ; and there can be no doubt that this would have been accomplished long ago had proper energy been shown by Mr. Barnett. When proceeding up the line, we found that one single thirty feet arch bridge, one double twenty feet arch bridge, and two single twenty feet arch bridges were still unfinished on this side of the junction. In addition to this, a good deal of

heavy rock-cutting had to be excavated. The early opening to the junction was of such importance, and the prospect of further delay seemed so certain, that it was deemed necessary to serve the contractor with the notice required under clauses 12 and 24 of his agreement. I am glad to be able to report that this notice had the desired effect. On our return down the line, we found that the two single twenty feet arch bridges were alone remaining unfinished; and I have now no doubt that an engine will be at the Goondacul junction before the end of March.

The Goondacul Station is making good progress under the energetic superintendence of Mr. Smith, the Resident Engineer in charge. Up to the 31st January, three-fifths of the masonry had been completed. The work is of good quality, and has been executed most economically.

5. *District XIV.*—This District carries the main line Northwards from the Goondacul junction. The work is well advanced: rails are laid over the greater part of the District, and only one-twelfth of the masonry was unfinished on the 31st January. An engine will certainly be able to pass over this District in April.

The Nuncherla Station is in this District, and has only lately been commenced by departmental agency. About one-fourth of the masonry was finished on the 31st January. The rates are considerably below those of Mr. Barnett's contract.

6. *District XV.*—Here the work has not been pushed forward so energetically, and 1,500 cubic yards, being one-fourth of the whole masonry, remained unfinished at the end of last month. It was thought advisable to serve the contractor with a notice for this District also, under clauses 12 and 24 of his agreement. I have no doubt that, with this incentive, the work will be carried on rapidly, and that an engine will be able to traverse the District by the end of April.

The Auspree Station is situated at the Northern extremity of this District. The work has only lately been commenced by the Company's Engineer, and one-fifth of the masonry had been completed up to the end of last month. As at Goondacul and Nuncherla, the rates at which the work is being executed are considerably below those of Mr. Barnett's contract. It was intended that Auspree should be a watering station, and the estimated outlay has been sanctioned; but the situation of the station gives little reason to hope that a proper supply of water will be obtained, and I fear it will be necessary to establish watering arrangements at some point between Auspree and Adoni.

7. *District XVI.*—This District is the most backward of all on this side of the Toongabuddra River. Upwards of 2,800 yards of masonry, nearly one-third of the whole amount, remained unfinished on the 31st January. Here also, as in Districts XI. and XV., it was thought advisable to bring the provisions of clauses 12 and 24 of the agreement into force, and to serve the contractor with the required notice. I understand that the result has been so far favorable that it has not yet been necessary to act upon the notice by supplementing the contractor's labor at his expense. The progress of the work must, however, be watched most carefully from day to day, and immediate action taken upon any backward tendency being shown.

The early completion of the work in this District is a point of very great importance, as upon it depends the possibility of carrying forward the girders for the bridge over the Toongabuddra before the freshes in that river may be expected. With a view to make this result more certain, I have already recommended* the substitution of girders for arches in two of the unfinished bridges on this District. Mr. H. C. West, one of the most energetic Engineers in the Company's service, has been sent to supervise the progress of the work, and I have every hope that an engine will be able to pass over the District in the early part of May.

* In No. 65, dated 16th February 1870.

8. *District XVII.*—The work in this District may be said to be completed. Some 400 yards of masonry remain to be done, but this consists entirely of coping, etc. With the exception of gaps, which cannot be closed over till girders are brought up by rail, an engine could now traverse this District from end to end.

The Adoni Station, which lies within this District, is making rapid progress under Mr. Scott's superintendence. At the end of last month considerably more than half the masonry had been completed.

9. *District XVIII.*—The work in this District has also made excellent progress. Although 1,000 yards of masonry are nominally unfinished, all the bridges are ready for the passage of an engine with the exception of those for which girders must be brought up by rail.

The Kosgee Station in this District is well advanced. It is being carried out under the superintendence of Mr. Jones, the Resident Engineer; and, like all the other stations on the main line, at rates considerably below those of Mr. Barnett's contract. Nearly three-fourths of the masonry were completed at the end of January.

10. *District XIX.*—On this District also the works are well advanced. With the exception of the Toongabuddra Bridge, six-sevenths of the masonry were finished on the 31st January; only 670 yards being then required to complete the District. The only work of any importance unfinished at the time of our visit was a double thirty feet arch bridge, which is probably completed by this time.

The large bridge over the Toongabuddra River, which consists of fifty-eight girder openings measuring each seventy feet from centre to centre, has made good progress since the subsidence of the water in the river. During January upwards of 1,100 yards of masonry were completed, and at the beginning of this month there remained nearly 5,400 yards to be done, being less than one-third of the whole amount. Of the fifty-seven piers, sixteen on the North bank of the river, and ten on the South bank, are finished; the remaining thirty-one piers being more or less advanced towards completion. The work is excellent, and confers great credit on all concerned. Unless prevented by an outbreak of cholera among the work-people, or by unseasonable freshes in the river, I see no reason why the masonry of this bridge should not be completed before the coming monsoon. The Government may rest assured that every effort will be made, both by the Engineer in charge and by the Contractor's Agent, to secure this result. The completion of the bridge will, however, depend upon the date when an engine is able to come up to Adoni, that is to say, upon the completion of the masonry in Districts XV. and XVI. If the girders for the Toongabuddra Bridge can be delivered on the South bank of that river early in May, the temporary tramway across the river bed can be used to transport half of them to the North side, where they can be put together and rivetted during the rains so as to be ready for rolling by the end of the year.

I wish to take this opportunity to bring prominently to the notice of Government the excellent service which has been rendered in connection with the Toongabuddra Bridge by Mr. Robinson, the Resident Engineer in charge of District XIX., a position which he has held for more than four years past. Mr. Robinson has had the supervision of the bridge over the Toongabuddra from first to last; and I attribute entirely to his professional skill, backed by his indomitable energy and perseverance, the admirable masonry which has been used upon this very important bridge. At the commencement of the work, as I have already had occasion to report, considerable difficulty was experienced by Mr. Robinson before he succeeded in obtaining from the contractor masonry of a quality suited to the importance of the bridge; but these difficulties were overcome, and since the commencement of the year 1868 the work has been carried on satisfactorily, and in accordance with the terms of the revised specification which was then drawn up. When the work is completed there will be nearly 18,000 yards of masonry in the bridge, and I believe that every foot will challenge comparison with the best work of the kind in India.

11. *District XX.*—This District has not as yet made much progress; up to the first of this month only one-third of the masonry having been finished. This state of backwardness is not, however, altogether attributable to the contractor, inasmuch as the commencement of the masonry was delayed, owing to the fact that no Engineer was available for supervision; and it was on this plea that sanction* was accorded to the alteration of the date fixed for the completion of the work from 31st December 1869 to 31st December 1870. There is at present little or no masonry being done; the only work now in active progress being the collection of material. It is expected that a large body of masons will be set free from the Toongabuddra Bridge in June, and the work in District XX. will then be pushed on with vigour. The scarcity of water along the greater part of this District renders this course advisable on all grounds.

* *Vide* G. O. dated 2nd April 1869, No. 1075.

The Mutamurri Station lies within this District; but, beyond collecting materials, nothing has yet been done.

12. *Raichore Terminus.*—It will be within the recollection of the Government that the site fixed* on for the station at Raichore was about one and a quarter mile to the North of the point where the Madras and the Great Indian Peninsula Railways join. The letter from the Consulting Engineer to the Bombay Government,† dated the 13th October 1869, will show that a plan was prepared by the Great Indian Peninsula authorities, and that the work was to be put in hand at once by that agency. The plan was objected to by the Madras Railway authorities chiefly on account of the rates which were much above those prevailing on our lines. With a view to reduce the cost of the station, an offer was made that the work should

* *Vide* G. O. 22nd April 1868, No. 1227.

† *Vide* G. O. 9th November 1869, No. 2921.

be undertaken by the Madras Railway agency; and, as will be seen from Colonel Trevor's report* dated the 12th January 1870, this has been agreed to, subject to the approval of this Government. Colonel Trevor explains that, owing to the terms of the agreement with Mr. Bray, it is necessary to select a site on the Madras Railway line. A site, in every respect excellent, has accordingly been chosen by the Acting Chief Engineer of the Madras Railway. It is about a mile South of the point of junction; and, though slightly further from the town of Raichore, is better supplied with water and has gradients more suitable for station purposes. I concur with the Railway authorities in recommending that the station be built on this site; and, if this meets with the approval of the Government, I trust that the construction of the station will now be pushed on rapidly.

* *Vide* G. O. 23rd February 1870, No. 604.

13. *District XI., Bellary Branch.*—The portion of this District which forms part of the Bellary Branch is under four miles in length. The masonry is complete and the line will be ready for the passage of an engine as soon as the Goondacul junction is reached.

14. *District XII.*—The masonry on this District is also finished; and, as soon as girders can be brought up from the Goondacul junction, it will be ready for the passage of an engine from end to end.

The Veerapoor Station is situated within this District, and I regret to say that we found the work progressing at a very unsatisfactory rate. It has been let on contract to Mr. Ross, and the time specified in the agreement expired on the 31st December 1869. Up to the end of January only two-fifths of the masonry had been done. It was thought advisable to give Mr. Ross notice under clauses 12 and 24 of his agreement, and I trust that this measure will have the desired effect.

15. *District XIII.*—This District completes the Bellary Branch; and, with the exceptions of the bridge over the Huggry River and the Terminal Station at Bellary, the work is almost finished.

The Huggry Bridge is to consist of thirty-four openings, each 70 feet from centre to centre, spanned by wrought-iron girders, resting on screw piles. The only masonry is in the abutments, which are now in progress, and in which some 1,200 yards remained unfinished on the 1st instant. The abutment on the East side has a good foundation in clay; but on the West side it was found necessary to sink wells, and, owing to an error in the plan, these were carried five feet too high. The removal of this has caused some delay; but there is plenty of material on the ground, and the work ought to be soon brought to a close. The delay in opening up to the Goondacul junction has thrown the work at this bridge back, inasmuch as the girders and piles must be brought up by engine.

The work at the Bellary Station has not been carried on of late as rapidly as should have been the case. On the 31st January more than half the masonry was unfinished, and, as the time named in the agreement expires on the 31st August, the contractor has as much as he can do to complete his task.

The inquiry into the question of water-supply along the Bellary Branch has not been altogether satisfactory. The town of Bellary has of late years been notorious for scarcity of good water; and, after careful investigation, the attempt to establish watering arrangements for engines has been abandoned. At Veerapoor also the attempt is considered hopeless. It has been therefore proposed to establish a permanent watering place at the Huggry River, eight miles from Bellary, and another at a spot 4½ miles East of Veerapoor Station. Engines will be able to take at the Huggry a supply of water for the double journey to Bellary and back; while an old well on the fort glacis, close to the station enclosure, will give water which, though brackish, will answer for cleaning out engines, &c.

16. It is with great pleasure that I am able to report in most favourable terms upon the quality of the work on the unopened line. I have already drawn special attention to the character of the masonry in the bridge over the Toongabuddra; but throughout the line the work is of a very high average standard, and the instances in which I observed any shortcomings were few and far between. The Government and the Madras Railway Company may both be congratulated on the results which have been secured.

17. In the order of Government dated the 23rd instant, No. 604, I was directed to report upon the present prospects of opening the North-West Line of the Madras Railway to Raichore. In reply, I beg to state that, unless the progress of the work is delayed by some unforeseen occurrence, I have every reason to anticipate the opening of the line to Kosgee during September next, and to Raichore by April or May 1871.

The Bellary Branch ought also to be opened throughout early in 1871.

Summary of the various contracts given out on the North-West Line.

District.	Length in miles.	Date of sanction.	Name of contractor.	Time of completion.
Main Line.				
District XI., section I.	11	7th March 1866	Mr. E.W. Barnett	1st July 1868.
Do. XI. „ II.	7¾	13th March 1867	Do.	31st Dec. „
Do. XIV.	10			
Do. XV.	10			
Do. XVI.	10	20th Nov. 1866 ...	Do.	31st Dec. 1869.
Do. XVII.... ...	10			
Do. XVIII. ...	11			
Do. XIX.	9			
Do. XX.	16¼	10th April 1869...	Do.	31st Dec. 1870.
Bellary Branch Line.				
District XI., section II.	4	13th March 1867	Balakistnamah Naidoo & Co.	30th Sept. 1868.
Do. XII. „ I.	10	30th Aug. 1866 ..	Mr. M. Ross ...	30th July „
Do. XII. „ II.	6	25th Jan. 1867 ...	Do. ...	Do. „
Do. XIII.	10½	25th „ „ ...	Do. ...	31st Dec. 1869.
Veerapoor Station ...	...	9th April 1869...	Do. ...	Do. „
Bellary „ ...	...	17th May „ ...	Do. ...	31st Aug. 1870.

MADRAS; *February* 1870.

J. H. M. SHAW STEWART, *Major, R.E.*, *Consulting Engineer for Railways.*

Order thereon by the Government of Madras,—No. 876, dated the 29th March 1870.

THE Government are gratified to learn from this report that the works on the extension of the North-West Line of the Madras Railway towards Raichore and on the Bellary Branch are progressing satisfactorily.

2. Under the circumstances brought to notice in paragraph 12, His Excellency the Governor in Council approves of the construction of the Station at Raichore being undertaken by the Madras Railway Company on the site selected by the Acting Chief Engineer, and His Excellency trusts that no time will be lost in submitting the requisite plans and estimates.

3. Adverting to the observations of the Government of India in their letter communicated in G. O. No. 723, dated 8th March 1870, the Consulting Engineer will impress upon the attention of the Railway authorities the necessity of their taking special care to prevent any expenditure being incurred, except upon sanctioned estimates, and as it is of importance that the works on the unopened portion of the North-West Line should not be delayed, the submission of those estimates should be expedited.

Endorsed by the Secretary to the Government of Madras, Public Works Department,—No. 877, dated the 29th March 1870.

COPY of the above forwarded to the Government of India, with reference to their letter dated 5th February 1870, No. 227R.

Read the following letter from MAJOR J. H. M. SHAW STEWART, R.E., Consulting Engineer for Railways, Madras, to the Secretary to the Government, Public Works Department,—No. 92, dated Madras, the 7th March 1870.

IN paragraph 12 of my letter No. 79, dated the 25th ultimo, I explained the circumstances under which it has now been proposed to build the junction station at Raichore by the Agency of the Madras Railway Company, and within the limits of their line; and I solicited the approval of the Government to that arrangement.

2. I have this day received from the Agent of the Madras Railway an application for the land required for station purposes. Mr. Elwin also states that the plans and estimates for the station works are in course of preparation, and as it is very important that materials for building should be accumulated on the spot as early as possible, he requests authority to proceed with the collection of materials in anticipation of sanction.

3. The Government are aware that from one cause and another the commencement of the junction station at Raichore has been postponed from time to time. It is of very great importance that no further delay should be allowed to intervene, and I have accordingly communicated to the Agent authority to commence the collection of materials in anticipation of the sanction of Government to the plans and estimates which are under preparation.

4. I trust that my proceedings will meet with approval.

Order thereon by the Government of Madras, Public Works Department,—No. 922, dated 1st April 1870.

THE proceedings of the Consulting Engineer for Railways, as reported in this letter, are approved.

Endorsed by the Secretary to the Government of Madras, Public Works Department,—No. 923, dated 1st April 1870.

COPY of the above forwarded to the Government of India in continuation of docket No. 877, dated 29th March 1870.

Endorsed by LIEUT.-COL. J. S. TREVOR, R.E., Consulting Engineer for Railways, Bombay,—No. 1262, dated Bombay Castle, the 1st April 1870.

SUBMITTED for orders.

2. The progress at the Caugnee Bridge continues most unsatisfactory, and unless the Agent can ensure better progress either by forcing the contractors to put on more men, or by doing part of the work with his own men, the bridge will not be finished before the monsoon sets in, and the opening of the line will be delayed for another six months. The failure to take any steps to proceed with the foundations of the Yedagherry Bridge is most discreditable to the contractors.

From CAPTAIN WHITE, R.E., Deputy Consulting Engineer for Railways, to the Consulting Engineer for Railways,—dated Sholapore, the 28th March 1870.

I HAVE the honor to inform you that in company with the Chief Engineer, Mr. Manning, I inspected the Caugnee Viaduct on contract No. 19, and on returning lorried over contract No. 18 to inspect the progress of the unfinished works on that contract.

Caugnee Viaduct.—The foundations of the last pier are now in, and the piles are being driven to commence work on the abutment. The masonry of the abutment cannot, as you are aware, be put in hand until the coffer dam is complete; and the short supply of timber has, I understand, been the cause of the slow progress of this part of the work. I should think the abutment foundations would not be got in before the first week in May.

Of the five piers required for the 6-60 spans, No. 1 is completed, No. 2 is within 15 feet of the top, No. 3 within 25 feet, No. 4 within 45 feet, and No. 5 is just founded; the masonry of these spans may, perhaps, be completed by the end of June. Regarding the bed blocks of the girders of the 74 feet spans, at the time of our inspection there were 50 on the ground; others, I understood, are coming in, altogether 136 blocks are required. Before hoisting these blocks it is necessary to chisel out the required slope for the last tie-rod of the girder. There were only nine men at this work when we were on the ground, and each chisel draft takes three days to finish. It is therefore probable that unless the contractor hoists the bed blocks wherever Mr. Lindsley, who is in charge of the girder work, may require them, there will be both delay in erecting the girders and unnecessary expense caused by having to lift and traverse the girders laterally instead of putting them together at once upon the bed block.

My impression is that the contractors have no intention of hurrying themselves or assisting in any way towards the early completion of the girder work of the Caugnee Viaduct, the Company might gain a little time if they took the work into their own hands; but as the contract time will be up in three months, I doubt very much whether this gain would be worth the difficulties that would hereafter arise from the Company keeping their contract. Moreover the contractors themselves might certainly endeavour to prevent any one else entering on the contract until their time was up. I advise that the bed block work be left in the contractors' hands. Mr. Manning has ordered Mr. Lindsley to assist the contractors with lifting tackle, and they may, perhaps, push on the work in a more satisfactory manner. Mr. Lindsley will, I know, make the best arrangements for lifting and putting together the girders (which work is now in progress), so that, if impeded by the contractors, he will be able to work on during the monsoon. If the contract there is taken out of the contractors' hands on the 30th June, the Company would, I should think, stand in a much better position in a Court of law, than if they had forcibly entered on the work which is now progressing so slowly.

The diversion across the Caugnee will be accepted in a few days.

Shahbad Viaduct.—The masonry pier of this work is ready to receive the bed block for the girder standard; the piles of the two other piers are being screwed and would, I should think, be completed by the time the masonry of No. 1 abutment, which is now a few feet above ground level, is finished. There has been some delay caused by the walling of the old coffer dam being in the way of the screwing of No. 2 iron pier, but there is every probability that the whole work will be completed by the first week in May.

I am informed by Mr. Manning that the permanent way is laid up to the 29th mile. Between the 29th and 52nd mile there are only the Yedagherry Bridge and the 9-20 feet bridge at 39 miles 40 chains incomplete, the latter work will be finished shortly; but the arrangements of the contractors for getting in the foundations of the Yedagherry Bridge are still most unsatisfactory.

From the 54th mile to the Kistna there are only four small bridges, and the bridge of 14-15 feet spans at the 64th mile. Mr. Manning is informed that the latter work will be complete by the middle of May.

I will report to you shortly on contract No. 18.

From the Government of Bombay, to Her Majesty's Principal Secretary of State for India, London,—No. 15, dated Bombay Castle, the 20th April 1870.

IN continuation of our despatch No. 3, dated 17th January, we regret to have to state that the progress of the works between Goolburga and Raichore, on the South-East extension of the Great Indian Peninsula Railway, let to Mr. Bray, is still most unsatisfactory.

2. The opening of this section of the Railway, as far South as the Krishna River, depends on the bridges over the Caugnee and Yedagherry Rivers. On the former a little work has been done, and the bridge may be finished by the end of June next; but far greater exertions must be made than the contractors' agent has up to the present shown a disposition to make. To the Yedagherry Bridge nothing has been done. The bridge is not a large one, twelve girder openings of 30 feet each, but the foundations are difficult to get in, and of these seven have not been commenced. The work has, in fact, been at a stand for nearly two years for want of adequate pump-power to keep the water down. We attach a copy of a Resolution we have lately passed in regard to these works. But we entertain little hope of better progress being made until the contract with Mr. Bray is closed, or he is induced to send out a new agent, with instructions to spare no effort to complete the works as far South as the Krishna River by the end of the monsoon.

Resolution by the Government of Bombay,—No. 523, dated Bombay Castle, the 8th April 1870.

Read letter from the Consulting Engineer for Railways, No. 1262, dated 1st April 1870, submitting, with observations, for orders inspection report by Captain White, R.E., Deputy Consulting Engineer for Railways, of the Caugnee Viaduct on contract No. 19, and of the unfinished works on contract No. 18, Great Indian Peninsula Railway.

RESOLUTION.—Government regret to observe from this report that the works at the Caugnee River are progressing most unsatisfactorily, and that at the Yedagherry Bridge nothing has been done towards getting in the foundations. These two works are the key to opening the Railway to the Kistna River. If they are not completed before the setting in of the monsoon, plate-laying will have to be stopped for some months, and the completion of the Railway will be indefinitely retarded. Government cannot permit the establishment of through communication with Madras to be delayed by Mr. Bray's Agent, and they look to the Agent and Deputy Chief Engineer of the Company to see that the two works above referred to are finished by the 30th of June 1870. These two officers can make what arrangements they deem best, and Government will be prepared, if necessary, to authorize the two works being taken out of Mr. Bray's hands at once. These proceedings should be reported to the Secretary of State.

From LIEUTENANT-COLONEL J. S. TREVOR, R.E., Acting Secretary to the Government of Bombay, Railway Department, to the Secretary to the Government of India, Public Works Department,—No. 566, dated 19th April 1870.

IN reply to your letter No. 584R of the 1st instant, I am directed to forward copy of a despatch from this Government, to the Secretary of State, and a Resolution No. 523, dated the 8th idem, passed on a report from Captain White, Deputy Consulting Engineer.

2. The progress made with the works continues to be most unsatisfactory. But the Engineers of the Company still express themselves hopefully of the prospect of completing the Caugnee Bridge before the monsoon sets in. A diversion has lately been put in across this river, and as rails are laid on for 14 miles beyond, permanent way materials, of which there is a large stock at Goolburga, will be carried forward for laying down during the monsoon. If a good quantity can be delivered before the monsoon sets in, and if the Yedagherry Bridge foundations can be got in, communication to the Krishna may be established by the close of the monsoon. Beyond that river the Great Indian Peninsula Railway Company have only fourteen miles of line.

From MAJOR E. C. S. WILLIAMS, R.E., Deputy Secretary to the Government of India, Public Works Department, Railway, to the Secretary to the Government of Madras, Public Works Department, Railway,—No. 752 R, dated Simla, the 4th May 1870.

I AM directed to acknowledge the receipt of your letters Nos. 877 and 923, dated 29th March and 12th April 1870, on the progress of the works on the extension of the North-West line of the Madras Railway.

2. As recently intimated in my letter No. 583R of the 1st April 1870, the Governor General in Council continues to attach the utmost importance to the connection by rail of the Presidencies of Madras and Bombay at the earliest possible moment, even though the junction be at first effected imperfectly with breaks at the Krishna and Toongabuddra Rivers. In this view I am directed to request that measures may be adopted to expedite the masonry works on District XX., and that the question of getting across the Toongabuddra by the close of the calendar year, either by means of the bridge or in some other way, may be taken into consideration. At present all idea of opening the line to Raichore before April or May 1871 seems to be given up, but the Governor General in Council would be much disappointed if the opening were postponed so long.

No. 753 R.

COPY to the Government of Bombay for information, with reference to the letter from that Government, No. 566, dated 19th April 1870.

No. 19 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, MAY 21, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

Non-Subscribers to the GAZETTE *may receive the* SUPPLEMENT *separately on a payment of six Rupees per annum if delivered in Calcutta, or nine Rupees four annas if sent by Post.*

No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

AUSTRALIAN PRODUCE.

From E. C. BAYLEY, Esq., Secretary to the Government of India, Home Department, to His Excellency SIR JAMES FERGUSSON, Governor of South Australia, Adelaide,—No. 2379, dated Simla, the 17th May 1870.

I HAVE the honor to acknowledge the receipt of communications from your Excellency, dated the 10th and 26th of December last, regarding the despatch, free of cost, by the brig *Jane Bell*, of samples of such staple articles of Australian produce as can be regularly supplied in quantity, and which, it is believed, can be furnished to any amount at rates contrasting favorably with those now paid by the Government of India.

2. Again thanking your Excellency for the courtesy shown in this matter, I beg to forward, for your Excellency's information, a copy of the proceedings of a Special Committee appointed by the Government of India to examine and report upon the samples in question.

3. From this report your Excellency will perceive that the flour, certain of the wines, the jams, biscuits, butter, mats, and *tinned* meats appear to be the best suited for importation into India.

Report of Committee on samples of Australian produce per "Jane Bell," dated Fort William, the 18th February 1870.

Number of Packages.	Articles.	Name of Firm by whom shipped.	Condition of Packages.	Wholesale Price of Articles in Calcutta.	Remarks by Committee.
1—20	2 half bags flour	Henry Giles	Some bags and contents slightly injured by damp.	4 annas 3 pie	The flour appears of excellent quality and superior to that manufactured in Calcutta and Bengal generally.
21	1 case of ale and porter ...	Simms and Chapman ...	Good	Rs. 5 to 6 per dozen	Of full body and somewhat over-ripe, of doubtful quality, unsuited for Indian market; each sample varying.
22	1 „ biscuits	Giles and Smith ...	„	5 annas 6 pie per lb. ...	Of excellent manufacture and taste, equal to machine-made biscuits from England.
23—24	2 „ jams and biscuits ...	A. Murray and Sons ...	„	Biscuits, 10 to 12 annas per lb. Jams, Rs. 3 per 3-lb. pot ...	Very excellent biscuits, and equal in quality to those from England. Jams very superior.
25—26	2 „ wine and jam ...	T. Reynolds	„	Wine, Rs. 10 to 12 per dozen. Jams as above.	Wine of fair body and flavor, dry, and resembling a light Burgundy. Jams of good quality.
27	1 „ jam	G. McEwin	„	As above	Very fair flavor and manufacture.
28	1 „ jams, pickles, sauces ...	Mr. N. A. Chaucer ...	„	Jams as above. Pickles, 12 annas per bottle. Sauces, 8 to 12 annas.	11 samples, all of excellent manufacture and good flavor, equal to English.
29	1 „ wine	Dr. A. C. Kelly ...	Packing good; six bottles broken and ullaged.	No price can be given... ...	Light and unsuited for the Indian market; inclined to effervesce.
30—31	2 „ preserved mutton ...	Adelaide Meat Preserving Company.	Good	10 and 12 annas per lb. ...	Fresh, of good quality; the mutton well adapted for troops or ship use.
32—33	2 „ wine	E. J. Peake	„	... ...	Sent to His Excellency the Viceroy.
34	1 „ oranges	T. Hardy	„	4 annas per dozen	Oranges in sand, in good order.
35	1 „ of wine	„	„	Rs. 12 „	Wine Morooroo Reisling. A very good sound wine resembling Sauterne. Highly approved of.
36	1 „	„	„	„ 12 „	Brand—"Fine old white 1862." Sound, good body, flavor good, resembling Sauterne, but sweeter.
37	1 „	„	„	„ 12 to 14 per dozen ...	"Fine old red 1862." A sound wine of fair body and aroma, not unlike Pontac.
38	1 „	„	„	„ 15 per dozen	Morooroo Carbonet. Rich, very full flavor; good aroma and excellent quality, strongly recommended.
39	1 „	„	„	„ 15 „	Morooroo Verdeilho. A light pale dry wine not unlike Chablis. Recommended.
40	1 box of raisins	„	„	10 annas per lb.	Box of raisins in good preservation.
41	Case of wine containing two samples of different sorts.	E. J. Hector	„	Rs. 8 per dozen	"Montura 1868." Sound, rough and fair body, but not sufficient care taken in its manufacture. Montura 1867. Same class of wine, but somewhat clearer.
43	1 keg of wine	D. Randall	„	Rs. 10 or 12 per dozen... ...	Glenparya Vineyard. A very sound good claret.
44	1 case of wine	„	„	„ 12 or 14 „	„ „ A good sound wine carefully prepared, resembling Burgundy. Recommended.
45	Box of soap	W. H. Burford... ...	„	....	Of good quality; an excellent soap.
46	„	Tidmarsh & Co. ...	„	....	Ditto ditto.
47	Box of confectionery ...	A. Irwin	„	10 to 12 annas per large bottle ...	Excellent and prepared with great care.
48	„	„	„	„ „ ...	Ditto ditto.
49	Cordials	G. E. Martin	„	No value can be attached to these ...	Appear of good flavor, but not equal to those procurable in Calcutta.
50	Case of wine	G. White	„	Rs. 8 to 10 per dozen	A light wine, good quality, resembling hock.
51	„	„	„		
52	„	J. Gilbert	„	No value	"Segros Purvey Vale." A red wine of light body, not much approved of.
53	„	„	„	Rs. 8 to 10 per dozen	"Reisling Purvey Vale." A light wine, sound, and fair average quality.
54	„	„	„	No value	"Gouie Purvey Vale." Inferior quality, not approved of.
55	„	„	„	From Rs. 6 to 8 per dozen ...	Carbonet 1865, "Purvey Vale." A rough claret.
56—61	6 cases of cordials ...	J. E. Seppett	„	No value	Quality not adapted for Indian market, nor equal to liqueurs imported from England.
62	1 cask of wine	R. W. Ross	„	„	Frontignac. The quality of this wine is not understood, nor is it suited for the Indian market.
63	„	„	„	Rs. 12 to 14 per dozen	A red wine, a light claret of fair body and quality.
64	„	„	„	„ „	A very dry wine, and partakes of the character of the Amontillado Sherry.
65	1 tin of biscuits	J. Lavin	„	5 to 6 annas per lb.	A very excellent biscuit adapted for issue to troops and navy purposes.
66	1 case of mats	H. Alford	„	From Rs. 5 to 10 each... ...	10 samples of dressed wool of excellent preparation and well worthy of the attention of the mercantile community.
67 & 68	1 case of wine	Clark and Crompton ...	„	Rs. 6 to 8 per dozen	Red wine of fair body, resembling light claret.
69 to 88	20 bags of flour	W. Colman	„	4 to 5 annas per lb.	Of good quality.
89 to 92	4 „	W. Duffield & Co. ...	„	„	„
95	1 cask of beer	Haupen and Catchlove ...	„	Rs. 65 to 75 per hhd.	Of fair quality, but not equal to the ordinary run of English ale imports for the Indian market.
96 to 98	3 bags of flour	James Dawson ...	„	4 to 5 annas per lb.	Sound, fresh, and of good quality.
99 to 103	5 „	Verco and Lees ...	„	„	„ „
104 to 108	5 „	J. Dunn and Co. ...	„	„	„ „
109 to 118	10 „	Giles and Smith ...	„	„	„ „
119 to 128	10 „	Hart and Co.	„	„	„ „
129—132	4 cases of green fruit ...	R. D. Ross	Badly packed ...	4 annas per dozen	Oranges and lemons in pretty fair order, the rest all decomposed; the former of fair quality, but not better than the Sylhet oranges or country limes.
133—137	5 bags of flour	J. Darling	Good order	4 to 5 annas per lb.	Sound, fresh, and of good quality.
138—139	2 casks of beer	Haupen and Catchlove ...	Good	Rs. 65 to 75 per hhd. ...	1 porter and 1 ale sound and of fair quality; but to ensure a sale they should be much cheaper than English beer, which sells for Rs. 5-8 per dozen qrts.

Number of Packages.	Articles.	Wholesale Price of Articles in Calcutta.	Name of Firm by whom shipped.	Condition of Packages.	Remarks by Committee.
140	1 case of butter ...	... 8 to 10 annas per lb. ...	M. C. Davies ...	... Good ...	Very fresh and capital flavor, far better than usually supplied on board ship.
	Wheat.				
141—144		... No value ...		...	
145	1 case of wine ...	...	R. and J. Scott...	... " ...	Frontignac. Sour and unsuited for the Indian market.
146	1 " ...	... "	" ...	... " ...	Portugal, a rough nondescript sort of claret, not recommended.
147	1 " ...	... "	" ...	... " ...	An inferior description of claret ditto.
148—149	2 cases of oranges and lemons ...	... "	G. D. Young ...	... " ...	Contents for the greater part decomposed.
150	1 case of preserved meat	... "	H. B. Hughes ...	... " ...	Contents decomposed.
151	1 package meat ...	... "	L. Conrad ...	... " ...	Contents rotten owing to bad package. Preserved meat should be packed in tin.
152	1 " ...	... "	T. H. Parker ...	... "	Ditto ditto.
153—157	5 bags bark ...	... Price of babool bark is 4s. per md. of 82 lbs. Calcutta	W. Peacock ...	... In canvas ...	ditto.

The above rates have been ascertained to prevail with reference to the wholesale prices of stores, &c., in Calcutta, including transit charges, freight, &c., from England, which do not exceed those charges from Australia. The cost of freight from Adelaide is calculated as being about Rs. 30 to 35 per ton.

A. D. DICKENS, *Lieut.-Col., President.*

G. B. JENNINGS, *Lieut.-Col., Comdg. 2nd Battalion, H. M.'s 19th Regt., Member.*

A. POND, *Lieut.-Col., Bengal Staff Corps,* "

E. L. HIFFERNAN, *Surgeon, 2nd Batn. H. M.'s 19th Regt., attending the Committee.*

G. J. L. BUCHANAN, *Brigadier-General, Commanding the Presidency Division.*

FORT WILLIAM, *The 8th March* 1870.

Proceedings of a Committee assembled at Fort William on 3rd March 1870, *by order of the Major-General Commanding the Presidency Division, to report on samples of South Australian produce received per ship "Jane Bell."*

Lieut.-Col. A. D. DICKENS, C.B., *Deputy Commy. Genl.* ... ... *President.*
" G. B. JENNINGS, *Commanding 2-19th Regiment* ... } *Members.*
" A. POND, *Bengal Staff Corps* ... }
Staff Surgeon E. L. HIFFERNAN, *2-19th Regiment,* attending the Committee.

In pursuance with orders received in Assistant Adjutant General's memorandum No. 46 of the 5th instant, the Committee assembled on the 18th idem, and on subsequent dates at the Commissariat Godowns, Baloo Ghaut, and proceeded to examine the sample cases laid out for their inspection. They beg to attach a detailed report of the result of their examination, and they also desire to make the following remarks in connection with the various classes of articles which have been most carefully tested and inspected by them.

Wheat.

The samples of wheat inspected were of a fine white uniform grain, equal in quality to the best Patna Doodia wheat, and far superior to the wheat usually sold in the bazaar used for making flour by the Commissariat Department.

After grinding a maund of 82 lbs. the following results were obtained, which, in comparison with a maund of ordinary bazaar wheat, contrasts as follows :—

	Australian Wheat.		Indian Wheat.	
	Srs.	Ch.	Srs.	Ch.
Bread stuff	29	14	31	7½
Meat or atta	1	1½	1	9¾
Bran	8	4	6	1¾
Loss	1	12½	0	13
Total ...	40	0	40	0

The value of the wheat is reported by the Executive Commissariat Officer to be Rs. 4-14-6 per maund.

Flour.

The flour appears of excellent quality and color. It has stood the test of coming out to India packed in canvas bags, and appears sweet and fresh, a portion of it was made into bread, and the loaves were very generally approved of by the Committee, who considered them superior to the bread supplied to the troops, contrasted with Indian flour as manufactured by the Commissariat Department. The result is as follows :—

	Australian Flour.	Indian Flour.
	No.	No.
No. of loaves produced by 1 maund of 82 lbs. ...	103	103

This flour would sell readily at Rs. 5-8 to 5-12 per maund in the market.

It is nearly equal in quality to the best American and Cape flour. Both the latter are always packed in barrels, and for India this appears the best method of preserving flour.

Ale and Porter.

Several bottles of ale and porter were tasted by the Committee. They all varied in quality, some of them being sour and hard to the taste. The ale in some instances appeared to be over-ripe and unfit for use, the quality on the whole was doubtful, and the opinion of the Committee is that the bottled ale and porter are not equal to that usually imported for the Indian market and would not sell. The two casks of beer shipped by "Haupen and Catchlove" appeared to be of better quality than that in bottle, resembling in taste and character the Hill beer. To ensure a sale, it would have to be sold at a much lower rate than English beer. The latter can be obtained from Rs. 65 to 80 per hogshead.

Biscuits.

All the samples of biscuits presented to the Committee appeared of excellent quality and carefully manufactured, very sweet in taste and moderately priced. They were considered equal in quality to the machine-made biscuits received from England.

Jams.

The samples of jams tasted by the Committee were much approved of, being carefully prepared and containing a good flavour of the fruit. As a rule they are superior to those usually sent for the Indian market, and very much cheaper. The samples supplied by Mr. N. A. Chaucer were, if anything, the best, but all seemed to be worth the attention of the Calcutta provisioners.

Wines.

The Committee tasted a sample of every description of wine sent out by the firms mentioned in list received with letter No. 236 of 14th January, from the Under Secretary to the Government of India in the Home Department, and have expressed a separate opinion in the detailed statement attached, to which reference is solicited. The wines all partake much of the same character; the red wines resembling Burgundy, light clarets, and Cape Pontac, whilst the white wines are all more or less connected with Hocks and Santernes. Most of them appeared to be very sound with a good flavour of the grape. Amongst the best were those shipped by "T. Hardy." His "Morooroo Carbonet" and Morooroo Verdeilho" were both excellent wines, the first resembling a full-bodied claret or Burgundy, and the other a white wine not unlike "Chablis." The prices fixed on the wines seem moderate, and it is not improbable that considerable quantities might be sold. It is, however, not an easy matter to decide upon the prices which such wines would realize in the Calcutta market, as there are none resembling them unless they be Greek and Hungarian wine.

The very light wines it would be useless to import, but a few such as those above mentioned and the following might find a ready sale when once known and appreciated by the Indian public. Actual consumption would be the best test, provided prices were low and within the means of the public. The Committee desire to recommend the wine in cask by "R. W. Ross" as being of good quality and body. The same can be said of a keg of wine shipped by D. Rundall, which was considered to be a very excellent claret. His other wines were also much approved of. For hospital purposes, the Committee do not recommend these wines.

Pickles and sauces.

The pickles and sauces submitted appeared of fair quality but not equal to English importations, and it is doubtful if it would be advisable to send these articles to India, unless there was a marked improvement in them.

Preserved meats.

The Committee examined very carefully the samples submitted by the Adelaide Meat Preserving Company. The contents of the tins were fresh and in good preservation, the mutton was of good quality and quite equal to the English preserved meat. The packages of preserved meats shipped by H. B. Hughes, L. Conrad, and T. H. Parker, owing to their being put up in canvas, arrived in a putrid state. All preserved meats should be hermetically sealed. The Committee recommend greater attention and care in this respect.

Green fruits.

Several cases of oranges and lemons were opened, and a large proportion found to be in a decomposed condition, perhaps one-third in each case were in fair order; but the Committee are of opinion that it would be useless to attempt the importation of fresh fruits, as those grown in India are quite equal to the Australian produce.

Confectionery.

Two boxes of confectionery shipped by A. Irwin were duly examined by the Committee, who considered them to be of excellent quality and manufacture.

Cordials.

These were not approved of, although those from the house of G. E. Martin were better than others. The cordials as a rule were badly manufactured, and were not equal to the same description procurable in Calcutta. In justice to the shippers, the Committee would observe that some of the cordials had never been heard of by them, and possibly required to be better understood to be appreciated.

Soap.

Two cases of soap,—one shipped by W. H. Burford and the other by Tedmarsh and Company,—were inspected. The soap was ordinary, domestic, yellow bar soap, and well adapted for household purposes. It looked quite equal to that usually sold in Calcutta.

Butter.

A case of butter from M. C. Davies arrived in excellent order, very fresh and sweet, admirably adapted for ship use, being fresher and purer than any imported from other countries, and procurable in Calcutta.

Mats or dressed skins.

A case of these shipped by H. Alford contained some beautiful specimens of dressed sheep skins. Some of the fleeces for fineness of texture and length of wool were quite remarkable. Great care had evidently been bestowed in their preparation, and the Committee have no hesitation in saying that they think them equal, if not superior in quality, to anything of the sort they have seen in this country.

Bark.

The sample of bark examined seems to be of good quality, with a fair average amount of tanning quality. The price of bark used for tanning leather in Calcutta is about 4*s.* per maund of 82lbs.

Packing.

Generally the packing of the several samples of Australian produce has been carefully attended to, but the Committee recommend that flour should be sent out in barrels, as less liable to injury from damp or other causes than when packed in canvas bags. Many of the articles inspected by the Committee were injured from the fact of their being badly and unsecurely packed.

The samples generally as regards quality and price contrast favorably with the usual run of importations from the English and other markets.

The following annexures are attached to this Report:—

1.—Division No. 56, dated February, directing the assembly of Committee of Affairs on Australian Produce.

2.—Letter No. 645 of 5th February 1870, from the Adjutant General of the Army, to the Major-General Commanding the Presidency Division.

3.—Letter of February 1870 from the Adjutant General of the Army, to the Commissary General.

4.—Printed letter No. 1342 of the 28th January 1870, from the Assistant Secretary to Government of India in the Military Department, to the Adjutant General, with printed correspondence detailed in letter from the Chief Secretary to Government, Simla Australia to the Hon'ble Secretary, Government of India.

5.—Letter dated 10th November, from the same to the same.

6.—Letter dated 10th November from Sir James Fergusson, Governor of South Australia, to His Excellency the Viceroy and Governor General of India.

7.—Detailed list of samples.

A. D. DICKENS, *Lieut.-Col., Deputy Commy. Genl.* ... *President.*

G. B. GENNINGS, *Lieut.-Col., 2-19th Regt.* ... } *Members.*

A. POND, *Lieut.-Col., Bengal Staff Corps* ... }

E. L. HIFFERNAN, *Surgeon, 2-19th Regt.* ... Attending Committee.

FORT WILLIAM; *The 3rd March* 1870.

G. J. L. BUCHANAN, *Brigadier-General, Commanding the Presidency Division.*

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

IRRIGATION OPERATIONS IN THE PUNJAB FOR FUSL RUBBEE OF 1869-70 UP TO 31st MARCH 1870.

Canal Division.	Land Irrigated (approximate). Zillah.	Land Irrigated (approximate). Acres.	Rain-fall. Average.	Rain-fall. During month.	Chief Crops (approximate). Name.	Chief Crops (approximate). Area in acres.	Remarks.
1st Division	Goordaspoor	18,060	5·13	2·43	Barley	6,260	31159 cubic feet per second escaped.
2nd " Main Branch Lower	Umritsur	41,655	1·77	·6	Mixed grain	9,866	
" " Lahore Branch	Lahore	29,606	...	...	Wheat	61,140	
					Other crops	12,005	
Total, Baree Doab Canal	.....	89,321	...	...	.....	89,321	
Kurnaul Division	Umballa	2,502	1·376	2·06	Barley	8,622	11574 cubic feet per second passed down the Loodha Khera Escape.
Delhi "	Kurnaul	50,170	·74	·32	Mixed grain	13,304	
Hansi "	Delhi	51,441	...	...	Wheat	164,046	
" Bulla Head	Rohtuck	33,945	...	...	Other crops	8,446	
	Hissar	32,464					
	Jheend	18,404					
	Bikaneer	582					
Total, Western Jumna Canal	.....	194,508	...	...	.....	194,508	
Upper Sutlej Division	.....	.....	...	...	Wheat	28,000	The Upper and Lower Sutlej Canals dry during the month. The amounts entered as irrigated by inundation canals are very rough approximations, there being no revenue establishment as in perennial canals.
Lower "	.....	.....	...	...	Other crops	123,000	
Indus Canals	.....	151,000.					
Total, Inundation Canals	.....	151,000	...	...	.....	151,000	
Delhi and Goorgaon Works	Delhi	823	...	...	Barley	691	
	Goorgaon	3,805	...	...	Wheat	1,000	
					Other crops	2,937	
Total, Delhi and Goorgaon Works	.....	4,628	...	...	.....	4,628	
Grand Total	.....	288,457	...	...	.....	288,457	

Canal Division.	Water distributed during March. Full supply.	Depth in Canal at regulating guage. Actual throughout March.	Estimated full supply. Gross consumption, cubic feet per second. Actual average throughout March.	Navigation Return Canal. Principal items of Traffic. Up.	Down.
1st Division	4·9	3·27	3,073·6	718·65	... .
2nd " Main Branch Lower	4·6	2·12	.....	548·74	... .
" " Lahore Branch	3·3	2·96	.....	529·74	... .
Total, Baree Doab Canal	.....	.....	.....	1,797·13	... .
Kurnaul Division	4·33	.....	2,546	235·79	... 11,675 mds. firewood, 211,279 bullies, kurries, planks, &c., & 10,350 mds. of timber.
Delhi "	4·4	.....	.....	530·35	...
Hansi "	8·8	7·7	.....	782·90	...
" Bulla Head	8·4	7·4	.....	243·29	...
Total, Western Jumna Canal	.....	.....	.....	1,801·33	... 22,025 mds. firewood & timber, & 211,279 bullies, kurries, &c.
Upper Sutlej Division	.....	.....	.....	.....	... .
Lower "	.....	.....	.....	.....	... .
Indus Canals	.....	.....	.....	.....	... .
Total, Inundation Canals	.....	.....	.....	.....	... .
Delhi and Goorgaon Works	.....	.....	.....	.....	... .
Total, Delhi and Goorgaon Works	.....	.....	.....	.....	... .
Grand Total	.....	.....	.....	.....	... 22,025 mds. firewood & timber, & 241,279 bullies, kurries, &c.

J. W. OTTLEY, *Lieut., R.E.,*
Offg. Asst. Secy. to the Govt., Punjab, Irrigation Branch.

No. 20 of 1870.

SUPPLEMENT TO
The Gazette of India.

SIMLA, SATURDAY, MAY 28, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

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GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

THE LADAK TRADE DURING 1869.

From DR. H. CAYLEY, on special duty at Ladak, to the Secretary to the Government, Punjab.

I HAVE the honor to submit the following report on the subject of the Ladak trade during the past season.

2. I have great satisfaction in being able to repeat what I stated last year as to the readiness displayed by the Cashmere officials in Ladak to work with me and assist me in the furtherance of my plans, and the Wazir, Syud Ali Akbar, keeps up his character for justice and fair dealing towards the traders. I found the Maharaja of Cashmere also most ready to listen to all complaints, and to redress all grievances of the traders which I have had occasion to bring before him; and I can confidently say that, as a rule, the merchants passing through Ladak have met with justice and fair treatment; and in one or two instances, when merchants have brought specific complaints against the former Thanadar of Ladak of robbery and oppression, the Maharaja has ordered restitution to be made. I am in hopes also that the great influence in Ladak of the Wazir Labs Ju, against whose agents such repeated complaints have been made, has been broken through. The Wazir has always kept agents in Ladak, who, on the strength of their master's name and power, have been greatly instrumental in robbing and oppressing other merchants, and the Lé officials have seldom ventured to interfere. This year an agent of Labs Ju, named Saij Ram, attempted various acts of oppression by threatening to carry

merchants to Cashmere as prisoners, and in other ways; and finally he actually seized and made prisoners three or four Yarkandi merchants, and they were only released on my remonstrance. The Wazir of Ladak being afraid to interfere, I reported the matter at once direct to the Maharaja; and he ordered Saij Ram to be immediately made prisoner and removed from Lé, and has given instructions that no agent or servant of Labs Ju is ever again to go to Ladak. This proves the evident desire of His Highness to remedy the abuses in Ladak when brought to his notice.

3. At the latter part of the season, Kazi Kutub Deen was again sent up by the Maharaja as Vakeel; and I can again speak in the highest terms of the straightforwardness and openness he has displayed in all his dealings, and of the assistance he has rendered in carrying out measures for the benefit of trade. The Kazi is, as I have before mentioned, a British subject, and was rewarded by the British Government for his services during the Indian mutiny.

4. A very considerable reduction was this year made in the duties on goods passing through Cashmere and Ladak. The former *ad valorem* duty of five per cent. was reduced to four per cent. on all goods passing in transit through the Maharaja's territories, the same rate being charged on all the different routes.

The total amount of customs duties collected during the year in Lé was Rs. 16,600, or somewhat less than in 1868, when it was Rs. 21,400. This is chiefly due to the exports from Ladak to Cashmere (Tables E. and F.), on which the duties are nearly 12 per cent. *ad valorem*, having been much less than in the previous year.

By the arrangements now agreed upon by the Maharaja of Cashmere, transit duties are to be entirely abolished on all goods passing through Cashmere territories between the Punjab and the countries beyond Cashmere. The merchants who have heard of this are highly gratified by the concession, and a very great impulse to commerce may be looked forward as a result of the measure. This reduction of duty was very necessary for the development of the trade with Central Asia; for (as I pointed out in my reports of the two previous years when recommending the abolition of transit duties) even a four or five per cent. duty pressed most heavily on a trade carried on between regions so far distant from each other, and over such a difficult and dangerous line of country as is presented by the broad and rugged expanse of the Himalayan Mountains.

5. There are still many obstacles and difficulties to be overcome before this trade can be largely increased, or can reach the limit of which it is capable.

One of these is the bad state of the roads, all of which might, at very moderate labor and expense, be made perfectly adapted to the requirements of the trade: only horse-paths are needed, which might, in a few years if necessary, be made suitable for camels. Even in our own Districts of Kullu and Lahoul the roads greatly need improvement, and are still described as being in some places highly difficult and dangerous for laden animals, and the necessary repairs are executed very slowly. Much has, however, been done in the last two years. The Rotang Pass, though only 13,000 feet high, still offers great difficulties to the passage of beasts of burden.

In Ladak generally the gradients are less steep and the roads easier, though they are totally neglected. Comparatively little snow falls, and it melts very gradually, so that the roads are not destroyed wholesale by the avalanches and rush of water in the spring as occurs South of the high mountain ranges. There are nevertheless parts of the road between Lahoul and Lé where improvements are urgently called for. During the latter part of the season the Cashmere authorities were very active in improving the route from Lé *viâ* the Changchenmo Valley and Pass, and were erecting serais for shelter, and promised to establish grain depôts at certain points.

6. Paucity of carriage is another great difficulty experienced by the traders in traversing the thinly-inhabited mountain tracts. This is chiefly felt

in Kullu and Lahoul. Between Ladak and Yarkand the "kiraya kash" of Yarkand, who possess an unlimited number of excellent baggage horses, are able to meet all requirements in this respect; but between Lé and the Punjab the want of carriage is very serious, and the traders feel no certainty of being able to carry their goods through Lahoul without great delays, which are of course matters of much inconvenience and loss. Owing to the arrangements made last year by Mr. Forsyth, the want of carriage was this season much less felt, but still there was not enough carriage for the merchandise that did pass through, and any increase in future years would require a proportionate increase in means of transport on the road.

A new regulation has been recently made that the loads to be carried by hired ponies or yaks through Lahoul are to be limited to two maunds (160 lbs.) for each animal, instead of three maunds as formerly. This rule, however necessary it may be, will press heavily on the Yarkandi merchants, who already have to pay much more highly for carriage in Lahoul than on any other part of the road between Yarkand and the Punjab. The nominal rate is eight annas per stage of 10 to 15 miles for each horse-load, which is reasonable enough, but the traders are made to pay Rs. 13 from Kullu to Rupshu, in Ladak, which is at the rate of one Rupee per stage, and the reduction in weight will add 50 per cent. to this cost of carriage, unless rates are reduced in proportion. The great difficulty, however, to the Yarkandis will be that all the packages of goods that come over from Central Asia are so made up that each horse-load weighs three maunds, or from 240 to 250 lbs., that is, every package of charas, silk, pushm, &c., weighs 120 lbs.—this being the universally acknowledged weight of a half horse-load through all Thibet and Central Asia; and for the merchants to have to open and re-pack their goods on reaching Lahoul would entail most grievous loss and expense. The point is, I think, deserving of consideration, and requires that some fair arrangement should be made to prevent the merchants from being losers on account of the new rule, as years must elapse before the Yarkandi merchants would be likely to alter the weight of their loads of merchandise from its present recognised standard.

The profits gained in the Districts through which the trade passes, by the supply of carriage, are enormous. The people of Lahoul alone must have received nearly Rs. 9,000 on this account alone during the season.

It is probable that every year, now that the merchants are beginning to pass through direct from Yarkand to the Punjab, they will more and more employ their own baggage animals instead of trusting to finding carriage on the road. In a short time, too, the Yarkand "kiraya kash" will probably arrange to carry merchandise right through to Kangra and back. I have little doubt that, in the course of a year or two, camels will come over from Yarkand to Ladak; but until the road through Lahoul and over the Rotang is rendered easier, they will hardly be able to get to the Punjab.

7. Insufficiency of supplies, as grain or fodder, may seriously impede the opening out of the direct road from Lahoul by the Changchenmo Pass and Valley as but little cultivation and few villages occur along the line of route, and this want may force the traders round by Lé. Supplies are, however, plentiful enough in other parts of Ladak, and it is only required that, for a time at least, the Lé authorities should arrange for the maintenance of depôts at one or more suitable places along the Changchenmo route in Ladak, where such supplies could always be procured at a fair rate, as is now done on the Karakoram route, and I have no doubt the Cashmere Government would readily agree to this.

8. There is a general desire on the part of most of the merchants to go by the Changchenmo route to Yarkand in preference to the Karakoram, which is so extremely difficult and dangerous, if they feel confident that no objection will be made by the Cashmere authorities. As I have before brought to notice, the Ladak authorities did at first tacitly oppose the opening of the Changchenmo route; but at the latter part of the season this opposition was entirely abandoned, and they exerted themselves to the utmost to assist and encourage the traders who would consent to go by it.

The advantages of the route by Changchenmo over that by the Karakoram have so often been pointed out that I need not again refer to them. There is a general report of a far easier route through Rudok further to the Eastward. It however runs through Lhassa territory, and is completely closed by the exclusive policy of that country; and as Lhassa seems to have practically thrown off the Chinese yoke, little advantage can be expected from the interference of the Government of China.

9. In the accompanying Tables will be found a detailed list of the imports and exports of Ladak during the year,—the different routes being shown separately.

A comparison of the trade returns of each of the three last years shows a steady progressive increase, which is entirely due to the improved state of the roads, and the measures taken for the proper protection of the traders in Ladak and Cashmere:—

The total value of the imports into, and exports from, Ladak during the year was	...	...	...	Rs.	12,91,587
In 1868 the amount was	...	...	...	„	10,38,401
And in 1867	...	...	...	„	5,54,945

These figures include the trade with Cashmere and Chanthang, as well as that between the Punjab and Central Asia, and comprise the entire imports and exports registered at Lé, so that the actual value of the goods entering Ladak must be estimated at about one-half the above totals.

Besides the merchandise shown in the returns nearly 900 horses and mules, and large amounts of gold and silver, were brought over from Yarkand.

This year's increase of only two and a half lakhs of Rupees appears much less in proportion than that of the previous year, when the trade nearly doubled; but, omitting entirely the trade with Cashmere and Chanthang, and estimating only the *through* traffic between Hindustan and Central Asia, the increase is hardly less than it was in 1868; thus—

		1868.		1869.
Imports into Ladak from Yarkand	...	... Rs.	1,58,057 Rs.	2,78,799
Ditto ditto ditto Punjab	...	... „	2,06,110 „	1,95,957
Exports from Ladak to Yarkand	...	... „	1,23,999 „	1,93,323
Ditto ditto ditto Punjab	...	... „	1,10,117 „	3,16,887
	Total Rs.		5,97,483 Rs.	9,84,996

showing an excess of nearly four lakhs of Rupees in the *through* traffic of the present year over that of 1868.

10. The increase in the trade consists entirely of goods brought over by Yarkandi merchants from Yarkand, who have flocked over in unusual numbers. The merchandise in their hands was worth nearly three lakhs, besides about 900 horses and mules for sale, and a very large amount of gold and silver in the form of gold dust, gold coins (tillas), and silver ingots (kurus or yambus). In addition to the regular traders, nearly 800 pilgrims,—men, women, and children and many of them people of wealth and position,—have passed through Ladak to go to Mecca. They have nearly all brought considerable sums for their road expenses, and to trade with on their return through India. I hear that in Amritsar and other places large amounts of gold and silver jewellery and precious stones have been displayed by them. Among these pilgrims I may mention—

Mirza Alam, a nephew of the Kushbegi;

Ayi Khan, widow of one of the sons of old Habeeb-ollah Khan of Khotan, and who has large estates and great wealth;

Ibrahim, the chief Moulvi of Kashgar, with a large following of Moulvis and pupils;

Mahomed Amin, and two or three more of the chief merchants of Kashgar.

I believe that fear of the advance of Russia, and probable troubles in Yarkand, has helped to drive over so many wealthy people, as they wish to be out of the way till affairs look more settled.

11. The traders from the Punjab have come in rather fewer numbers than last year, and it seems to suit them better to purchase the productions of Yarkand in Kangra or Amritsar than to make the long and arduous journey to Ladak or Yarkand. The merchants of the latter country are much more bold and enterprising, and are not easily deterred by dangers or difficulties. Some of the Punjab merchants have, however, displayed a very adventurous spirit; and among them I can especially mention Tara Sing, Sikh merchant of Rawulpindee, who last year most courageously went over to Yarkand with a large stock of goods and returned this year in safety, and highly pleased with the profitable results of his expedition. In Yarkand he was treated with distinction; for, although both ruler and people are strictly Mahomedan, they are far too mercantile in spirit to show intolerance to people of other creeds; and Hindus, who have lately gone to the country, have met with no interference on account of their religion; and, as is well known, two English travellers, who went over last year, were treated with kindness and distinction. There is evidently a strong desire on the part of the Kushbegi, as well as of the Yarkandis generally, to be on friendly terms with India, and to promote commerce and free intercourse between the two countries. The present ruler is fully alive to the advantages of trade, and endeavours to conciliate the foreign merchants entering his territories. The only people who try to close the Yarkand market to the entrance of Indian traders are the Cashmeerees, who unremittingly endeavour, by false accusations and lying reports, to throw suspicion and discredit on the motives of the merchants from Hindustan, and in several cases they have brought them into serious trouble and danger. It is to be hoped, however, that the influence of the Cashmeerees, resident in Yarkand, will by degrees be entirely destroyed.

12. The merchandise passing through Ladak differed but little from that described in previous years. I may, however, notice from Yarkand,—

1*st*.—Raw silk, of which in 1867 only one maund (80 lbs.) was imported from Yarkand, rose in 1868 to 47 maunds, and in 1869 to 127 maunds.

The trade in silk is likely to increase enormously, as the supply seems unlimited, and it is getting known that it will obtain a market. Hitherto the Amritsar merchants have despised the Khotan silk because of its apparently coarse, hard fibre, which they do not know how to soften and prepare; and they prefer the fine delicate Bokhara silk; but, for the European markets, the Khotan silk is of more value, as it can be made up into richer and more substantial fabrics. I have in former years described how universally silk-worms are reared and silk produced in Khotan.

2*nd*.—Silk fabrics, some of them of beautiful texture and rich colors, have this year come over in considerable quantity.

3*rd*.—Pushm was imported in much less quantity than last year, chiefly owing to the Cashmeeree market being overstocked. More than the usual amount was exported to the Punjab; but the merchants as yet feel no certainty of being able to sell it at a fair price, as it is current among them that the Amritsar shawl merchants will not take fine pushm, but prefer the coarse wools, which are cheaper.

4*th*.—Bhung or charas was less in quantity than last year, and of course the demand for this drug is strictly limited. The quality of the bhung was, however, far finer than anything ever before seen in Ladak, and fetched double the usual price, the reason being that the finest charas, which is grown at Yanghissar, and goes usually by Kokand and Bokhara, was this year brought up by merchants coming to Ladak on account of the high duties and unsettled state of road through Kokand and Russian Turkistan.

5*th*.—Tea comes in large quantities every year from Lhassa: it is all brick tea, and is chiefly consumed in Thibet and Cashmere. This year a few bricks of tea, as samples, went over to Yarkand. The value of the tea from Lhassa was Rs. 86,000, and the selling price in Lé Rs. 2-4 per pound.

6*th*.—Felt, rugs, and carpets of Khotan and Yarkand make were brought over in considerable quantity to the value of Rs. 9,000, and I believe sold well at Palumpore fair.

7*th*.—Gold dust and silver ingots (kurus or yambus) were largely imported —the former to the value of Rs. 47,000, and the latter Rs. 57,500, besides gold coins (tillas). The above forms but a small portion of the gold and silver actually in possession of the merchants and pilgrims, and no accurate estimate can be formed of the amount they really bring over. The universal accounts may, I believe, be relied on that the gold fields of Khotan are practically inexhaustible, and the gold is obtained without any great labor or difficulty.

8*th*.—Great numbers of other articles were brought from Yarkand in smaller quantities.

9*th*.—A few Russian articles, as broad cloth, gold thread, and embroidery, beet, sugar, &c., came in very small quantities.

13. From Chanthang most of the goods, except musk bags, are for consumption in Cashmere and Ladak.

This year 450 tolas of gold dust (Rs. 5,850) were for the first time brought from the Lhassa gold fields.

14. The total value of the imports from Yarkand and Chanthang during the year were,—

		Rs.
Yarkand		2,78,799
Chanthang		1,33,788
	Total ...	4,12,587
In 1868 these values were		1,58,057 from Yarkand
		1,39,900 „ Chanthang
	Total ...	2,97,957

15. The imports from the Punjab were much what have been described in previous years,—cotton goods, tea, spices, red leather, sugar, drugs, indigo, &c., forming the staple articles.

The total value was Rs. 1,95,957, or about Rs. 10,000 less than in 1868. Of this 1,085 maunds, worth Rs. 1,22,673, came by the Kullu route; 71 maunds, worth Rs. 8,533, by Rampore; and 649 maunds, worth Rs. 64,751, by Cashmere; the latter almost entirely in the hands of traders of Cashmere.

1*st*.—*Tea*.—Only 69 maunds of this were imported to the disappointment of the Yarkandis, who were all crying out for tea, which is now the great want of the country. The prices obtained by Tara Sing in Yarkand for Kangra green tea varied from Rs. 4 to Rs. 7 per pound. In Yarkand and the whole of Central Asia the desire for tea is universal, and this want can now only be supplied from India.

Nearly all the Yarkandi merchants have this year gone to the Punjab to buy tea, and seem to have made large purchases by barter at Palumpore fair. The tea trade promises well for the future.

2*nd*.—*Indigo* was again in great demand, and the new Aniline dyes, of which a few samples went over to Yarkand last year, were much sought after.

3*rd*.—*Otter skins* are much prized, and fetch in Lé Rs. 4 and in Yarkand Rs. 6 each, and even more; during the season over Rs. 35,000 worth (Ladak value) passed through Lé.

4*th*.—*Cloths and Callicos* of all kinds, plain and fancy muslins, merinos, chintz, &c., of English manufacture, besides valuable velvets, brocades, &c., were as usual largely exported to Yarkand.

16. The exports to the Punjab by the different routes were as follows:—

	Rs.
By Kullu 1,568 maunds, value	1,90,472
„ Rampore 89 „ „	6,035
„ Cashmere 327 „ „	1,20,353
Total 1,985 maunds, value ...	3,16,860

The articles generally corresponded with the imports from Yarkand.

17. The exports to Yarkand and Lhassa again, in great measure, are similar to the imports from the Punjab. The value of the exports to Yarkand was Rs. 1,96,323, and to Chanthang or Lhassa Rs. 57,889.

18. The local trade between Ladak and other Cashmere territories was somewhat less than 1868. The imports into Ladak amounted to Rs. 40,000, the exports Rs. 71,919.

19. As before noticed, the increase in the trade has been entirely owing to the arrival of a large number of Yarkandi merchants who chiefly went on, through Ladak, to the Punjab, and must of course return next season with a corresponding amount of English manufactures and Indian products.

It is probable that in future years the precious metals and raw silk will be imported in greatly increased quantities, whilst the bhung, felts, &c., will remain nearly the same. The import of pushm will depend chiefly on the readiness displayed by the Amritsar and Punjab shawl merchants to take the fine *Turfani* wool.

20. From the Punjab a great increase may be expected in the exports of tea, piece-goods, brocades, indigo, and other dyes, skins and leather, and above all in arms: English guns, rifles, and pistols, are in great request, and breech-loaders are especially desired for men of rank. This year 25 guns and rifles, and 11 pistols of English make, were taken to Yarkand.

21. The entire number of people, horses, and loads of merchandise which arrived in Lé during the season in connexion with this trade, were,—

Traders 1,223, pilgrims 793, loads of merchandise 2,108, horses for sale 829, mules 94, asses 234, sheep 412. The people of the country necessarily derive great profits by supplying the wants of so large an influx of foreigners, and the country itself is of course equally benefited.

22. The annual fair at Lé was held in September and largely attended, and the display of merchandise of all kinds was very considerable. Valuable prizes and rewards were given by the Maharaja and liberally distributed among the merchants, and the fair was a decided success.

23. I beg to bring to the notice of Government the valuable services rendered by Tara Sing, of Rawul Pindee. Tara Sing has been for about 15 years engaged in trade with Ladak; and during the first two years of my residence in Lé he gave me great help by openly bringing forward the complaints of the traders, and explaining the difficulties under which they labored at a time when the merchants generally were afraid to speak out. Last year, at my suggestion, he, in spite of much opposition, went over to Yarkand, feeling of course very anxious as to how he would be treated on account of his religion. He was, however, very well received, and made a most profitable speculation. He has made friends with many of the officials and merchants of Yarkand, and has induced many of the latter to go to Palumpore fair. Tara Sing also made himself useful at the fair as the Commissioner of Jullundhur testifies, and he has in many ways been greatly instrumental in developing the Yarkand trade, and I

consider that he is deserving of great consideration, and his services will, I trust, meet with some mark of approval from the Government. Tara Sing is very desirous of the privilege of being allowed a chair on public occasions, which small mark of honor will, I hope, be granted to him.

24. Another merchant, named Bhoniad Ali, who was formerly a Moonshee employed under me at Lé, has this year gone to Yarkand, and has also made himself useful by sending news, and in other ways; and from his intelligence and industry he will, I feel sure, be able, on his return, to afford most valuable information to the Government; and such conduct will, I hope, be deemed worthy of encouragement and reward.

25. I beg also to recommend to your notice the conduct of Kazi Kutab Deen, Vakeel of the Maharaja, whom I have before mentioned. The Kazi has always acted in a spirit of openness and fairness, and has honestly endeavoured to correct the abuses complained of in Ladak, and has been most zealous in promoting trade; and as he is a British subject whose services have already been rewarded, I think that he is deserving of some further mark of approval at the hands of Government.

26. The course of events in Yarkand, and the changes that have taken place during the last 12 months, may be thus briefly summed up.

The Kushbegi, or, as he now styles himself, the "Ataligh Ghazi," is still in undisputed possession of the throne of Yarkand and all the Provinces conquered by him, and no outbreak of any kind has occurred in his dominions to disturb his rule. He still seems to be popular with a large class of his subjects, and especially with the mercantile community, which he encourages and protects. His army keep faithful, but the later accounts describe the troops as unsettled on account of the near approach of the Russians, and the fear of an invasion by that, in their eyes, irresistible power. This feeling has spread through the whole country, and is maintained by the present relations of Russia to the previously independent countries of Bokhara, Kokand, and Andijan, which have, as the people express it, now become Russian; for, although still under their own rulers, and not occupied by Russian troops, these States seem to have entirely submitted to Russian influence and counsels.

In the autumn of 1868 two Russian officers came to Kashgar, but were stopped before entering the town, and were escorted back again as quickly as possible over the frontier. A Russian merchant also arrived, but he too was sent back, and not allowed to trade. The envoy, whom the Kushbegi sent to Russia, returned about the same time without any answer to his requests, and no negociations were entered on between the two countries.

On the Narain River, about five marches from Kashgar in the direction of Almati, the Russians have built a fort and a bridge over the river. The Kushbegi has also strengthened and strongly garrisoned his advance post at Artush, and built two or three new forts on the frontier to protect the road to Kashgar, the two forces being separated by a distance of about two days' march. The Kushbegi has all along been anxious to avoid all intercourse and to keep clear of any dispute with the Russians, and gave the strictest orders to his troops to abstain from any act of hostility, unless actually attacked. The people of the country called Nogai, a semi-Tartar race of Mahomedans, who have settled under Russian rule, continued to pass as traders, &c., between the two countries. In July some slight collision seems to have occurred between the opposing forces, confined, however, apparently to small foraging parties. Directly this came to the ears of the Kushbegi, he re-called the commandant from the frontier, and, it is said, had him beheaded for breaking his orders, and at once collected reinforcements from Yarkand, Khotan, and all parts of his dominions, and hurried every available man to the frontier, and sent his son and chief officers in command. In the course of a few weeks he despatched over 12,000 men. The Russians also largely reinforced their garrison on the Narain, and advanced across the river to within four marches of Kashgar. No further hostilities are reported, and the Kushbegi seems again endeavouring to open negociations, and is said to have sent his son as an envoy. The Russians are always said to demand the right of a settlement in Kashgar, and a road through Yarkand, which the Kushbegi knows to mean loss of independence to himself. The Russian force is said to number 3,000, of which about 600 are regular Russian troops.

27. From the side of Kokand it is reported that Buzrug Khan, Tora, who was formerly ruler in Yarkand, but was deposed by his own minister, the present Kushbegi, and who, two years ago, came down through Ladak to the Punjab, has returned to Kokand, and is planning an attempt to recover the throne of Yarkand, and that he is assisted, and in fact supplied with troops for this purpose, by Khudayar Khan of Kokand, who is a bitter enemy to the Kushbegi. At present no attack has been made.

In July or August a large caravan of merchants reached Kashgar from Kokand after an interval of more than a year, during which the road was closed: several Bokhara merchants came by it. All describe the great risk and almost impossibility of trading through Bokhara and Russian Turkistan, owing to the unsettled state of the country and the excessive duties which, on all English goods, are quite prohibitive.

28. In the early part of last season the Kushbegi decided to send an envoy to India, and told Mr. Shaw in Yarkand that the envoy should either accompany him or follow immediately. An envoy was appointed and all preparations made for his journey, but he was never sent, and the anxiety of the Kushbegi on account of the near approach of the Russians, and other circumstances, stopped the plan for the time. Now, however, news has just come that two envoys have just reached Ladak, and may be expected here shortly,—one is sent to the Maharaja of Cashmere, and the other to the Government of India.

The Kushbegi strongly desires to be on friendly terms with us, and this year all the Hindustani merchants who have visited Yarkand have been well treated, and even a surveying Moonshee, who was discovered there in disguise, when he explained that he was employed under the British Government, was set free and allowed to leave unmolested.

29. In the East there have been some disturbances among the people of Ili and Rumchi (Orumchi). Both these Districts are independent of Yarkand, and were formerly under the Chinese; but in the Tangani rebellion the Chinese were entirely driven out, and their garrisons generally massacred. In Ili the *Toranchis* are now in power, and the *Tunganis* rule in Rumchi, and they have apparently been fighting among themselves; both these people are Mahomedan and descendants of the followers of Timur, who intermixed with the Chinese population,—the Toranchis settling in Ili, while the Tunganis spread over the whole of Eastern Turkistan. It is reported that four envoys arrived from China, and were presented to the "Daoud Khalifa," the Tungani Ruler of Rumchi, who has sent back to Pekin to ask if the men were really sent as envoys, or if they were only come as spies. Since then a Chinese force is said to have reached Rumchi for the purpose of re-taking Yarkand, and that the Tunganis have joined them; this is, however, very improbable. It is true that a *kafila* of China tea has arrived at Yarkand, but in all probability it has only come from Kara Shahar, where it has been in store for several years since the Chinese were driven out. There are said to be enormous stores of tea in the ruined city of Kara Shahar. This city is two marches beyond Koila, the most Easterly town of the Kushbegi's dominions, and Rumchi is eight marches further to the East on the main road to China.

30. The latest news received from Yarkand is dated October 26th, just after the envoy had left for Ladak.

A.

Imports into Lé from Yarkand and Chanthang during 1869.

Names of Articles.	Quantity in maunds of 80 lbs.						Rate in Lé.	Value in Lé.	Remarks.
	By Yarkand.		By Chanthang.		Total.				
	Mds.	S.	Mds.	S.	Mds.	S.	Rs.	Rs.	
Bhung ...	1,025	34	.....		1,025	34	62-8 per md.	64,116	
Pushm ...	268	28	260	0	528	28	50 „	26,435	
Wool (sheep's) ...	.....		160	0	160	0	15 „	2,400	
Coarse cloth ...	72	20	.....		76	20	87-8 „	6,348	
Tea, brick, green ...	.....		431	24	431	24	180 „	77,688	From Lhassa.
„ „ black ...	.....		91	8	91	8	90 „	8,210	From Lhassa.
Silk ...	127	1	.....		127	1	400 „	50,810	On export to the Punjab, the silk has proved to be of lower value than was asked in Lé,—not more than Rs. 320 per maund.
Jade stone ...	0	28	.....		0	28	.....	700	On export to the Punjab, the silk has proved to be of lower value than was asked in Lé,—not more than Rs. 320 per maund.
Rewanchini ...	1	20	.....		1	20	80 „	120	On export to the Punjab, the silk has proved to be of lower value than was asked in Lé,—not more than Rs. 320 per maund.
Gillar patar ...	6	0	.....		6	0	40 „	240	On export to the Punjab, the silk has proved to be of lower value than was asked in Lé,—not more than Rs. 320 per maund.
Thread, &c. ...	0	36	.....		0	36	.....	56	Seaweed used as medicine.
Soap ...	1	36	.....		1	36	40 „	76	
Jadwar, Zadoari ...	.....		2	0	2	0	1,600 „	3,200	Used as a medicine, &c.
Borax ...	.....		200	0	200	0	10 „	2,000	
Phulli ...	.....		140	0	140	0	1-4 „	175	Soda earth.
Salt ...	.....		10,000	0	10,000	0	1 „	10,000	
Sulphur ...	.....		220	0	220	0	15 „	3,300	
Saltpetre ...	.....		84	0	84	0	10 „	840	
Socks, &c. ...	15 in No.		.....		15 in No.		.....	68	
Mushru, &c. ...	119 thans		.....		119 thans		.....	372	Silk and cotton fabrics.
Carpets ...	358 in No.		.....		358 in No.		.....	2,518	
Felts ...	3,159 „		.....		3,159 „		2 each	6,318	
Kimsan, &c. ...	1,879 „		.....		1,879 „		1 „	403	Colored leathers.
Broadcloth ...	6 thans		.....		6 thans		150 per than	900	Russian.
Tawar ...	1 „		.....		1 „		50 „	50	China silk.
Dariai, &c. ...	4,046 „		.....		4,046 „		.....	5,496	Silk manufactures from Yarkand.
Posteen, &c. ...	32 in No.		.....		32 in No.		.....	812	Made of China and Russian furs.
Chowris ...	603	0	.....		603	0	1-8 each	905	Yaks' tails.
Kurus, silver ...	338	0	.....		338	0	170 „	57,460	Chinese silver coins or ingots.
Gold dust ...	3,160 tolas		450 tolas		3,610 tolas		13 per tola	46,930	
Jewellery, &c. ...	9 boxes		1 box		10 boxes		.....	24,200	Six boxes of turquoises, one box of coral, one box of manufactured jewellery.
Gold thread ..	7 bundles		.....		7 bundles		.....	305	Russian.
Embroidery, gold ...	2 thans		.....		2 thans		25 each	50	
Caps ...	55 in No.		.....		55 in No.		1 „	55	
Knives, Chinese ...	15 „		.....		15 „		2 „	30	
Mamiran-i-chini ...	30 tolas		.....		30 tolas		1 per tola	30	A drug.
Musk bags ...	.....		450 in No.		450 in No.		10 each	4,500	
Borese ...	.....		125 thans		125 thans		15 per than	1,875	Coarse woollen cloth.
Zankos ...	.....		75 „		75 „		8 „	600	Do. do.
Pattu ...	.....		50 „		50 „		8 „	400	
Kidakh ...	.....		2,000 „		2,000 „		8 annas per than	1,000	Strips of fine linen cloth used by the Lamas.
Paper ...	.....		2,000 sheets		2,000 sheets		20 per 100	400	
Incense ...	.....		4 boxes		4 boxes		.....	200	
Total ...	1,505	3	11,588	32	13,093	35	.....	4,12,587	From Yarkand Rs. 2,78,799 „ Chanthang „ 1,33,788 Total ... „ 4,12,587

B.

Table of Imports into Ladakh from the Punjab during 1869.

Names of Articles.	Quantity in maunds of 80 lbs.				Rate in Lé.	Value.	Remarks.
	By Kullu.	By Rampore.	By Cashmere.	Total.			
	Mds. S.	Mds. S.	Mds. S.	Mds. S.	Rs.	Rs.	
Buzzazi, piece goods ...	128 33	25 7	173 13	327 13	175 per md.	57,281	
Spices ...	137 18	10 24	101 12	249 14	40 „	9,973	
Sugar ...	286 35	8 6	18 29	313 30	40 „	12,550	
Lakhi, red skins ...	244 36	0 5	242 13	478 14	64 „	30,214	
Indigo ...	35 3	7 10	26 34	69 7	160 „	11,108	
Copper vessels ...	28 13	2 1	18 19	48 33	100 „	4,883	
Iron ...	41 21	5 34	.....	47 50	30 „	1,421	
Tea ...	69 1	.....	32 7	101 8	180 „	18,216	Kangra & China teas.
Tamarind ...	14 27	.....	11 32	26 19	40 „	1,060	
Preserves, &c. ...	8 16	.....	0 32	9 8	40 „	368	
Rice ...	12 32	.....	.....	12 32	5 „	64	
Sank (shells) ...	9 16	.....	0 27	10 3	100 „	1,008	
Nowsáda ...	0 18	.....	0 18	0 36	80 „	72	Sal ammoniac.
Lac ...	.....	.....	0 12	0 12	40 „	12	
Haberdashery ...	4 17	.....	6 21	10 38	150 „	1,642	
Senna ...	28 6	12 26	12 16	43 8	20 „	864	
Soap ...	1 8	.....	.....	1 8	40 „	48	
Treacle ...	7 1	.....	.....	7 1	25 „	176	
Majeet, red dye ...	0 16	.....	.....	0 16	20 „	8	
Hallela, &c. ...	15 32	.....	.....	15 32	20 „	316	
Drugs, &c. ...	10 12	.....	13 24	23 36	40 „	956	
Otter skins ...	6,797 in No.	305 in No.	1,000 in No.	8,102 in No.	4 each	32,408	
Kalgi ...	328 „	.....	.....	328 „	1 for 3	109	Heron plumes.
Broadcloth ...	7 thans	2 thans	5 thans	14 thans	150 per than	1,750	
Koran (books) ...	1,006 in No.	.....	500 in No.	1,506 in No.	2 each	3,012	
Brocades ...	15 thans	.....	10 thans	25 thans	100 per than	2,500	
Tawar (silks) ..	.....	.....	11 thans	11 thans	50 each	550	
Snuff	.....	.....	17 bottles	17 bottles	3 „	51	
Guns, rifles, &c. ...	11 in No.	.....	50 in No.	61 in No.	.....	2,330	Chiefly English.
Powder and caps ...	.....	.....	80 boxes	80 boxes	5 each	400	
Corals	4 tolas	.....	.....	4 tolas	4 per tola	16	
Shoes	164 pairs	24 pairs	.....	188 pairs	2 each	376	
Combs	15 scores	.....	.....	15 scores	1 per score	15	
Dyes, Aniline ...	10 boxes	.....	.....	10 boxes	20 per box	200	
Total ...	1,085 1	71 33	649 29	1,806 33	.....	1,95,957	

C.

Exports from Ladak to Yarkand and Chanthang during 1869.

Names of Articles.	Quantity in maunds of 80 lbs.						Rate in Lé.	Value in Lé.	Remarks.
	To Yarkand.		To Chanthang.		Total.				
	Mds.	S.	Mds.	S.	Mds.	S.	Rs.	Rs.	
Buzzazi (piece goods) ...	323	12	15	0	338	12	175 per md.	59,202	English calicos, &c., from the Punjab.
Coarse cloth ...	.....		25	0	25	0	87-8 „	2,188	
Spices ...	403	9	15	0	418	9	40 „	16,729	
Sugar ...	180	13	15	0	195	13	40 „	7,813	
Lakhi, red skin ...	438	17	6	0	444	17	62-8 „	27,777	
Tea ...	132	17	.....		132	17	180 „	23,836	Kangra and China teas.
Indigo ...	77	33	4	20	82	13	160 „	13,172	
Copper vessels ...	1	20	2	0	3	20	100 „	350	
Tin ...	3	0	.....		3	0	125 „	375	
Drugs, &c. ...	19	32	....		19	32	40 „	792	
Anola ...	1	20	.....		1	20	20 „	30	A drug.
Haberdashery ...	6	0	2	0	8	0	150 „	1,200	Needles, thread, &c., &c.
Currants, dried ...	.....		25	0	25	0	15 „	375	From Skardo.
Apricots, „ ...	.....		100	0	100	0	5 „	500	
Dates, &c., „ ...	.....		2	0	2	0	40 „	80	
Saffron ...	.....		1	16	1	16	1,600 „	2,240	From Cashmere.
Ditto leaves ...	.....		1	0	1	0	160 „	160	
Iron, &c. ...	.....		2	0	2	0	30 „	60	
Majeet, red dye ...	.....		16	0	16	0	20 „	320	From Skardo.
Rice ...	.....		150	0	150	0	5 „	750	
Barley, &c. ...	.....		1,430	0	1,430	0	1-4 „	1,788	From Cashmere and Ladak.
Flour, &c. ...	.....		1,330	0	1,330	0	1-8 „	1,995	
Ghee ...	.....		56	0	56	0	20 „	1,120	
Silver ...	.....		1	0	1	0	3,200 „	3,200	English Rupees.
Otter skins ...	8,853 in No.		19 in No.		8,863 in No.		4 each	35,452	
Fox skins ...	375 „		.....		375 „		1 „	375	
Felts ...	.....		2,660 in No.		2,650 „		2 „	5,300	Imported from Yarkand.
Carpets ...	.....		151 „		151 „		.....	850	
Turquoises and corals ...	.....		8 boxes		8 boxes		.....	6,800	
Koran (books) ..	2,000 in No.		.....		2,000 in No.		2 each	4,000	
Guns, rifles, &c. ...	70		.....		70 „		.....	3,730	The guns and rifles chiefly of English make.
Powder and caps ...	80 boxes		.....		80 boxes		5 „	400	English.
Aniline dyes ...	15		.....		15		20 „	300	
Brocade ...	31 thans		10 thans		41 thans		100 „	4,100	
Merino, &c. ...	12 „		10 „		22 „		50 „	1,100	
Broadcloth ...	5 „		7 „		12 „		150 „	1,800	English.
Cashmere pushmina ...	18 pairs		10 pairs		28 pairs		100 „	2,800	Pushmina chadars, sheets.
Balti chadars ...	.....		15 „		15 „		40 „	600	
Embroidered cloth ...	.....		3 thans		3 thans		25 „	75	
Dariai ...	.....		45 „		45 „		6 „	270	Silk manufactures from Yarkand.
Wooden slates ...	.....		75 in No.		75 in No.		1 „	75	From Cashmere.
„ boxes ...	.....		75 „		75 „		2 „	150	
Shoes ...	.....		85 pairs		85 pairs		1 „	85	
Kimsan, &c. ...	.....		295 pieces		295 pieces		.....	73	Colored leather.
Puttu chadars ...	.....		55 „		55 „		5 „	275	
Kurus, silver ...	.....		115 in No.		115 in No.		170 „	19,550	From Yarkand.
Total ...	1,587	13	3,198	36	4,786	9	.....	2,54,212	To Yarkand ... Rs. 1,96,323 „ Chanthang ... „ 57,889 Total ... „ 2,54,212

D.

Table of Exports from Ladak to the Punjab during 1869.

Names of Articles.	Quantity in maunds of 80 lbs.								Rate in Lé.	Value in Lé.	Remarks.
	By Kullu.		By Rampore.		By Cashmere.		Total.				
	Mds.	S.	Mds.	S.	Mds.	S.	Mds.	S.	Rs.	Rs.	
Bhung ...	1,337	12	89	0	168	6	1,594	18	62-8 per md.	99,654	
Pushm, wool ...	93	10	...		56	0	149	10	50 „	7,463	* Formerly sent to Ladak and now turned.
Silk ...	61	13	...		49	22	110	35	400 „	44,350	
Opium ...	.....		...		53	13	53	13	600 „	31,990*	
Phulli, soda earth ..	70	36	...		.....		70	36	1-4 „	89	Soda earth.
Gillar patar ...	4	16	...		.....		4	16	40 „	176	Seaweed, used as a medicine.
Coarse cloth ...	0	28	...		.....		0	28	87-8 „	60	
Dried currants ...	0	17	...		.....		0	17	15 „	6	
Jade stone ...	0	17	..		.....		0	17	.....	400	
Silver ...	.....		...		0	20	0	20	3,200 „	1,600	Broken silver from Yarkand.
Numda, felts ...	1,608 in No.		96 in No.		25 in No.		1,729 in No.		2 each	3,458	
Carpets ...	323 „		8 „		5 „		336 „		.....	2,838	
Dariai, &c. ...	451 thans		...		3,335 thans		3,786 thans		.....	4,561	Silk fabrics.
Mushru and chakman ...	44 „		50 thans		7 „		101 „		.....	396	Silk & cotton fabrics.
Posteen ...	8 in No.		...		.....		8 in No.		100 „	800	Russian and Chinese furs.
Chowris ...	525 „		...		44 in No.		569 „		1-8 „	854†	† Yaks' tails.
Kurus, silver ...	200 „		...		172 „		372 „		170 „	63,240	
Gold dust ...	1,453 tolas		...		1,550 tolas		3,003 tolas		13 per tola	39,039	
Gold thread ...	5 bundles		...		.....		5 bundles		50 each	250	
Turquoise ...	1 box		...		1 box		2 boxes		800 per box	1,600	
Jewellery ...	40 articles		...		.....		40 articles		350 each	14,000	
Chinese knives ...	.....		..		18 in No.		18 in No.		2 „	36	
Total ...	1,568	29	89		327	21	1,985	10	.....	3,16,860	

E.

Imports into Ladak from Cashmere territories during 1869.

Names of Articles.	Quantity in maunds of 80 lbs.							Remarks.
	From Cashmere.		From Skardo.		Total.		Rate in Lé.	Value in Lé.	
	Mds.	S.	Mds.	S.	Mds.	S.	Rs.	Rs.	
Iron	10	10	.....		10	10	30 per md.	308	
Honey	14	32	.....		14	32	25 „	371	
Tobacco	48	34	.....		48	34	20 „	975	
Rice	341	0	.....		341	0	5 „	1,705	
Soap	4	30	.. ...		4	30	40 „	190	
Majeet	.....		13	37	13	37	20 „	269	Red dye.
Saffron	1	38	.....		1	38	1,600 „	2,120	
Ditto leaves	1	0	.....		1	0	160 „	160	
Silver	5	9	.....		5	9	3,200 „	16,720	English Rupees.
Lakhi, red skins ...	75	26	.....		75	26	62-8 „	4,728	Prepared in Cashmere.
Anola, Hallela	12	0	... ...		12	0	20 „	240	Medicinal drugs.
Oil	3	0	.....		3	0	25 „	75	
Currants, dried	.....		15	0	15	0	15 „	225	
Apricots, ditto	.....		85	0	85	0	5 „	425	
Butter	.....		46	0	46	0	20 „	920	
Chadars, pushmina ...	35 pairs		93 pairs		128	0	.....	5,288	
Puttu, &c.	39 thans		.....		39 thans		.....	246	
Misceln., combs, paper, &c. ...	591 in No.		... ..		591 in No.		.....	602	
Embroidered cloth ...	16 thans		... ..		16 thans		8 each	128	
Kajri, horse trappings ...	7 in No.		.....		7 in No.		8 „	56	
Swords, guns, &c. ...	15 „		.....		15 „		.....	425	Of Cashmere manufacture.
Shoes, &c. ...	3,204 pairs		.....		3,204 pairs		.....	3,185	
Chogas, cloth ...	2 in No.		.....		2 in No.		80 each	160	Embroidered robes.
Hashia (borders of shawls) ...	250 yards		.....		250 yards		1 per yard	250	
Wooden slates ...	64 in No.		.....		64 in No.		1 each	64	Takhta mashk used in Lhassa.
Sultak, wooden boxes ...	65 „		.....		65 „		2 „	130	Used for carrying flour.
Stone vessels ...	.....		35 in No.		35 „		1 „	35	
Total ...	518	19	159	37	678	16	.....	40,002	

F.

Exports from Ladak to Cashmere territories during 1869.

Names of Articles.	Quantity in maunds of 80 lbs. To Cashmere.		To Skardo.		Total.		Rate in Lé.	Value in Lé.	Remarks.
	Mds.	S.	Mds.	S.	Mds.	S.		Rs.	
Pushm, white	614	0	8	34	622	34	50 per md.	31,143	From Yarkand and Chanthang.
Ditto, black	92	39	.....		93	39	25 ,,	2,325	Ditto.
Bhung	11	0	8	37	19	37	62–8 ,,	1,236	Ditto.
Tea, brick, green	158	25	2	0	160	25	180 ,,	28,912	Brick tea from Lhassa.
Buzzazi, piece goods	.....		18	18	18	18	175 ,,	2,228	English goods imported from Punjab.
Coarse cloth	.....		1	13	1	13	87–8 ,,	116	From the Punjab.
Sugar	.....		1	15	1	15	40 ,,	55	Ditto.
Borax	15	14	.....		15	14	10 ,,	154	
Phulli, soda earth	25	24	.....		25	24	1–4 ,,	33	
Copper vessels	.....		21	15	21	15	100 ,,	2,138	From the Punjab.
Iron	.....		4	14	4	14	30 ,,	132	
Silk	.....		0	2	0	2	400 ,,	20	From Yarkand.
Jade stones	0	7	.....		0	7	.....	200	Ditto.
Pushmina thread	2	9	.....		2	9	320 ,,	712	Thread spun in Ladak.
Dried apricots	0	16	.....		0	16	5 ,,	2	From Skardo.
Cotton	0	8	.....		0	8	40 ,,	8	From Yarkand.
Numda, felts	751 in No.		54 in No.		805 in No.		2 each	1,610	Ditto.
Carpets	25		.....		25	,,	.....	172	Ditto.
Pushmina chadars	12 pairs		.....		12 pairs		.....	240	From Bultistan.
Puttu	19 in No.		.....		19 in No.		.....	152	Made in Ladak.
Posteen	2	,,	.....		2	,,	12 ,,	24	Made of Ladak lamb skins.
Shoes	.....		7 pairs		7	pairs	1 ,,	7	Made in Sirrinuggur.
Guns and swords	.....		4 in No.		4 in No.		.....	70	Of Indian make.
Koran, copies of	.....		6	,,	6	,,	2 ,,	12	From the Punjab.
Chowris, Yaks' tails	5 in No.		.....		5	,,	1–4 ,,	6	From Yarkand.
Gold thread, false	1 bundle		.....		1 bundle		5 ,,	5	Russian, brought from Yarkand.
Dariai	14 thans		.....		14 thans		6 ,,	84	Silk fabrics from Yarkand.
Mushru	6	,,	.....		6	,,	4 ,,	24	Silk and cotton, ditto.
Silks, Chinese	2	,,	.....		2	,,	50 ,,	100	From Yarkand.
Total ...	920	22	66	30	987	12	.....	71,919	

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

IMMIGRANTS IN THE COLONY OF SAINT VINCENT.

Public.

No. 32.

INDIA OFFICE;
London, the 7th April 1870.

To His Excellency the Right Hon'ble the Governor General of India in Council.

MY LORD,—I forward herewith, for the information of your Excellency in Council, a copy of a despatch* from the Governor in Chief of the Windward Islands, with accompanying correspondence,† transmitting a very favorable report for the first half of 1869, on the immigrants in the Colony of Saint Vincent. I also enclose a copy of a letter‡ addressed by the Chairman of the Emigration Board to the Colonial Office, reporting upon the above papers, and of a despatch from the Secretary of State for the Colonies to Governor Rawson.

* No. 700, dated 3rd December 1869.

† Dated 19th January 1870.

‡ No. 87, dated 26th January 1870.

I have the honor to be,

MY LORD,

Your Lordship's most obedient, humble Servant,

ARGYLL.

From R. W. BAWSON, ESQ., Governor of the Windward Islands, to the Right Hon'ble EARL GRANVILLE, K.G., &c., &c., &c.,—No. 700, dated Barbadoes, the 3rd December 1869.

I HAVE the honor to forward copy of a despatch from the Lieutenant-Governor of St. Vincent,* enclosing the report of the Immigration Agent of that Colony for the half-year ended 30th June last.

* Lieutenant-Governor Berkeley, No. 658, 24th September 1869.

2. I also forward copy of a despatch* which I wrote to Mr. Berkeley on the subject of this report with the original of his reply, and of the Agent's explanations.

* Governor Rawson, No. 873, 28th September 1869.

3. Your Lordship will perceive that the high-flown language of the Agent provoked, in my mind, a doubt as to the correctness of his statements. Mr. Berkeley's report,* however, and the explanations given of the special causes of the Agent's unusually frequent visits, have removed the grounds of my suspicion.

* Lieutenant-Governor Berkeley, No. 689, 23rd November 1869.

But the intimation of it may be serviceable in suggesting a greater caution to the Agent and an increased vigilance to the Lieutenant-Governor in superintending the operations and in accepting the reports of his somewhat euphuistic subordinate.

From the HON'BLE G. BERKELEY, Lieutenant-Governor of Saint Vincent, to the Governor of the Windward Islands,—No. 658, dated Saint Vincent, the 24th September 1869.

I HAVE the honor to transmit to your Excellency the Immigration Agent's Report for the half year ended 30th June last, with several schedules attached.

2. These documents will, I trust, exhibit a continuance of that satisfactory position which has characterized the system of Indian immigration since its commencement in this Colony.

3. With regard to the Agent's comments upon the inadequacy of the salary attached to his office, under existing circumstances, I would beg to remark that in compliance with the permission granted in the Duke of Newcastle's despatch No. 9 of the 18th September 1859, the Immigration Agent holds his office as such in combination with another civil appointment, viz., that of Clerk of the Legislative Assembly, the salary of which is £168 per annum, so that the present Officer is in receipt from the Treasury of an income of £268, besides an allowance of £50 for horse keep.

I am not, however, at all prepared to deny that his duties as Immigration Agent have greatly increased since his appointment in 1864.

From R. W. RAWSON, ESQ., Governor of the Windward Islands, to the Lieutenant-Governor of Saint Vincent,—No. 873, dated Barbadoes, the 28th September 1869.

I HAVE received your Excellency's despatch No. 658 of 24th instant, enclosing the report of the Immigration Agent for the half year ended 30th June last.

2. I have read this report with interest. It gives a very favorable account of the condition of the Indian Immigrants, but one so highly-colored and extravagant in several respects that I can neither accept it nor forward it to the Secretary of State until it is confirmed by yourself, after enquiry into some of the principal statements. It was an act of over-indulgence on your part in receiving and forwarding it without similar comments.

3. I adopt this course in the interest both of the Agent and the Planters. If the present report were to be subjected to the experienced criticism of the Commissioners of Emigration, it would provoke suspicion if not a formal enquiry which, though the result might be favorable to Mr. Brown, would be disadvantageous both to him and the Island.

4. I refer your Excellency especially to the remarks on Schedule B., where the employers, medical attendants, and nurses are described in an unqualified and, to an experienced judge, an incredible strain of eulogy. Also to those on visits to estates in which the Agent reports that his visits have been "well nigh monthly." That Mr. Brown should have visited one or more estates in each month is easy to be understood; that he visited any large proportion of them "well nigh monthly" would be so creditable to his zeal that it deserves special enquiry and approbation if it does not prove a figure of speech. In which case it is desirable for Mr. Brown's credit that it should be altered before the report is forwarded.

5. The tests which occur to me as applicable to the above enquiries, your own experience will suggest others are an enquiry by some independent agency, *e. g.*, the Police Magistrates as to the records of the medical attendance on a few estates, and a return to be furnished by Mr. Brown himself of the dates of each visit for official purposes to the several estates during the half-year in question.

6. With regard to the amount of his salary, you will point out to Mr. Brown that the number of estates to be visited in Grenada is double that of those under his charge, and the number of coolies considerably more than double. The Agent in Grenada holds no other office. In St. Vincent the duties have been intentionally assigned to the holder of another office for the purpose of economy. The only question in my mind is, whether they might not be transferred to an Officer holding some less incongruous office than that of Clerk to the Legislative Assembly with advantage to the Public Service.

From the HON'BLE G. BERKELEY, Lieutenant-Governor of St. Vincent, to the Governor of the Windward Islands,—No. 689, dated St. Vincent, the 23rd November 1869.

I HAVE the honor to acknowlege the receipt of your Excellency's despatch No. 873 of the 28th September, taking exception to certain portions of the Immigration Agent's Report for the half year ended the 30th June.

2. Having communicated the subject of your Excellency's despatch to Mr. Brown, I have the honor to transmit a letter* which I have received in reply; and as I have every reason to believe from indirect sources of information that Mr. Brown's statements are upon the whole correct, I have abstained without further reference to your Excellency from pursuing the investigation through any other channel.

* 10th October 1869.

3. With respect, however, to the frequency of Mr. Brown's visits to the estates during the half-year, I may remark that this circumstance is unconnected with causes calling for the special supervision of the Immigration Agent; neither is Mr. Brown, on this account, entitled to commendation for any over-zeal in the performance of this particular portion of his duties; but it so happened that, during the half-year in question, the Immigration Agent's presence was required upon the estates for certain exceptional reasons, and Mr. Brown took advantage of those occasions to enquire into the general condition of the immigrants, taking credit to himself in each instance for a separate visit as if made in the ordinary course of inspection.

4. I consider it right to inform your Excellency with respect to the medical attendance that, since forwarding Mr. Brown's Report, it came to my knowledge that, for a certain period subsequent to the 30th June, a break occurred in the regular periodic visits to certain of the estates, owing to the absence from the Island of two medical practitioners and the severe indisposition of a third, who had undertaken to perform their duties during their absence. I am happy to add, however, that no inconvenience ensued, as the immigrants on the estates in question were free from sickness during the interval. The measures which I adopted to guard against future neglect of the regulations on this subject will be more particularly referred to when I forward the Agent's Report for the current half-year.

From J. H. BROWN, ESQ., Immigration Agent of Saint Vincent, to the Hon'ble the Colonial Secretary,—dated Saint Vincent, the 10th October 1869.

I HAVE the honor to acknowledge your letter on the subject of my report on immigration for the half year ended the 30th day of June last.

I learn with concern that His Excellency the Governor in Chief, while he has read the report with interest, can neither accept it nor forward it to the Secretary of State unless some of the principal statements which he considers too highly-colored are confirmed. I receive His Excellency's doubts with submission; but as I cannot retract or alter what I wrote with deliberation and with faith in its correctness, I hope by the presentation of corroborative testimony for His Excellency's consideration to remove the impressions he has formed.

His Excellency particularly refers to Schedule B., which speaks of the employer's medical attendants and nurses, and mentions that my visits to estates had been "well nigh monthly."

I beg to annex, in original, certificates as to the statements in Schedule B. from the Attornies and Managers of 13 estates (others received prior to mail day will be forwarded), all of whom, I am able to say, would invite any investigation as to their correctness which His Excellency might be pleased to order.

His Excellency observes that to have visited any large proportion of the estates "well nigh monthly" would be so creditable to my zeal as to deserve special enquiry and approbation if it should prove that my statement is not a figure of speech. I should be liable to the imputation of extraordinary callousness of feeling did I not express how acutely I feel the humiliating idea conveyed in this observation. But with this brief remark I confine myself to the point at issue.

His Excellency is of opinion that visits so numerous would provoke suspicion, and, if enquired into, would be disadvantageous to the Island and myself.

That the visits were made not figuratively but by actual presence His Excellency has now proof and not from my own pen, and under the circumstances which induced them an investigation, I will respectfully show, would more strongly confirm than my words can, that they were favorable to all interests concerned.

I am only required by law to pay one official visit semi-annually; but for the half year ended 30th June, I had a three-fold object in visiting the estates with frequency.

On the 16th of January, the first period of indentures of the Indian immigrants per *Countess of Ripon* expired, and it was incumbent upon me to repair to the various properties to place the people under re-indenture for their further term of two years. Secondly, it was necessary to go from estate to estate to discover the temper and feelings of the people who were to become entitled to a back-passage to India in June as to re-indenturing, and it was upon this enquiry, I founded a report to the Government which led to the introduction of the Act sanctioning the payment of a gratuity in lieu of a back-passage; and, thirdly, it was required of me, as I felt to call upon the estates to learn if the requisite arrangements were made for the reception of the immigrants expected per *Imperatrice Eugenie*. At these times, general details came under my observation. I hope His Excellency will be of opinion that from visits paid with these intentions no prejudicial conclusions could be drawn.

My report for the half-year ended 31st December 1868 was received by Earl Granville with "perfect satisfaction," and that for the previous half-year was subjected to the criticism of the Commissioners of Emigration, and their comments on each paragraph accompanied the Duke of Buckingham's despatch, which stated that all required for the coolie in St. Vincent was done.

The number of estates on which immigrants are *now* located are 25 in number. Richmond and Richmond Vale are situated in the extremity of the Leeward District, Tourama, and four neighbouring estates in the Charil country.

The localities are 50 miles apart. The *Grenada Chronicle*, some time ago, contained the report of the Agent as laid before the legislature for the half-year ended 31st December last, showing the number of immigrants, I think, at 1,600 odd.

We have under indenture as shown by Schedule to 30th June	722
Arrived per *Imperatrice Eugenie*	300
Accepted gratuity and re-indentured	104
(To come forward)	25
Indentured Portuguese and Africans	22

To this have to be added the people 280 per *Travancore* under surveillance on their last period of industrial residence (the greater number will be re-indentured when the numbers of estates will no doubt be increased).

I am aware that the office of Immigration Agent was assigned to the clerkship of the Executive Committee for economy; but as the scheme is assuming a larger character, the remarks on the subject I ventured upon, I did not think unjustified.

I hope His Excellency the Governor in Chief will receive the explanations of my report and the testimony as to its correctness as satisfactory.

From J H. BROWN, ESQ., Immigration Agent of St. Vincent, to the Hon'ble the Colonial Secretary,—dated St. Vincent, the 16th September 1869.

I HAVE the honor to submit my report on the state of immigration in this Colony as regards Indians, Africans, and Portuguese for the half-year ended the 30th day of June last. As I feel some explanation is due to the Government to account for the delay in the presentation of this document, I may be allowed to say that it must be quite within the knowledge of His Excellency the Lieutenant-Governor and yourself how wholly my time has been engrossed first in receiving and allotting the immigrants per ship *Imperatrice Eugenie*, and in indenturing them to the plantation dispersed over the face of the Colony, and, secondly, in carrying out the provisions of the Act so important to the Immigration Fund as well as to the agricultural interests, empowering a bounty to be offered to the Madras immigrants in lieu of a back-passage to India to which they had a right to prefer a claim on the last day of the half-year. The details of these arrangements will appear in my next report; but this is not an inopportune moment briefly to say that my most sanguine expectations have been amply realised, and that it will be shown hereafter, that not only has a considerable amount of trained labor been retained to the Colony, but in round numbers, not short of ten thousand dollars, have been economized.

* A. B. C. D. and E.

2. Enclosed are five Schedules* developing the prominent features of the subject-matter of this report.

SCHEDULE A.

Births.—The number has been 14, and the plantations are given on which they occurred.

SCHEDULE B.

Deaths.—The number shown nine. The plantations where the deceased were located are named, and the cause of death as certified in the medical registers by the Doctors attending, stated. Under the head of "remarks" I have alluded to points to which I pay the most scrupulous attention, the punctual visits of the Doctor, the presence in the Manager's house, of all the medicines required by regulation under the Immigration Law, and the attendance of nurses on the sick. I am glad to affirm that on no occasion, during the six months, have I had reason to find any fault whatever as to want of attention to these most essential particulars. The employers, I write it to their credit, are excessively attentive to their ailing immigrants, and the medical attendants, though only agreeing to one visit per week, do not scruple, when circumstances require, to repeat them as frequently as necessary. The nurses are elderly and experienced in their duties, and from their habits seldom absent from the plantation.

SCHEDULE C.

A general statement as to numbers of *indentured* Indian immigrants incorporates the foregoing schedules, and exhibits numbers and particulars of labor and earnings.

Indentured.

Numbers.—The numerical strength on 20th June was 722
" " " 31st December 1868 717,
which gives an increase of 5.

Removals.—None took place during the half year.

Vide Schedule C.

Labor.—The number of days on which labor was performed amounted to 63,519
Sickness and holidays to 20,403
Idleness to 11,464
The total earnings to $10,017-54

The average earnings are extended. On most estates the average is an improvement upon that of the last half-year, as it was on the foregoing. The employer requires labor, and it commands its price, as he is willing to pay, as he frequently does, in excess of the contract rates for work performed. This discrepancy therefore between the apparent earnings on the plantations can only be accounted for by the difference between idleness and industry, and also by some plantations having more 2nd and 3rd class laborers than others.

SCHEDULE D.

Crimes and Offences.—My semi-annual reports have heretofore shown an immunity from aggravated offences. The present calendar records three cases of sheep-stealing, still I consider, as a whole, it justifies the conclusion that the immigrants are trained under judicious control, and are well and peaceably disposed.

SCHEDULE E.

Particulars as to African and Portuguese Immigrants.—This Schedule does not vary from that submitted for 31st December 1868, with the exception of noting the desertion of five Africans who have not as yet been discovered.

3. *Visits to Estates.*—My half yearly visit as required by law was made in July to all the plantations having immigrant labor, but I can state that during the half year my visits have been well nigh monthly. I found on inspection the muster-roll books, medical registers, and official pay lists regularly kept, and all the provisions of the law maintained.

4. *Coolies* who have received free certificates after five years' labor and are discharging their three years' industrial residence.

The Madras coolies *ex Travancore*, 192 of whom received certificates, were on the last day of the half-year entitled to claim back-passage to India. The 280 Calcutta coolies *ex Castle Howard*, have to remain under surveillance until the 16th of April 1870. I anticipate the Government will in neither case be put to the heavy expense of sending these people back, but that they will, from their own free choice, accept a small gratuity and remain, securing to the Colony, thereby trained and acclimatized laborers.

5. *Health.*—The health of the Coolies on the whole is excellent, the death-rate is small being 1·25 for the half-year, including a case of drowning. The climate of the Colony seems well adapted to the coolie who speedily after arrival becomes strong and robust; and it is pleasing in passing through the plantations to witness this almost universal improvement, and to remark how cheerful and contented the immigrant appears,—a sure test of the general attention paid to his wants and comforts, and that he is well and regularly paid.

6. *Relations between Master and Servant.*—It has been and still continues my pleasing duty to report that the most desirable understanding exists in all cases between the employers and their Indian servants. The laborer has full confidence in his master, and the master appreciates services without which, notwithstanding the greatly improved system of cultivation, his crops would sadly fall off. We have this good feeling and self-interest at work on both sides, serving to encourage the impression that these relations will be permanent.

7. *Provision for the Immigration Service.*—I observe that Earl Granville in a despatch, dated Downing Street, 14th May 1869, and addressed to Governor Rawson, C.B., intimates "that he will not authorize the removal of immigration into Grenada until after an efficient agency is provided for", and that "he is decidedly of opinion the Immigration Agent's emoluments, £250, is insufficient." These remarks are elicited by a remonstrance from the Immigration Agent in his Report *under the above head.* As for myself, I have no complaint to prefer. I am grateful for the many favors which in the discharge of my duties are extended to me: To His Excellency the Lieutenant-Governor for the access he accords me, and his courteous acquiescence in all matters worthy of his consideration for the benefit of the scheme of immigration, and to yourself for advice and assistance whenever it has been sought; still I think it my duty to the office I hold, specially to bring under Earl Granville's notice, that while the duties here must be as onerous and responsible as in Grenada, the number of immigrants to-day being nearly equal, the emolument is only £100 per annum! with an allowance of £50 for horse-keep, which horse must be purchased from the annual income. The last agent enjoyed the same salary (without horse-keep), when only a few Portuguese were under his charge. His Excellency has twice granted me a small sum to cover extra expenses, but no allowance whatever save that stated, has been guaranteed by law, although immigration has assumed such a different phase and become the back-bone of the agricultural interests of the Island. It does not become me to make any comment upon this. I leave the matter to His Lordship's attention.

Schedule A.

SAINT VINCENT.

Births.

Plantations.	Sex.		Remarks.
	Males.	Females.	
... ...	.....	1	*Nil.*
... ...	.....	2	
... ...	.....	1	
... ...	1	1	
.. ..	1	1	
... ...	1	1	
.. ..	1	.....	
.. ..	1	2	
	5	9	
Total	14		

Schedule B.

SAINT VINCENT.

Deaths.

Plantations.	Sex.				Remarks.
	Males.		Females.		
	Adults.	Children.	Adults.	Children.	
... ...	.....	.....	.....	1	Medical attendant, Dr. Cumming.
... ...	.....	.....	1	.....	Medicines required by law on plantations.
... ...	1	.....	1	.....	Sick nurses provided.
... ...	1	.....	.....	.....	Ditto ditto Checkley, as above.
... ...	1	.....	.....	.....	
... ...	1	.....	.....	.....	Ditto ditto Arnott, as above.
... ...	1	.....	.....	.....	Ditto ditto Checkley, as above.
	6	.....	2	1	
Total	9				

Causes of Deaths.

Orange Hill	1	F. Infant	...	... ...		Accidental drowning.
Lot 14	1	„ Adult.	...	... ...		Dropsy,—long ill.
Unions	1	„ „	...	Dysentery	1 F.	Adult Mal D'Estomac.
Argyle	1	„ „	...	... ...		Disease of Kidneys.
Calder	1	„ „	...	... ...		Dysentery.
Belleaire	1	„ „	...	... ...		Fever.
Richmond	1	„ „	...	... ...		Heart Disease.
Pembroke	1	„ „	...	... ...		Yaws prevalent just now.
	8				1	
Total as above ...	9					

Schedule C.

SAINT VINCENT.

Indentured Indian Immigrants in this Colony, on the 30th June 1869, with a statement of numbers at end of last half year, viz., on 31st December 1868, the intermediate Births and Deaths, with particulars of removals, labor and earnings.

Names of Plantations.	Total numbers on establishment on 31st December 1868.	From 31st December 1868 to 30th June 1869. Births.	From 31st December 1868 to 30th June 1869. Deaths.	Total numbers on establishment on 30th June 1869.	Removed or transported during half year.	Number of days on which labor was performed.	Number of days absent. Sickness and holidays.	Number of days absent. Idleness.	Number of work days in the half year.	Amount of earnings. Dollars.	Amount of earnings. Cents.	Average amount of earnings.	Remarks.
Tourama	51	1 F.	.....	52	None	5,057	1,200	1,332	7,589	719	63	14¼	There is a decrease in earnings; on only a few estates generally, the increase is considerable. 1st, 2nd, and 3rd class laborers are included in average.
Orange Hill	90	2 M & F.	1 F.	91		7,949	1,814	4,309	14,072	944	51	11¼	
Rabacca	40	.....	.....	40		3,150	420	30	3,600	425	29	13½	
Lot 14	60	1 F.	1 F.	60		6,080	2,020	64	8,164	894	28	14¼	
Langley Park	49	2 M & F.	.....	51		3,943	2,636	.....	6,579	763	13	19½	
Unions	66	2 M & F.	2 M. & F.	66		7,019	2,620	347	9,986	1,093	85	15½	
Argyle	73	2 M & F.	1 M.	74		6,338	2,119	1,245	9,702	1,295	64	20¼	
Arnos Vale	24	.....	.....	24		2,191	630	412	3,233	237	40	10¾	
Calder	18	.....	1 M.	17		1,215	235	410	1,860	178	69	14¾	
Carapan	55	3—2 F. 1 M.	.....	58		4,960	1,290	900	7,150	751	71	15	
Belleaire	26	.....	1 M.	25		1,790	674	84	2,548	347	45	19½	
Montrose	30	.....	.....	30		3,956	1,083	.....	4,139	521	24	17	
Rutland Vale	35	1 F.	.....	36		2,330	1,312	471	4,113	407	99	17½	
M. Wynne	21	.....	.....	21		2,206	221	174	2,601	336	87	15½	
Richmond	26	.....	1 M.	25		2,102	580	749	3,431	413	50	21	
Peter's Hope	24	.....	.....	24		2,125	522	872	3,519	324	30	15½	
Pembroke	27	.....	1 M.	26		2,008	1,027	65	3,100	332	66	16½	
Not indented	2	.....	.....	2									
Total ...	717	14	9	722	...	63,519	20,403	11,464	95,386	10,017	54		

Schedule D.

SAINT VINCENT.

Crime.

Description.	Number of Cases.
Sheep-stealing	3
Larceny	1
Breach of Contract	5
Assault	3
Total ...	12

Schedule E.

SAINT VINCENT.

Indentured Portuguese and African Immigrants on Plantations, 30th June 1869, *with numbers on 31st December* 1868, *with particulars of Births, Deaths, and Removals.*

Names of Plantations.	Nos. on Plantations on 31st December 1868.		From 31st December 1868 to June 1869,		Removed or deserted during half year.		Nos. on Plantation on 30th June 1869.		Remarks.
	African.	Portuguese.	Births.	Deaths.	African.	Portuguese.	African.	Portuguese.	
Belleaire	7	...	None.		...	...	7	...	Nil.
Sans Souci	3	...			...	...	3	...	
Argyle	8	...			5 deserted		3	...	
Unions	...	3	Amongst Africans or Portuguese.		...	...	3	3	
Rabacca	3	...			...	...	1	...	
Rutland Vale	1	...			...	...	2	...	
Ratho Mill	2	...							
	24	3			5		19	3	

From T. W. C. Murdoch, Esq., to Sir Frederic Rogers, Bart., &c., &c., &c.,—dated Emigration Board, the 19th January 1870.

I have to acknowledge your letter of 11th instant, with a despatch from the Governor of the Windward Islands, enclosing the reports of the Lieutenant-Governor and Immigration Agent of St. Vincent, on the immigrants in that Island for the six months ending 30th of June last.

2. The number of Indian immigrants on estates at that date under indenture was 722, the births in the half year had been 14, the deaths 9, being at the rate of 1·23 per cent. The immigrants are said to have been in excellent health, cheerful, and contented; well treated in every respect by their employers, and on the best terms with them. The report, like all recent reports from St. Vincent, is very satisfactory, so satisfactory, indeed, that Governor Rawson suspected exaggeration, and sent it back to be verified. The Immigration Agent, however, maintained its correctness, and I am aware of no reason to doubt it.

3. The Immigration Agent, at the conclusion of his report, calls attention to the small amount of his remuneration, £100 a year with £50 a year for travelling expenses. The Lieutenant-Governor, however, points out that he receives a further salary of £168 a year as clerk of the Legislative Assembly, and neither he nor the Governor recommend an increase. Under these circumstances, and looking to the small number of estates (only 18) on which the immigrants are employed, Earl Granville will probably not think that a sufficient case has been made out for his interference in the matter. In other respects the report calls for no action.

From Earl Granville, Secretary of State, to the Governor of the Windward Islands,—No. 87, dated Saint Vincent, Downing Street, the 26th January 1870.

I have the honor to acknowledge the receipt of your despatch No. 700 of the 3rd December, with one from the Lieutenant-Governor of St. Vincent, enclosing the very satisfactory report of the Immigration Agent of that Colony, for the half year ending 30th June last.

I referred your despatch to the Immigration Commissioners, and I transmit, for your information, a copy of their report. I agree with Sir T. Murdoch in the opinion that there are no sufficient grounds for increasing the salary of the Immigration Agent at St. Vincent.

Emigration Communication, 19th January.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

IRRIGATION OPERATIONS OF FUSL RUBBEE IN THE NORTH-WESTERN PROVINCES UP TO 31st MARCH 1870.

CANAL DIVISIONS.	Water distributed during March 1870.	Depth in Canal at Regulating Gauge.		Gross Consumption, cubic feet per second.		Navigation Return, Ganges Canal.				Land Irrigated (approximate).		Rain-fall.	
		Full supply, feet.	Actual throughout, feet.	Estimated full discharge.	Actual average throughout.	Nature of Traffic.	Up.		Down.		Zillah.	Acres.	Total from 1st October 1869 to 31st March 1870. / Average of nine previous years for the same period.
							No.	Mds.	No.	Mds.			
Ganges Canal. Northern	9·00	7·68		239	*Grains*— Wheat		300		20	Saharunpore	47,565	3·9 / 4·7
Meerut	6·80	6·53		1,222	Jowar		4,785			Mozuffernuggur	79,011	2·3 / 3·1
Futtehgurh	6·50	5·60		361	Bajra		35			Meerut	134,031	3·0 / 2·1
Boolundshuhur	5·75	3·55	5,585	163	Rice		1,888			Boolundshuhur	60,613	5·4 / 1·6
Allygurh	6·00	5·07		768	Gowid		822			Allygurh	50,441	11·2 / 3·0
Etawah	4·80	2·62		670	Moong		1,717			Mutra	12,478	2·9 / 1·5
Cawnpore	6·00	3·97		716	Muree		1,153			Agra	654	8·0 / 1·2
					Grain		1,066			Etah	16,795	9·7 / 1·5
					Urhur		1,170			Mynpoorie	23,896	4·9 / 2·6
					Muckha				20	Futtehgurh	7,485	6·7 / 1·7
					Total		11,958		20	Etawah	29,683	12·3 / 2·4
										Cawnpore	49,947	5·3 / 2·2
					Cotton			398		Dehra Doon	5,592	6·2 / 7·2
					Oil-seeds			812		Bijnour	315	8·6 / 3·0
					Salt					Tonal	641	7·6 / 6·0*
					Metals					Bareilly	7,109	7·3 / 2·9
					Building materials			2,593		Pharsie	971	5·9 / 2·8
					Miscellaneous goods			100		Humeerpore	596	6·3 / 1·5
					Fire-wood								
					Bamboos								
					Bullees								
					Kurrees								
					Logs								
					Miscellaneous timber								
					Passengers								
					Total		15,856		2,021			525,820	

CANAL DIVISIONS.	Actual throughout, feet.	Actual average throughout.	Total.	Up and Down.	Mds.	No.
Ganges Canal. Northern	7·68	239				
Meerut	6·53	1,222				
Futtehgurh	5·60	361				
Boolundshuhur	3·55	163				
Allygurh	5·07	768				
Etawah	2·62	670				
Cawnpore	3·97	716				
		Total	4,139			
Eastern Jumna Canal	3·46	696				
Doon Canals		113				
Rohilkhund Canals		349				
Total		5,297				

CANAL DIVISIONS.	Navigation Return, Ganges Canal.						Rain-fall.	
	Up.		Down.		Nature of Traffic.		Total from 1st October 1869 to 31st March 1870. / Average of nine previous years for the same period.	
	No.	Mds.	No.	Mds.				
Ganges Canal. Northern		20			*Grains*— Wheat		3·9 / 4·7	
Meerut					Jowar		2·3 / 3·1	
Futtehgurh					Bajra		3·0 / 2·1	
Boolundshuhur					Rice		5·4 / 1·6	
Allygurh					Gowid		11·2 / 3·0	
Etawah					Moong		2·9 / 1·5	
Cawnpore					Muree		8·0 / 1·2	
					Grain		9·7 / 1·5	
					Urhur		4·9 / 2·6	
					Muckha		6·7 / 1·7	
					Total		12·3 / 2·4	
							5·3 / 2·2	
					Cotton		8·6 / 7·2	
					Oil-seeds		6·2 / 3·3	
					Salt		3·15 / 1·5	
					Metals		7·6 / 6·0*	
					Building materials		7·3 / 2·9	
					Miscellaneous goods		5·9 / 2·8	
					Fire-wood		6·3 / 1·5	
					Bamboos			
					Bullees			
					Kurrees			
					Logs			
					Miscellaneous timber			
					Passengers			
					Total		..	..

REMARKS.

The mean volume of the Ganges Canal passing the Roorkee gauge during the month, was 4,430 cubic feet. The volumes discharged by the canal were as follows :—

Tail, Etawah Branch	..	42 cubic feet.
Escapes ,,	..	79 ,, ,,
Tail, Cawnpore ,,	..	220 ,, ,,
Escapes ,, ,,	..	No returns.
Total	..	341 cubic feet.

The Cawnpore and Etawah Branches have alternate weeks of high and low supply. The gauge readings show the mean of the month.

For the first half of the month the demand for water was great and general. Heavy showers about the middle of the month put an end to the demand all over the Doab, except in the Saharunpore and Mozuffernuggur Districts. The rainfall in these Districts, it will be observed, is below the average. Some damage was done to standing crops by hail.

In the south active "palev" of sugar-cane was commenced on the Eastern Jumna Canal. On the 5th of the month the reading of the Kulsea gauge was 2' 10", the lowest ever recorded in period of demand. The crops were reported to be suffering greatly, and the season for "palev" of sugar-cane was passing.

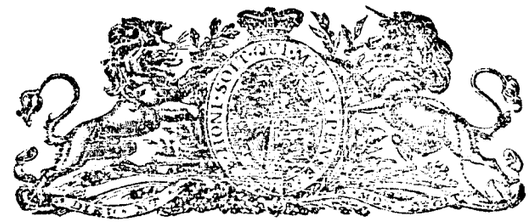
Fortunately rain fell on the 6th, as well in the Canal Districts as in the Hills, and afforded relief. By the middle of the month constant showers of rain and a rise in the river had put in rubbee crops out of danger, and enabled the "palev" of sugar to be actively prosecuted. In the Doon there was very little demand, owing to heavy rain.

W. G. ROSS, *Lieut., R.E.,*
Asst. to Chief Engineer, Irrigation Works, N. W. P.

ALLAHABAD;
The 20th April 1870.

* Average for five years only : rain-fall previous to 1864 not given.

No. 21 of 1870.



SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, JUNE 4, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

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GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

RAILWAY EXTENSION IN INDIA.

THE following extract from a despatch from the Secretary of State, to the Government of India, No. 21, dated 13th April 1870, is published for information in continuation of the papers which appeared in the Supplement *Extraordinary* to the *Gazette of India* of 27th August 1869, and in the Supplement of 27th November 1869, pages 1343 to 97 :—

Para. 1. I have had before me in Council your Excellency's despatch No. 2 of 6th January last, acknowledging receipt of two despatches from me, which communicated the views of Her Majesty's Government with respect to Railway extension in India, and reporting the arrangements made for giving effect to the instructions conveyed to you for the prosecution of the Rajpootana, Indus Valley, and Hyderabad Railways as State Works.

2. Of these arrangements I generally approve.

3. I notice with satisfaction the care that has been taken to place on a footing of equality the Civil and Military Engineers appointed to State Railways, and I approve of your having, in anticipation of my formal authorization, permitted such Engineers as have been selected for Railway duties, to draw whatever additional allowances they would be entitled to under the revised salary regulations recently submitted for my sanction. I am glad to observe, too, the stress laid by you on the necessity for the strictest economy of first outlay in all the adjuncts of a State Railway, the road and the machinery for working it alone being first class at the beginning, and all expensive accessories being postponed until called for and warranted by increased traffic. This is a principle which cannot be too strongly impressed upon all concerned.

No. 22 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, JUNE 11, 1870.

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GOVERNMENT OF INDIA.

HOME DEPARTMENT.

FISHERIES OF THE ANDAMAN ISLANDS.

From SURGEON F. DAY, F.L.S. and F.Z.S., d.d. P. W. D., Government of India, to the Officiating Secretary to the Government of India, P. W. Department.

I HAVE the honor to report having visited the penal settlement of Port Blair for the purpose of enquiring into its fisheries, the necessity of working them, and the possibility of doing so in a more efficacious manner than at present. The Superintendent was good enough to place every facility for observation at my disposal, and permitted Mr. Homfray to accompany me through the wilder parts amongst the aborigines, whilst I have obtained much useful information on the sanitary condition of the convicts from the exhaustive reports of Dr. Rean, the senior Medical Officer. I have been unable to submit my views to the Superintendent for his remarks, as he left the Settlement on three months' privilege leave, about five days after my arrival.

2. On December 25th, 1869, I left Calcutta for Port Blair, arriving there on the 29th. After passing a few days at that Station, examining the bays, creeks, and modes of fishing, I proceeded to Chatham on the 7th of January, and to Viper on the 8th. On the 9th we began working with the aborigines, in addition to examining the convict labor, and on the 10th we went with the former to Phœnix Bay and South Point. On the 11th we worked up a large fresh-water creek, but it rained hard all day; in the evening we reached Port Mouat. Most of the succeeding day a severe storm kept us in the house. On the 13th we started at 11 A.M., with 43 aborigines from Mount Augusta by Circular Bay, round to Progress Creek, reaching it by 7 P.M., and on the succeeding day we worked from Port Mouat to the South, still accompanied by the Andamanese, round to Progress Creek, being out from 11 A.M. to 6 P.M., On the 15th I returned to Ross Island. On the 17th I again repaired to Viper, and in the evening to Port Mouat; it was now low spring tides, and for the next three days the Andamanese kept us fully employed at MacPherson's Straits in fishing, and showing us the best places for capturing the finny tribes. On the 20th, hearing the steamer had arrived, I returned to Ross Island, and on the 24th re-embarked for Calcutta, where I landed on the 28th.

Route pursued.

Original occupation of the Andaman Islands, their being abandoned and again re-occupied.

3. It is scarcely necessary my entering upon any account of the appearance of this Settlement, which has been fully reported upon by others. In 1789, Lieutenant Blair first established a convict settlement here, which, on account of its unhealthiness, was abandoned in 1793; again, in 1857, it was re-occupied by Dr. Walker as a penal settlement for mutineers and convicts. Port Blair is in 11° 42' N. Lat., and 93° E. Long.: it has a harbour of moderate size in the deeper parts, but extending a long distance in its shallower portions; across its mouth, and running nearly North and South, is the Island of Ross, protecting it from the full force of the Easterly gales, and leaving a passage for vessels on either side between it and the mainland on the North-East and South-East. The waters are beautifully clear, except in the stormy months of the year, whilst the bottom is sandy, except where corals exist.

Observations upon the manners and customs of the Andamanese.

4. The inhabitants of the Andamans consist of two great elements,—the aborigines and the immigrants. The Andamanese deserve more than a casual notice. Owing to the assistance of Mr. Homfray,* who has so energetically and successfully worked to promote a good feeling between us and these savages, and has mastered their language, I was able to see them in their haunts, and to enquire into the meaning of what I saw. They worked with us in the jungle amongst the streams, they speared fish in the harbours, shot them with bows and arrows in the sea, exerted themselves to catch the smaller kinds with their hands or nets, and thus enriched my collection by thirty-six species, which I did not otherwise obtain. They are computed to be about one thousand in number, whilst the individual forming the tribes around the Settlement number about four hundred. As a race, those who are living in the vicinity of our Settlements are decreasing in number, few appear to live over forty years of age, scarcely any family number above two living children, and only one has three. From April 1868 to April 1869, 38 deaths were reported, and only 14 births; whilst during the four years only six infants have lived whose parents resided at the homes; of monthly visitors only 12; of the half yearly ones some 20; this is somewhat remarkable with reference to the question of the effects of a fish diet on the production of offspring, and the probable result of civilization on this savage race. Their language is meagre, remarkably deficient, and the different tribes have distinct dialects, and even the inhabitants of the Little Andamans cannot understand those of the South Andamans. Numerals are entirely absent, they do not comprehend their use; whilst the day is divided into three portions,—sunrise mid-day, sunset. In like manner they divide the year into three seasons,—*first*, dry, *ea ra bodilin*, or Northern sun, extending from February to May; *secondly*, the rainy, *goo mo lin*, from June to September; and *thirdly*, *pa pa lin*, or moderate season, from October to January. They are of diminutive stature scarcely averaging five feet in height, whilst various and contradictory statements have been given as to their probable origin: at one time feared as cannibals, and even now dreaded by mariners in event of a shipwreck. These Islands get a wide berth from vessels not directly interested in proceding there, as the shipwrecked sailors have hitherto usually met with their deaths from the arrows and spears of the Andamanese, or else the last few survivors have been kept as slaves, and thus probably assisted in continuing this mixed race. Some may be of African origin, their woolly hair and other signs apparently afford such a solution, but some again have entirely smooth hair, and but few have very thick blubber lips, or the Hottentot's projecting jowl. So long as they are pleased, their features are not exactly unpleasant. They do not like persons to wear hair on their head or faces, and they shave off all, except one narrow band from the crown to the nape of the neck, which is, however, cut short. They rarely have eyebrows, beard, or whiskers, and merely a few eyelashes. Formerly, the shaving, which is done generally by old women, was a tiresome process, performed every six months by means of a piece of sharpened flint, but now they use pieces of glass from broken bottles, and undergo the luxury every fortnight. The reason for indulging in this seems to be the impossibility of keeping vermin out of their hair, whilst by thus shaving the appendage no room remains for these parasites to lurk in. They consider themselves very handsome, and one of their greatest pieces of abuse is to say, your nose is ugly, your mouth is deformed, or such like observations. To them a looking-glass presents great attractions, and, although their mode of attire is primitive, they become exceedingly irritated should any remarks be passed upon the method in which they paint or adorn themselves. On a causal observation being made, one turned round and angrily demanded "what are you laughing at, you stupid fellow?" Although they joke with one another, and the bachelors chaff the spinsters so that they generally remain somewhat apart, with strangers they do not like any familiarities in conversation. They resemble monkies, or children amused with toys, delighted on flying a kite for the first time, pleased at receiving pieces of cloth, which they tie round their heads, or dress themselves with as they perceive others to be clothed, but as soon as it becomes dirty, tearing it off for their usual adornment. They are doubtless very lazy, and on receiving tobacco or cheroots seat themselves comfortably in a chair, and direct the servants to bring them a light, which

* Most of the following remarks on the Andamanese are from Mr. Homfray's reports, or informations supplied by him.

they consider it too much trouble to fetch for themselves. I have seen them cut off large branches of trees to obtain the fruit which they might easily have knocked down by means of a bamboo. In the infancy of the Settlement, they used to root up the young cocoanut trees, as they considered the tender portion near the root to be good eating. The women and children are slaves to their parents; whilst, should it suit their views, no untruths are too great to obtain any object they desire. They refuse nothing to one another on its being asked for, and expect everything they demand being given to them in like manner. Their organ of secretiveness appears to be well-developed, but they are comparatively honest with respect to the goods of those they are not well acquainted with, and with whom they never take liberties. They are great backbiters among themselves. In the wilds their tempers are very impatient, and they will let fly an arrow or use a knife at the slightest provocation; but they listen to the aged, and during a quarrel the words of those that are grey-headed at once allays the storm. Should one have fired an arrow at another, he then sits down, all is over: in fact, one moment they may be crying for some loss, the next drying their eyes, when any little incident sets them off laughing. They have a great respect for fire-arms, which they look on with considerabe awe. They are very sharp, and appear to have good memories: thus they soon discovered that they were called by the new comers by names anything but complimentary, and as every race has such epithets at their disposal, which they freely employ, the Andamanese (who are not averse to a joke) recognise each race by the several terms of abuse which they have used in addressing them. They have no pets about their homes, except dogs, which they appear to treat well, because they are useful. At first the canine species appear to have great dread of the aborigines, but this they soon get over. The painting or adorning of themselves is done by the females. Iron is collected from a mineral spring, this burnt red* and mixed with fat is employed as an external application. When I was at Port Mouat, the Rutland Island Chief was in mourning for his only child, and was daubed all over with olive-coloured earth,—a proces which was daily repeated,—whilst a rather thick coating of mud covered his head. This mourning lasts at least one month. During periods of deep sorrow they are very silent, and entirely refrain from the use of red paint and all decorations, from taking much food, even from eating their favourite pork, whilst honey must not pass their lips, but instead, they have daily to throw honey-comb, if obtainable, into the fire. When the period of mourning has expired, they wash off the olive-coloured earth, and revert to their red paint, with which they are fantastically adorned, serving both as a decoration and a charm. Olive mud is likewise used as a decoration when painted over the body in an ornamental manner. These colours form the chief, usually the only, portion of the clothing of the males unless they have a string or two round their waist or neck, or round the leg below the knee like a garter, otherwise they are as primitive as man is represented to have been in his primeval condition. As for the women, they adorn their waist strings by twisting pieces of cloth round them, and painting them red, whilst depending in front are a few leaves fresh gathered from the jungles, and behind are some tails of fibre. A string of their ancestors' bones worn around the neck completes their attire, unless they have a basket slung over their backs in which some relative's skull is carefully carried about, or a broad band over their shoulders by which they suspend their babies. Before marriage, in both males and females, the whole of the body is tattooed; this is done once a fortnight now (formerly twice a year); a small portion only of the body being operated upon at a time, as a considerable amount of blood is lost in the process. A piece of a broken bottle, inserted into the end of a stick, is the instrument employed, formerly pieces of sharpened flint were used. At the age of eight, when they first learn to swim, this commences, and is generally continued up to the adult period of life. Destitute of clothing, these aborigines commisserate foreigners going through their jungles; when it rains they say, "you will be wet, your clothes will spoil, whilst our skin soon dries." When the briers tear their garments, these Andamanese laugh and call attention to how much better off they are with nothing to tear. Crying signifies with them reconciliation with enemies, or joy at meeting an old friend or acquaintance from whom they have been parted. Should two tribes meet, the new comers have to commence, and the women have the priority in weeping; subsequently the men take it up, whilst it becomes the duty of the hosts to reciprocate in the same manner; first the females weeping and afterwards the males, occasionally the performance cannot be completed in one night, especially should the parties have been long separated, it may even be continued through several successive days. After the crying has been completed, dancing begins; that of the women a few years since differed from that of the men, they having to clap their hands and sing to the music of the stamping of the men's feet: their songs appear to be a recital of the events which have passed since their separation. The conclusion of the performance was for both parties to join in a grand dance. Now, however, the men and women occasionally dance together, the females, who intend dancing,

* Dr. Waldie, having been good enough to analyse their red preparation, reports it be as follows:—

Peroxide of iron	42·7
Quartz in small fragments, and very little of any other rock or earthy matter ...	56·4
Water expelled by ignition	·9
	100·0

put on a few extra leaves, and they relieve the men in striking the sounding board with their feet. If a person intends dancing all night, he has an extra coating of paint, which is said to be put on in order to act as a preventive against exposure. It is evident they are very fond of dancing. Having occasion one day (as we were starting upon a fishing excursion) to go inside one of the convict barracks, the Andamanese set to work to dance on the boarded floor, and it was with the greatest difficulty that we could induce them to desist. When one tribe goes into the territory of another, except upon a special invitation, they have to pay homage by dancing all night before the chief of the resident tribe, subsequent to which hospitality is extended to them. When children are born, the infant is first bathed in cold water, and then warmed over a fire, this being done to harden it and inure it to stand changes of temperature. It is very evident that they do not understand how to rear children, they give them whatever they desire, and over-kindness early consigns the little one to the grave. Children are named some months before they are born after same family or favourite name. Consequently, there is no difference between those of the males and of the females. Owing to their list of names hardly exceeding twenty, they prefix to each some word expressive of something in their appearance to distinguish one from another, or else accordingly to the locality from whence they come. They marry as soon as they are able to support their wives, whilst they are monogamous. It is usual for the young man to eat a peculiar kind of ray fish termed *goom-dah*,* which gives him the title to the appellation of *goo-mo*, signifying "a bachelor desirous of becoming a benedict," whilst girls when they arrive at the earliest marriageable age, distinguish themselves by the flowers of certain trees. Young men likewise take a species of oath before marrying, after which they sit still for some days, hardly taking any food. Those who have been pig-hunters refrain for one year (commencing in April) from eating pork, using turtle or fish instead, although they do not give up hunting pigs which are required for the food of the tribe; the turtle-hunters in like manner use pork during this probationary year, during the whole of which time they must not taste honey. This is apparently done for the purpose of ascertaining whether the individual is able or not to support a family. The marriage ceremony is simple: a man about 16 or 18 is engaged to a girl of 13 or 15 belonging to a different family, and with the consent of the girl's guardian, who is generally the chief of the tribe. At their first meeting they are seated apart from others, passing their time in staring at one another; as the shades of the evening darken, the guardian or chief advances, and taking the hands of the pair, joins them together, they then retire into the jungle to spend their honey-moon. On their return to the tribe, crying and dancing are kept up with great spirit. After marriage they are not so useful as before for the general welfare of the tribe, as the married woman has now to erect her husband's hut, and look after his welfare, and consequently they are not ordered about by the chief. As soon as people are marrried, they object to going into the water, of which they previously had no dread; for, although they never wash, their being constantly swimming about keeps them clean. Sea breezes are considered a cause of sickness, as the chief of the evil spirits is believed to ride upon it. The wife has to perform all the home duties, providing shelter, matting for lying upon, cooking the food, procuring water and shell fish, carrying loads when changing from place to place, shaving her husband, and taking care of him whilst sick. The husband has to protect his wife, make canoes of fishing, the implements for hunting pigs or turtle, and occasionally spearing fish, whilst he also obtains food, if not provided by the bachelors or spinsters. The chief of the Rutland Islanders appears very like a Madrassee, or as if he were of Madras origin, and is very superior to those of his tribe. He obtained his present position by marrying the widowed queen. Widows and widowers have no objection to re-marry. I saw one woman who had done so within the month subsequent to her husband's death, but this was considered rather premature. At the "home" the following is the manner in which they pass the day:—At a very early hour they have something to eat, for about 4 A. M. their uncovered bodies become cold, which necessitates their making up their fires, and once up, feeding begins: when residing in the same house, there is no rest after this early hour. About 7 A. M. some of the men go out foraging according to the season, it may be pig-hunting, fishing, or taking tortoises or turtles. The young men and boys assist in making, paddling, and steering canoes. The women in a body go for shells, shell-fish, fruits, and bulbs, in which they are assisted by the girls; whilst the elderly people keep at home, making baskets, nets, bows and arrows, attending the sick, &c. Between 2 and 3 P. M. the foragers return with their spoil, these are, as far as possible, equally divided amongst all. The aborigines are a sickly race, suffering much from fever and lung complications, as well as from malaria in newly-cleared jungly-lands. They have no medicines, their great faith is now in quinine, which they ask for when headache or fever is present. Whatever new drug is offered them, they invariably expect the donor to take some of it first, and subsequently they do not object to it. They plaster themselves over with olive mud for headaches, whilst the same substance rubbed over the body is deemed to be a non-conductor of heat. They cannot stand either strong winds or exposure to the rays of the sun, whilst living as they do almost without shelter, the effects of the climate upon them may be readily imagined. In the month of August the high winds

* The Andamanese words have been divided into syllables, in order to facilitate pronunciation.

and rain are very inimical to their health. Upon the death of an adult, the tribe at once desert their encampment, retiring to a distance of eight or ten miles; this is done in fear of the ghost of the departed, which is considered to haunt the spot: they remain away one month. A corpse is viewed with great dread, and almost equal fear is shown on going near a burial place. Jacko, chief of the North tribe, died on 1st July 1865, and his loss was for several days openly bewalied by his people. He left two married sisters behind, whose husbands had to bury the corpse. Death occurred at 6 A. M., and within two hours his remains were rolled up in leaves by the old people, and corded with fibre preparatory to their being consigned to the grave. The latter was merely two feet deep, and only a few feet above high-water mark. Here the corpse was placed in a half sitting posture, with the face turned towards the East. Previous to filling in the grave, each took his last farewell of one they had loved so well whilst alive, and one by one in turn gently blew upon his face and forehead. When all was over there did not remain more than six inches of earth above the body, placed there to prevent the ribs from being broken; some stones were now heaped over the grave, subsequently some burning faggots, and mourning garlands were placed on the shore in conspicuous places to mark a chief interment. Before retiring, a cup of water was placed at the head of the grave, in case the spirit of the deceased during the night should feel thirsty. Four months subsequently the nearest-of-kin went to the grave and brought away the lower jaw, which about that time became fleshless; a month afterwards the shoulder-bone and a rib or clavicle were extracted; and after six months the skull, now freed from impurities. This was slung round the neck of the principal mourner, and subsequently everybody had it in turn to carry about. When a stranger dies amongst a foreign tribe, he is entirely neglected, and his funeral rites mostly uncared for; the chief generally directs some of the young men to carry away the corpse, and throw it into the jungle or sea. Should a chief or great man die, the ceremony is not generally the same as that described for Jacko. They erect a stage, some twenty feet from the ground, and on this the corpse is placed. Thus the spirit of the departed, it is hoped, will keep above, and not injure any one who may incautiously pass near the corpse, whilst a fire is lighted under the stage for the purpose of disturbing other evil spirits. The extraction of the skull and bones, it is considered, requires great skill and courage, whilst by keeping them carefully and waring them during pain or sickness, it is supposed will induce the ghost of the departed to be friendly to the wearer. In selecting sites for burials they invariably avoid hills and elevated pieces of ground. Should those of other tribes go to condole and sympathise with a widower, the custom is to fall into his lap, embracing and crying for about ten minutes, after which the afflictions are recited. It has been stated and generally admitted that these people have no knowledge of any religion, and are pure Atheists; but they appear to be more Deists with very obscure views. It is curious to see the state into which the Hindoo and Mahomedan convicts are drifting, destitute of religious rites, temples, or priests. Probably were they left alone on the Andamans without any fresh importations, their views after a few generations would be much similar to those of the Andamanese who fear evil spirits, have a great dread of witchcraft, and imagine that the spirits of the departed soar away into space to some place of quietness and haven of rest which they cannot comprehend. Being entirely without caste prejudices themselves, they dislike those who indulge in them, and, amongst the dark-skinned races, prefer the Burmans, who will eat, drink, and smoke with them. Formerly they looked upon all strangers as foes, and their name of an evil spirit was identical with that of a stranger from unknown lands. They strongly object to moving about after dark in dread of meeting ghosts, and at this time no women will go alone, whilst they invariably carry with them a lighted stick to keep off evil spirits, as well as mosquitoes and sand flies. Occasionally the men turn out, imagine they see a ghost, yell as loudly as possible, and let fly their arrows at where they suppose the spirit is, or they ask that a musket or two may be discharged for the same purpose, after which they are satisfied. At night time, they all huddle together as close as possible, the married people by themselves, and the bachelors and spinsters also in separate places. They rub on turtle oil, and wear wreaths of turtles and fish bones, hoping by this means to enchant the spirit of the victim, and keep away sickness should they be exposed to wet. Wreath of turtles' and fish bones are also at times suspended at the prows of their canoes to propitiate good luck to their fishing. They cannot be persuaded that the Europeans do not worship fire, asserting if it were not our God, why is it always with us? Whilst they have to keep a lighted brand, and did their fire go out, they know no manner of reproducing it. They are surprised at our igniting matches, producing fire by means of a magnifying glass, by rubbing two pieces of bamboo together, by flint and steel, by caps on guns, &c., &c. As respects food, they have never tilled the soil, but have lived entirely upon the products of the jungles or of the waters, and storing up but little for a future day's supply. But one of the first questions asked about these people is, are they cannibals? They scout the idea and ask why, when food abounds, should they devour human beings, a repast on whom they assert would most assuredly cause their deaths. They eat nothing raw, not even fruit. In cooking flesh, they either throw it on the embers, turning it over when the under side appears to be

sufficiently done, or else cooking the meat of the tortoise and pork in unbaked earthen chatties. Their appetites are large, they appeared able to consume about 6lbs. of fish at a sitting, and were soon ready to commence again. A large *pinna* forms their plate, a *nautilus* shell their drinking cup. They have no regular periods for their meals—when they are hungry they eat, no matter at what time. As they capture their principal supply of fish and turtle during the low tides, and do not dry or salt any, it follows that they have abundance at that period of the month, whilst they may be comparatively destitute during the intervals. Their chief food at the first or North sun period is honey, fruits, and turtles; in the rainy season they do not wander much about, owing to the difficulty of obtaining shelter; then the jack seeds last them for three months, and in the early part of their middle season, pigs, which however soon become scarce, then comes fishing and turtle catching. Pigs begin in September to rove through the jungle, finding their way to the coasts and creeks: during this period many are killed. In the year 1865 they first began to use dogs for pig-hunting, which they learnt from some Burmese runaway convicts; previously they had to lie in wait hours, and sometimes days, ever in the hopes of seeing one or two; now the dogs find them almost at once, consequently they are in great request for them. The Andamanese, however, have curious ideas respecting pork as food, and when they are able to please themselves, use it as follows:—The children and the weakly persons eat sucklings, the bachelors and spinsters use those of medium size, whilst adults prefer the stronger boar. Beef they consider too coarse for food, neither do they eat birds, as a rule. About the month of January the *Dugong* shows itself in Port Mouat Bay, coming to feed upon a species of sea weed, which is also relished by the turtles. In the month of January honey is generally common, and they bring the combs down from the tree with great dexterity, neither smoking the bees nor being stung themselves. A wild shrub, "Jenedah," exists in the jungles, and its juice appears to intoxicate the bees. The aborigines take a piece in their hand, and biting through the bark, they get the pungent white juice into their mouths, this they spit out at the bees which either fly away or become intoxicated. Wax obtained from the honey-comb is much used for their bow strings, also for covering the fibre where the nails or heads are attached to arrows, or stopping leaks in their canoes. The Andamanese have no tie to keep them to one place, they wander about for food, or as their fancy dictates: they have no constraint, but that of their chief or their individual caprice; in short they love freedom, and they hate control. They have scarcely a want, but as luxuries they esteem tobacco, especially cavendish and grog. Iron they also require for spears and arrows, and for making adzes to construct canoes; formerly they used to steal the convicts' dahs, pieces of iron and nails, but latterly they have refrained from helping themselves. They do not care for sugar, but are immoderately fond of honey; they eat the *cuttle fish*, are much addicted to *chitons*, but will not eat raw oysters. Formerly they appear to have consumed almost anything,—on wet days worms, caterpillars, roots, nuts, mangrove seeds, sharks, shell-fish, &c., &c., things which they now refuse. Amongst fish they prefer the mullet; and one day having placed a quantity of different species before them, they helped themselves in the following order, observing that the first took the best, the last the worst:—Chorinemus, platycephalus, horse, mackerel or caranx, chrysophrys calamara, and lastly tetrodon, or frog fish, which is usually reputed to be poisonous. They will eat cats, but now dogs are spared, because they are found to be useful. Though nominally fed at "the homes," it is a mistake to suppose that they subsist on the food provided by Government, for they only allow Rs. 200 a month to cover all expenses. In the year 1868-69 the following were the earnings of the aborigines:—500 pigs, 150 turtles and tortoises, 20 wild cats, 50 iguanas, and 6 dugongs; whilst the total number of rations given was 48,248, giving a daily average of 132 persons, including women and children, allowing each individual only 9 pics daily, and showing an increase in those fed of 14,575 rations over the previous year, but with a decrease of expenditure of Rs. 209-3-4, thus showing them to be more self-supporting. Since the establishment of these homes and at a trifling cost a great change has commenced: convicts are now unmolested, implements of agriculture are not stolen, the fishing stakes are left undisturbed, the gardens are no longer pillaged, runaway convicts have been re-captured, and shipwrecked sailors assisted. One of the most necessary piece of property to these people is a canoe, a moderately-sized one, being capable of accommodating about 20 persons, and is used for the purpose of obtaining food for about 30. It is scooped out of a tree by men, working with a sort of adze, and who take their turn, during which period they are supplied with food by others. When finished, the canoe is a very fragile construction, and rarely lasts above a year, for they are constantly making its sides thinner by ornamenting and scooping out its interior. It is ballasted by stones, and has a prow projecting about two feet, on which the fisherman stands. They are more especially useful for turtle fishing, and the spearing of skates and rays. The bamboo pole by which the native poles about his boat, has a sharp moveable spear which unships at one end, and to this is attached a long line. When the bamboo is thrown, and the spear becomes imbedded in the prey, it slips away from the bamboo, but being attached to the line the animal is securely held by the fisherman. Their eyes, whilst slowly and silently moving about, are as sharp as hawks,

the spear is generally thrown with a deadly aim, and should the fish be large, some of the natives dive down under water, attacking the victim with knives and spears, whilst others endeavour to pass a line over the game. For their small nets they use a fibre as thread, which they neatly work up, employing their fingers as a mesh, gradually enlarging it as required. When turtles are scarce, a large net is used, just before the tide begins to ebb; this is attached to stakes which encircle the whole of a reef where they resort for food. As the tide recedes, they are of course penned in, but they fight most desperately to break through the net. The Andamanese now use spears, and but few as a rule escape. Their bows and arrows are used principally for shooting fish in shallow water: the upper two-thirds of the arrow is a hollow reed, the lower a piece of heavier wood, armed with a piece of iron or a nail. *Major Haughton* in 1862 observed in the journal of the *Asiatic Society of Bengal* upon flint arrow-heads having been employed by them for shooting fish, and some such heads are still found in their heaps; but the aborigines declare they never recollect when such articles are so employed, but they do remember their being in use for shaving and tattooing. They throw stones with considerable accuracy, and in this way procured me several sorts of small fishes of the goby and blenny families, which I should not have otherwise obtained.

Convicts, with observations on their food, &c.

5. Amongst the immigrant population of the Andamans the convicts form the preponderating element: during 1868 the average number of prisoners was "6,523 males and 514 females. They are from all parts of India, and a small number of Burmans, with a very few East Indians, Europeans, and Chinese."—(*Dr. Rean*, senior Medical Officer.) The same officer observes that at the close of the year the figures were as follows:—Of labouring convicts 6,123 males, and 270 females; of self-supporters, 357 males and 87 females; of ticket-of-leave holders, 216 males and 175 females. The prisoners, with the exception of the self-supporters and those possessing tickets-of-leave, were formed into divisions, receiving pay as follows:—Division gangs-men Rs. 8, sub-division gangs-men Rs. 6, Tolidars Rs. 5 monthly. First class convicts obtain three annas, second class two and half annas, and third classs two annas daily. The proportion originally existing between the classes having been as follows:—Division gangs-men 1–419; Sub-Division gangs-men 1–419, Mohurrir 1–479, Tolidar 1–26, First class ½, second class ⅓, third class ½. Self-supporters, now abolished, used to be promoted to that grade, without any definite period having been served, whilst they only differed from those having tickets-of-leave in not being permitted to go where they pleased upon the Settlement without a pass, and also in having to pay a tax of one Rupee every month. Tickets-of-leave could be obtained by prisoners of seven years' sentence after six years' servitude; by those of 14 years' sentence after 10 years' servitude, and life-prisoners after 16 years' servitude. Convicts who have arrived since October 1868 receive rations, but no pay. "There are," says *Dr. Rean*, "three systems of dieting in vogue on the Settlement. The *first* comprises those prisoners who receive a subsistence allowance according to the scale already detailed, and who purchase their own food; *secondly*, those who are messed in gangs; and *thirdly*, those who receive rations in lieu of any money allowance, and cook their own food. Those who purchase their own food do it from the Commissariat, through a bunniah at an established rate, calculated to enable each man on the lowest pay to receive a fair diet with a small surplus." In the chain-gangs the following is the dieting:—"For Indian prisoners, rice or wheat 24 ozs., dhall 4 ozs., vegetables 5 ozs., ghee 1 oz., mussallah ½ oz., tamarind ½ oz., salt 1 oz., daily. Meat 4½ ozs. twice a week, fish 5 ozs. four times a week." * * "A larger quantity of fish is introduced than usual, with a view to consume, as much as possible, such kinds of animal food as are most economical and produced on the Settlement." The messed convicts are fed on the same scale: 116,299 lbs. of mutton, beef, and pork were issued to convicts in 1868. Respecting the cost to Government, especially of mutton, *Dr. Rean* observes:—"To diminish this is most desirable, and I think quite possible, by the development of the resources of the Settlement in the rearing of cattle, and the increase of fisheries." I could refer to many remarks from this Officer respecting the great value the fisheries ought to be, provided they could be fully worked; thus, so long ago as July 31st, 1869, he observed:—"The next important article of food which should be obtained is fish; it is surprising, with a harbour teeming with the finest fish in every cove and inlet, that sheep have to be imported from Calcutta at an enormous cost to the State to supply the convicts with animal food. Food of a nitrogenous nature is necessary to maintain the labouring man, but if fish or milk could be had in quantity, mutton could be largely dispensed with; 12 ozs. of mutton is now issued to Hindoos weekly, and I am of opinion it might be re-placed by fish to a very large extent without prejudice to the health of the prisoners." *Major Davies* observed in 1867,—"Fish, although abounding in the Bay, is so scarce that it cannot be looked upon as an article of food, * * it would appear to be our best resource as a substitute for mutton." *Colonel Man*, the present Superintendent, remarks,—"*Dr. Rean* justly reprobates the quality of our mutton, and as it is brought here and maintained at a vast expense, my object has been to endeavour to provide substitutes which would enable us to diminish its importation." Without making further extracts, I may observe that it is very clear that nitrogenous food is a necessity, that

the Superintendent and senior Medical Officer desire some substitute for mutton, both on account of its inferior quality and great expense, whilst, if procurable, fish would afford the required substitute.

Present cost of the supply of sheep for convicts at the Andaman Islands.

6. The necessity of some form of nitrogenous food being admitted, a few words are necessary to the quality and quantity of the mutton which is expended on the convicts. As to the quality of the meat, every one who has seen or tasted it must admit it to be of the most inferior description: the climate is evidently unsuited for sheep, they neither thrive, and will not, or cannot breed. The following figures give an approximative idea of the cost of mutton issued to the convicts in one year:—

Mutton.	Sheep alive.	Sheep heads.	Cost.	Recovered.	Loss.
lbs.	No.		Rs.	Rs.	Rs.
52,522	532	1,660	26,235	6,261	19,974,

But as the above estimate does not include the freight, which is Rs. 5 a head by the steamer from Calcutta, and as 7,129 sheep are shown to have been expended,* I suppose at least Rs. 35,645 may be added on that account, thus raising the loss to Rs. 55,619, and consequently, in calculating the value of fish, when given for the purpose of superseding the use of mutton, one must not look on it of the value of simply two annas a pound, the sum charged to the convicts, but that 2lbs. of fish will be equal to at least 1lb. of mutton, which is now a most expensive article; whilst it appears probable that the healthy fine fish of the waters of the Settlement must be superior as an article of diet to the lean mutton. From a return received from the Commissariat Officer, I extract the following:—Sheep remaining, January 1st, 1869, 1,746; received during the year, 7,152; issued and died, 7,129.

Proposition of the Officer in charge of the Fisheries to lease them all out to a Malay: reason against such a step being adopted.

7. The Officer in charge of the Fisheries observes:—"I am averse to Government fisheries, and am sure peculations must go on when I see 30 men, self-supporters, catching three times as much as 60 Government men, and I don't see the way to prevent it. I am in treaty with the Malay from Penang, whom I am in hopes of persuading to farm the fisheries," a course I must strongly oppose; for, however advisable it may appear on paper, I feel sure it will be a great error in practice. Should the fisheries be let for money, a slight return may certainly be obtained, but the contractor must employ convict labour, and unless he agrees to sell his captures to Government at a fixed rate, and furnish a certain amount at stated times, the market will be completely in his hands, for he could fix his own prices, and a most tremendous pecuniary loss must accrue, or Government be driven from the fish market for their supply. If the prisoners are in future to be rationed by Government, as proposed, a certain amount of animal food must be procured; and provided these splendid fisheries are let to a Penang man one of the cheapest and best sources of such supply may be cut off. That Government may and probably does suffer from peculations, as suggested, is by no means improbable, but I do not consider to be the reasons self-supporter obtain three times as much fish as those working in gangs (see paras. 11 and 14). Likewise, I would suggest a trial of certain plans (see para. 15), for the purpose of more effectually obtaining fish for Government purposes. Should Government be independent of the fish supply, by increasing the cows, or breeding goats and pigs, and the convicts not desire to purchase fish, then the fisheries might be leased out; but were this the case, who would take them, for from whence could the lessee derive his profits?

Present mode in which the fisheries are worked.

8. Having in the preceding paragraphs shown that fish are a necessity to Government, and capable of supplanting the now expensive mutton, I arrive at the question of how the fisheries are at present worked? "I believe," observes the Superintendent, "that a large proportion of the fish caught by the Government gangs is now handed over to the self-supporters, and sold by them," a conclusion not exactly commendatory of the manner in which the convict labour is supervised. In October 1869 the same Officer reported,—"Captain Laughton, the Executive Commissariat Officer, has taken charge of the Government fisheries, and is working energetically to bring matters to an effective state." The following shows the number of inhabitants and fishermen in each different Station on the Andaman Islands. The fishermen are divided into those who are self-supporters, and are paid for what they capture, and those who are Government fishermen, and have no encouragement whatever to induce them to work.

* (See Appendix.)

			Port Blair.	Chatham.	Port Mouat.	Aberdeen.	Stewart's Sound.	Middle Andaman.	North Andaman.	Interview Island.	Total.
NOVEMBER.	Fishermen.	Gangs.	...	...	...	25	29	4	...	8	7	...	...
		Self-sup.	5	...	3	3	2	2	5	4	7	...	...
		Residents.	3,220	325	931	1,332	246	307	421	169	1,305	20	399
OCTOBER.	Fishermen.	Gangs.	...	...	...	25	29	4	...	8	7	...	...
		Self-sup.	5	...	3	3	2	2	5	4	7	...	...
		Residents.	3,380	291	1,060	1,298	184	243	307	224	1,285	20	415
SEPTEMBER.	Fishermen.	Gangs.	...	...	...	25	29	4	...	8	7	...	...
		Self-sup.	5	...	3	3	2	2	5	4	7	...	...
		Residents.	3,489	294	1,111	1,332	187	282	301	229	1,385	31	432
AUGUST.	Fishermen.	Gangs.	...	...	...	3	29	4	...	8	7	...	...
		Self-sup.	5	...	3	15	2	2	5	4	7	...	...
		Residents.	3,466	294	1,040	1,333	188	262	302	230	1,356	31	432
JULY.	Fishermen.	Gangs.	...	...	...	25	24	4	...	8	7	...	...
		Self-sup.	5	...	3	3	2	2	5	4	7	...	...
		Residents.	3,507	295	1,041	1,332	184	263	281	234	1,291	31	461
JUNE.	Fishermen.	Gangs.	...	...	...	25	24	4	...	8	7	...	...
		Self-sup.	5	...	3	3	2	2	5	4	7	...	...
		Residents.	3,516	295	1,078	1,335	181	256	293	238	1,285	31	485
MAY. *	Fishermen.	Gangs.	...	...	...	17	24	4	...	8	7	...	...
		Self-sup.	5	...	3	4	2	2	5	4	7	...	...
		Residents.	3,535	269	1,069	1,323	171	270	287	241	1,277	31	473

Fishes of the Andaman Islands.

remarkable by the absence of the silurioids and carps. I have not detailed amongst the following a large number of the smaller and more insignificant species as regards food.

48. „ spilurus, *Blkr.*
49. „ indicus, *Shaw.*
50. Upeneoides tragula, *Richard.*
51. „ bivittatus, *Cuv. and Val.* Chah-ti-ing-ud-dah, *And.*
52. Mulloides flavolineatus, *Lacép.*

The following table shows the quantity of fish taken during the same period by the two different classes of convicts:—

Month.	No. of Fishermen.		Average No. of pounds of fish taken monthly per man.		Quantity of pounds of fish received from	
	Self-supporters.	Government gangs.	Self-supporters.	Government gangs.	Self-supporters.	Government gangs.
January ...	27	78	200	37	7,125	2,782¼
February ...	37	76	204	62	7,565¾	4,705½
March ...	32	60	327	80	10,470½	4,818⅝
April ...	32	60	292	91	9,362	5,509½
May ...	32	60	294	67	9,408½	4,056
June ...	31	68	321	65	9,940¼	4,446⅛
July ...	31	68	283	85	8,788½	5,358⅞
August ...	31	73	361	97	11,185	7,123¾
September ...	31	73	336	115	8,387½	10,411
October ...	31	73	378	90½	11,709½	6,606
November ...	31	73	227	74	7,034	5,383

The above table shows that during the first eleven months of 1869, each self-supporter captured upon an average 293 pounds of fish monthly, whilst each man working in the Government gang only took 69 pounds during the same period (see paragraph 11.)

Fishermen consist of self-supporters and gangs-men. The latter appear to be chosen by chance, and not selected for their knowledge of fishing, whilst they have no inducement to fish.

9. The men who fish are divided into the self-supporters and those who work in gangs and are under Tolidars. But it does not appear that the Tolidars are selected for their posts, owing to a knowledge of fishing, in fact, some are up-country men who have never seen a sea or back-water fishery previous to their arrival at the Andamans. Any convict may be sent to the fish gang, and those who work in them are liable at any moment to be draughted away to jungle cutting, raising bunds, &c., and fresh hands are given. It must be admitted that no method is adopted at the present time to obtain good fishermen to work the Government fisheries. To develope this source of economy, it would probably be more efficacious were those convicts set aside for fishing who were best acquainted with the work. When getting the drag net ready for use in a fresh water creek, the convicts were at first doubtful which edge was to be above, that with floats or that with weights. I need scarcely add they caught nothing, whilst they fairly excused themselves, observing they had never been fishing previously in their lives. But were good fishermen available amongst the convicts, they have no inducement to obtain fish to procure which for the morning supply they should be at work late at night or at daybreak in the morning. The Senior Medical Officer on April 30th, 1869, observed,—"As the wet season is now setting in, I have the honor to recommend that the men employed in the fisheries be served a dram of rum daily. The person in charge of the gangs should also apply to the hospital for a ration of quinine to be given as well;" an extra suit of clothes was also recommended to be issued to fishermen, so that they might have a dry suit to put on after coming from their work. Under the above circumstances, it is scarcely surprising that they shirk their work whenever it is possible to do so. How the drag net is always requiring to be mended. How the stakes are not drawn, because one man is suffering from fever, or there are not enough canoes. How the line fishermen absolve themselves for bringing in so few fish, with the assertion that their hooks and lines were carried off by a shark, and such like excuses.

Fishes of the Andaman Islands.

10. The fishes of the Andamans are exceedingly varied in their characters, and chiefly remarkable by the absence of the siluroids and carps. I have not detailed amongst the following a large number of the smaller and more insignifiant species as regards food.

SUB-CLASS—TELEOSTEI.

ORDER—ACANTHOPTERYGII.

Family—Berycidæ.

1. Holocentrum, *New species.*

Family—Percidæ.

2. Lates calcarifer, *Bloch.* Jo-dah, *Andamanese.*
3. Serranus hexagonatus, *Forst.*
4. „ ——— *New species.*
5. „ dispar, *Günther.*
6. „ summana, *Forsk.*
7. „ bontoo, *Cuv. and Val.* Rou-je-dah, *And.*
8. „ ——— *New species.*
9. „ argus, *Schn.*
10. „ cyanostigma, *Blkr.*
11. „ suillus, *H. Buch.* Rab-na-dah, or O-ro-tam-dah, *And.*
12. Genyoroge marginata, *Cuv. and Val.*
13. „ ——— *New species.*
14. „ cæruleopunctata, *Cuv. and Val.*
15. „ ——— *New species.*
16. Mesoprion russellii, *Blkr.*
17. „ therapon, *Day.* Jeu-win-dah, *And.*
18. „ rangus, *Cuv. and Val.* To-go-re-dah, *And.*
19. „ chirtah, *Cuv. and Val.* An-na-kah-ro-dah, *And.*
20. „ sillaoo, *Cuv. and Val.*
21. „ johnii, *Bloch.*
22. Ambassis urotænia, *Blkr.*
23. „ dussumieri, *Cuv. and Val.*
24. Apogon multitæniatus, *Blkr.*
25. „ hyolosoma, *Blkr.*
26. „ thermalis? *Cuv. and Val.*
27. „ orbicularis, *Kuhl. & V. Hass.*
28. „ fasciatus, *White.*
29. Dules tœniurus, *Cuv. and Val.*

Family—Pristipomatidæ.

30. Therapon servus, *Bloch.*
31. „ theraps, *Cuv. and Val.*
32. Pristipoma hasta, *Bl.* Oo-rug-nud-dah, or koor-koo-to-dah, *And.*
33. „ maculatum, *Bl.* Oor-ung-dah, *And.*
34. „ argyreum, *Cuv. and Val.*
35. Diagramma nigrum, *Cuv. and Val.*
36. „ ——— *New species.*
37. Lobotes surinamensis, *Bl.*
38. Scolopsis ciliatus, *Lacép.*
39. „ bilineatus, *Bl.*
40. „ cancellatus, *Cuv. and Val.*
41. Dentex multidens, *Cuv. and Val.*
42. „ (synagris)—*New species.*
43. Pristipomoides,—*New species.*

Family—Sciænidæ.

44. Corvina belengeri, *Cuv. and Val.*
45. Otolithus aneus, *Bl.* Chal-burn-dah, *And.*

Family—Polynemidæ.

46. Polynemus tetradactylus, *Shaw.*

Family Mullidæ.

47. Upeneus barberinus, *Lacép.*
48. „ spilurus, *Blkr.*
49. „ indicus, *Shaw.*
50. Upeneoides tragula, *Richard.*
51. „ bivittatus, *Cuv. and Val.* Chah-ti-ing-ud-dah, *And.*
52. Mulloides flavolineatus, *Lacép.*

FAMILY SPARIDÆ.

53. Lethrinus rostratus, *Cuv. and Val.* Po-tang-dah, *And.*
54. „ xanthotænia, *Blkr.*
55. Chrysophrys calamara, *Cuv. and Val.* Moo-roo-kee-dah, *And.*
56. Pimelepterus cinirascens, *Forsk.*

FAMILY—ATHERINIDÆ.

57. Atherina froskâlii, *Cuv. and Val.* Ko-re-dah, *And.*

FAMILY—MUGILIDÆ.

58. Mugil macrochilus, *Blkr.*
59. „ waigiensis, *Cuv. and Val.* Do-dah, *And.*
60. „ bontoo, *Cuv. and Val.* Pa-la-ke-o-dah, *And.*

FAMILY—TRACHINIDÆ.

61. Percis hexophthalma, *Ehrn.*
62. Sillago sihama, *Forsk.* Thol-o-dah, *And.*
63. Pegasus draconis, *Bl.*

FAMILY—CIRRHITIDÆ.

64. Cirrhites forsteri, *Bl. Schn.*

FAMILY—CARANGIDÆ.

65. Caranx hippos, *Linn.*
66. „ jarra, *Cuv. and Val.*
67. „ hasseltü, *Blkr.*
68. „ calla, *Cuv. and Val.*
69. „ djeddaba, *Forsk.*
70. „ mate, *Cuv. and Val.*
71. „ —— *New species.*
72. „ —— *New species.*
73. „ ciliaris, *Bl.*
74. „ speciosus, *Forsk.*
75. „ oblongus, *Cuv. and Val.* Ro-thul-dah, *And.*
76. Chorinemus tala, *Cuv. and Val.*
77. „ lysan, *Forsk.*
78. „ tooloo, *Cuv. and Val.*
79. Trachynotus ovatus, *Linn.*
80. Psettus argenteus, *Linn.* Oo-chra-dah, *And.*
81. Equula fasciata, *Bl.*
82. „ dussumieri, *Cuv. and Val.*
83. „ edentula, *Cuv. and Val.*
84. „ splendens, *Cuv. and Val.*
85. Platax vespertilio, *Bl.*
86. „ teira, *Bl.* Cha-la-tah, or goo-na-dah, *And.*
87. Lactarius delicatulus. *Cuv. and Val.* O-rung-na-dah, *And.*

FAMILY—SCOMBRIDÆ.

88. Scomber——*New species.*
89. „ kanagurta, *Cuv. and Val.* Look-wa-dah, *And.*
90. Echeneis remora, *Linn.*
91. Stromateus niger, *Bl.* Ko-lig-dah, *And.*

FAMILY—TRIGLIDÆ

92. Pterois volitans, *Linn.* Cheeb-ta-ta-dah, *And.*
93. Apistus (prosopodasys) niger, *Cuv. and Val.* Pom-tho-cho-rogue-dah, *And.*
94. Platycephalus neglectus, *Trosc.*
95. „ insidiator, *Forsk.* A-ra-wud-dah, or chou-ur-dah, *And.*

FAMILY—SQAMIPINNES.

96. Chætodon vagabundus, *Linn.* Pah-noo-dah, *And.*
97. „ pictus, *Fors.*
98. „ plebeius, *Gml.*
99. Heniochus macrolepidotus, *Cuv. and Val.* Pah-no-dah, *And.*
100. Scatophagus argus, *Linn.* Po-ra-dah, *And.*
101. Ephippus orbis, *Bl.* Kol-lid-dah, *And.*
102. Drepane punctata, *Linn.* Gun-na-to-dah, *And.*
103. Toxotes jaculator, *Pall.* Chà-ra-wud-dah, *And.*

FAMILY—SPHYRÆNIDÆ.

104. Sphyræna jello, *Cuv. and Val.* Thal-lib-dah, *And.*

FAMILY—TRICHIURIDÆ.

105. Trichiurus haumela, *Forsk.* Pa-pa-dah, *And.*
106. „ savala, *Cuv. and Val.*

FAMILY—GOBIIDÆ.

107. Gobius giuris, *Ham. Buch.* Poo-dah, *And.*
108. „ albopunctatus, *Cuv. and Val.*
109. „ acutipinnis, *Cuv. and Val.* Mang-moo-goo-da-lah-dah, *And.*
110. „ viridpunctatus, *Cuv. and Val.*
111. „ filosus, *Cuv. and Val.*
112. „ gobiodon, *Day.*
113. Apocryptes laceolata, *Bl.*
114. „ ——— *New species.*
115. „ macrolepis, *Blkr.*
116. Periophthalmus koelreuteri, *Schn.* Chood-mud-dah, *And.*
117. Boleophthalmus boddaerti, *Pall.*
118. Eleotris sinensis, *Lacép.* Lee-mee-jo-do-dah, *And.*
119. „ ophiocephalus, *K. and V. Hass.* A rig-dah or Mu-took-dah, *And.*
120. „ fusca. *Bl.*
121. „ caperata, *Cantor.*
122. „ ——— *New species.* O-do-kee-chow-dah, *And.*
123. Amblyopus hermannianus, *Lacep.*

FAMILY—BLENNIIDÆ.

124. Salarias fasciatus, *Bl.* Cha-la-ta, *And.*
125 „ dussumieri. *Cuv. and Val.*
126. Andamia expanso, *Blyth.*

FAMILY—TEUTHIDIDÆ.

127. Teuthis virgata, *Cuv. and Val.* Tah-meer-dah, *And.*
128. „ vermiculata, *K. and V. Hass.* Chow-lud-dah, *And.*
129. „ concatenata, *Cuv. and Val.* Thar-oar-dah, *And.*
130. „ marmorata, *Quoy and Gaim.*
131. „ java, *Linn.* Thar-oar-dah, *And.*
132. „ labyrinthoides, *Blkr.*
133. „ albopunctatus, *Schleg.*

FAMILY—ACRONURIDÆ.

134. Acanthurus etenodon, *Cuv. and Val.*
135. „ triostegus, *Linn.*
136. „ lineatus, *Linn.*
137. „ annularis, *Cuv. and Val.*

FAMILY—OPHIOCEPHALIDÆ.

138. Ophiocephalus gachua, *H. Buch.* Chad-dah, *And.*

FAMILY—FISTULARIDÆ.

139. Fistularia serrata, *Bl.*

ORDER—ACANTHOPTERYGII PHARYNGOGNATHI.

FAMILY—POMACENTRIÆ.

140. Amphiprion bifasciatum, *Bl.*
141. „ percula, *Lacep.* Eá-ole-jo-do-dah, *And.*
142. „ ephippium, *Dl.*
143. Pomacentrus bifasciatus, *Blkr.*
144. „ ——— *New species.*
145. Glyphidodon sordidus, *Frosk.* Chák-mud-dah, *And.*
146. „ cochinensis, *Day.*
147. „ bengaliensis, *Cuv. and Val.*
148. „ anabatoides, *Blkr.*
149. „ antjerius, *K. and V. Hass.*

FAMILY—LABRIDÆ.

150. Chærops cyanodon, *Richards.*
151. Hemigymus melanopterus, *Bl.*
152. Julis lunaris, *Linn.*
153. Gomphosus———*New species.*
154. Pseudoscarus rivulatus, *Cuv. und Val.* Ar-dah, *And.*
155. Callyodon viridescens, *Blkr*

FAMILY—GERRIDÆ.

156. Gerres filamentosus, *Cuv. and Val.* Po-ro-chal-dah, *And.*
157. „ ———*New species.*

ORDER—ANACANTHINI.

FAMILY—PLEURONECTIDÆ.

158. Pseudorhombus arsius, *H. Buch.*
159. „ russellii, *Gray.* Ky-tha-thong-dah, *And.*
160. Rhomboidichthys leopardinus? *Günther.*
161. Pardachirus pavoninus, *Lacèp.*

ORDER—PHYSOSTOMI.

FAMILY—SILURIDÆ.

162. Plotosus canius, *Ham. Buch.* Lee-mee-dah or Bon-dah, *And.*
163. „ anguillaris, *Bl.*
164. Arius———*New species.* E-roung-ud-dah, *And.*

FAMILY—SCOPELIDÆ.

165. Saurida tombil, *Cuv. and Val.*

FAMILY—SCOMBRESOCIDÆ.

166. Belone candimaculata, *Cuv. aud Val.* Thook-o-doo-noo-o-dah, *And.*
167. „ ———*New species.*
168. „ ———*New species.*
169. Hemiramphus buffonis, *Cuv. and Val.* Koo-door-rock-o-dah, *And.*
170. „ ——*New species.*

FAMILY—CYPRINODONTIDÆ.

171. Haplochilus panchax, *H. B.* Cho-to-dah, *And.*

FAMILY—CLUPEIDÆ.

172. Engraulis russellii, *Blkr.* Joo-roo-cart-dah, *And.*
173. „ malabaricus, *Bl.* O-pul-dah, *And.*
174. „ beolama, *Forsk.*
175. „ telara. *H. B.*
176. Chatoessus chacunda, *H. Buch.* Kore-paig-dah, *And.*
177. Clupea neohowii, *Cuv. and Val.*
178. Pellona ditchoa, *Cuv. and Val.*
179. Dussumieria acuta, *Cuv. and Val.*
180. Elops saurus, *Linn.*
181. Megalops cyprinoides, *Brouss.* O-pul-dah, *And.*

FAMILY—MURÆNIDÆ.

SUB-JAM—ANGUILLIDÆ.

182. Muræna maculata, *H. B.* Pa-lug-dah, *And.*

SUB-FAMILY—CONGERIDÆ.

183. Muræsox telabon, *Cuv. and Val.* Boschi, *And.*

SUB-FAMILY—GYMNOTHORACIDÆ.

184. Gymnothorax pictus.
185. „ bullatus.
186. „ reticulatus.

ORDER—PLECTOGNATHI.

FAMILY—OSTRACIONIDÆ.

187. Ostracion tetragonus, *Linn.*

FAMILY—TETRODONTIDÆ.

188. Tetrodon lineatus, *Bl.* Ko-pud-dah, *And.*
189. „ lunaris, *Cuv.* Cha-mo-da, *And.*
190. „ patoca, *Cuv.*
191. „ commersonii, *Schn.*
192. „ unimaculatus, *Lacép.*

FAMILY—BALISTISIDÆ.

193. Balistes gubarmatus, *Gray.*
194. „ ?
195. Triancanthus biaculeatus, *Bl.* Ko-tah-thoo-lay-po-da, *And.*

ORDER—LOPAOBRANCHII.

FAMILY—SYGNATHIDÆ.

196. Hippocampus—?
197. Miserophis tenuis, *Blyth.* Ea-de-lah-a-tha-dah, *And.*

FIMILY—CESTRACIONIDÆ.

198. Cestracion zygæna, *Linn.*

SUB-CLASS—SELACHII.

ORDER—PLAGIOSTOMI.

FAMILY—PRISTISIDÆ.

199. Pristis semi sagittatus, *Shaw.*

FAMILY—RHAMPHOBATIDÆ.

200. Rhynchobatus lævis, *M. and H.*
201. „ tuberculatus, *Cuv.*

FAMILY—RAIÆ.

202. Trygon uarnak, *Forsk.*

Exclusive of the foregoing 202 species of fish, I obtained about 50 more (besides two species of Sharks, which I have not yet had time to determine), but this is not of much economic moment, as they are mostly small or else rare; the list comprises those most used as food or most abundant at the Andamans.

11. The modes of fishing employed in the Government fisheries or by the self-supporters are as follows:—Stake fishing, drag nets, cast nets, hooks and lines, on each of which I have a few remarks to offer.

Modes of fishing, stakes, drag nets, cast nets, hooks and lines.

Stake fishing appears to give the steadiest supply, and is exclusively carried on by gangs of convicts, as it requires about ten men to work one set properly. Self-supporters cannot club together to buy the bamboo fences, nor could they work it, unless by hired servants, consequently this description of fishing is entirely in the hands of Government. Fishing stakes are constructed by fixing bamboos at regular distances in the muddy bed of some appropriate locality. A large piece of water is enclosed, and at its centre, opening inwards, are three chambers communicating with one another. These stakes are completed by attaching split bamboo screens (taties) to the fixed bamboos, and constructing a door to the innermost chamber, which can be closed at pleasure, thus entrapping the fish: it is cleared out at low water. The upper edge of the fishing stakes have to be about one foot above high-water mark. Owing to the large number of barnacles and destructive molluscs, they rarely last above a few months, whilst, unless kept clean, fish will not enter. They should be shifted every ten days or a fortnight, as the fish become so cunning that few are taken after it has been standing a few days. Owing to the large amount of coral, it is not always possible to discover a place where bamboos can be driven in, even in localities which otherwise would appear to be exceedingly well adapted for this description of fishing. Stakes succeed best in the rainy weather, when the water is not very clear, as from June to September.

Drag nets are used by gangs, and answer best during the rainy season. Coral reefs considerably interfere with their employment.

Cast nets, owing to their being used by a single individual wading into the shallow water, or from a canoe which is paddled by another man, appear most adapted for the self-supporters, and it is the form they mostly employ. It is by cast nets that sardines, *Clupea neohowii* C. V., are taken in quantities as baits for the line fishermen, or else as an article of food. The sardine season is best from November to March, after which period, having deposited their ova, many retire. There is no difficulty during this period in capturing, in appropriate places, quantities of these fish with this form of net; but, as food, it is inferior to the descriptions of fishes that are taken by hooks and lines, or the larger ones that are captured in the stakes. Any amount of sardines may be taken, more especially at Port Mouat and along the shore, but the difficulty is in disposing of them when caught as they rapidly become putrid, and no convict will purchase them when he can obtain the larger and better kinds at the same price. This is the chief reason the self-supporters take such a much larger quantity of fish than those working in the Government gangs, but there can be no comparison as to quality. Formerly, the sardines and small fishes were sold at half the rate of the stake fish, but now all are the same.

Hooks and lines.—This description of fishing commenced about two years since, and by this means most of the finest fish are taken. It is carried on all the year round, except in very rough weather; but is most prolific during the dry season. The most appropriate places are the bays and out at sea; if the water is clear and the bottom rocky, from 10 to 12 fathoms is about the best depth for taking large fish, as the water shallows the smaller species are captured. Men are employed in gangs at Haddo for this description of fishing, they take their baits (sardines) with a cast net, leave in the evening and remain out all night in the boat, returning in the morning, a second gang succeeds them: consequently they work on alternate days. Some self-supporters also fish in this manner, sea perches (Serrani, Mesoprions, Genyoroge's) and horse mackerel are taken in this manner, but not unfrequently as the captures are being hauled on board, a Shark seizes the fish and breaks the line, likewise many of the stronger fish, when hooked, get under the coral, and the line becomes divided. These, however, are contingencies that must be expected, consequently spare tackle in much larger quantities than now supplied should be furnished. The hooks, when I was at the Andamans, were being purchased in the bazaar at one anna each, but they were of a very inferior description, so much so, that the self-supporters were getting some made from the rings forming the handles of old cast iron cooking utensils. Lines also for fishing were being purchased in the bazaar, but the self-supporters procure cotton thread, from which they make their own.

Observation on the fish supply and fisheries in general.

12. The morning after my arrival at Ross I saw the fish brought in by the gang of eight men who had been out the previous night fishing with hooks and lines. There were upwards of 100lbs. weight, whilst the quality of the species for food could not be surpassed. There were principally sea perches and Dentex's, besides there was a moderately-sized Shark, which, however, only the Madrassees eat. However, there was an average of upwards of 13lbs. per man taken on the previous night, but complaints were made of the deficiency of boats for fishing purposes, which was apparently well grounded. During the few succeeding days I saw the various modes of fishing around the settlement, and the drag net used in Phœnix Bay, when a large draught of a new species of mackerel was taken. Some of the large nets in the settlement were laid up as requiring repairs. The convicts with cast nets did not appear to be very expert in their use. The stakes required shifting, and a deficiency of canoes was very generally complained of. I went several times to North Bay, and satisfied myself as to the impossibility of using drag and cast nets over a great portion of its extent due to the growing coral. Nothing could exceed the beauty of the view in the deep clear water; innumerable fishes of almost every conceivable colour, most diversified forms and different sizes were to be perceived quietly swimming about, as even the sandy bottom was easily seen. In some places the living coral looked like beautiful blue tipped moss, in others like giant mushrooms, or in the form of sticks, leaves, or flowers. As the fishing lines were let down, numbers of fish crowded round, but many only looked at the baits, but would not bite. Although, owing to the assistance I received from nearly every body, the number of species of fishes I collected is perhaps the largest on record in so short a time from one place, I am satisfied that I saw very many more that I failed in taking. On only four fish did I perceive parasites, which extraordinary small proportion would seem to be a decided proof of their excellent condition. The Siluroids and Isinglass Polynemi, as I have observed, were nearly absent, consequently Isinglass could not be manufactured on the Andamans. I could not hear of any sea-snakes, usually so abundant in the Indian Seas, and although the Andamanese asserted they knew of one sort at "Jolly Boys" Islands, they said no one had ever been bitten by it; on its being brought to me I found it to be a sea eel, *Gymnothorax reticulatus*. Pearl oysters, *melagris margaritifera*, were lying about the beach in considerable quantities, more especially at Phœnix Bay; but they were on most places along the shore, and might prove well worth investigating. It was very evident

from the appearance of the shells, that the mollusc had not been dead a full season, consequently one may fairly conclude that pearl oyster beds are in existence on the shores of the Andamans. A species of chank shell, *Turbinella rama*, Lam., so valued by the Natives of Hindoostan, is in fair abundance. During my visit to the Andamans, I procured a rather extensive collection of the land and fresh water shells, but perhaps the one which will be most valued by naturalists, is a fine specimen of the *Nautilus stenomphalus* with the mollusc complete, it having crawled inside one of the stakes.

Excursion with the aborigines to see the best fishing grounds, killing fish by means of bows and arrows, &c.

13. From Port Mouat, as I have observed, I went with Mr. Homfray and the Andamanese to the neighbouring fishing grounds. As their manner of obtaining the finny tribes does not appear to have been recorded, I will give a short description of what I personally witnessed. We left the Andamanese encampment at 3 P. M. at low spring tides, taking with us 17 of the aborigines in our boat, their ages varying from about 19 to 10 years. The females and younger children with three hand or landing nets, remained in the stern of the boats; the bachelors with three bows and arrows and one spear in the forward part, and as usual the latter were constantly chaffing the former. One youngster took the rudder, and we prepared to start for "Jolly Boys" Island, some two miles distance; scarcely was the anchor raised, when a lad in a canoe came with some fish, and likewise handed in a large piece of dead coral, amongst the branches of which numerous beautiful fish (glyphidodons, apogons, &c.,) were to be seen alive, as well as some lovely little crabs. When I suggested they might have got in three by accident or put there for show, over the side of the boat dashed a young savage, who dived down and came again to the surface with another piece as large as his head, and in it were 40 small but living fishes. As we were again starting, we heard a shout of *ooch-rah*, *ooch-rah* (fish, fish), when another canoe arrived, with some splendid specimens obtained by means of bows and arrows. At last we started, the Andamanese carrying as usual fire with them, and asking for tobacco and pipes, their most constant word being *jay*, *jay* (give, give.) As a fore-taste of what was to come, provided they did well, we presented the Chief with a looking-glass, some tobacco and a box of fusees, and we also gave our fellow passengers another box of fusees, which was entirely emptied before we came to the end of our short pull, as they were unable to resist amusing themselves by "making fire." We passed shoals of fish, many being of the most brilliant hues; as we neared the shore, the Andamanese pointed out a turtle or tortoise, but did not succeed in obtaining a shot at it. On landing they at once found its track, and asserted it had been on shore to deposit its eggs, but I refused to stop to hunt for the nest as the tide was on the turn. Away went the females along the shore, the bachelors with their bows and arrows and spear as far out upon the reef as they could proceed, whilst the younger children stayed with us to collect shells and small fish. As soon as we commenced wading into the sea, hundreds of fish darted about, either from under one piece of coral to another, or from sea weed to sea weed. Now our juvenile companions commenced to give chase: first the little Blennies claimed our attention, and though some escaped into holes in the coral, we took as many as I required. Occasionally, whilst feeling under coral or sea weed for a fish, a crab would lay hold of the hand of the investigator. At one yell rather louder than any which had preceded it, and the assertion that a "a sea devil" had injured a boy, I proceeded to the spot, and saw a beautiful scarlet and banded fish *(Pterois volitans)* swimming off, the lad whom it had wounded refused to touch it. Its fins were expanded, and it was sailing very quietly away as much as to say "touch me, if you dare!" However, I threw a pocket handkerchief over it, and in this manner procured it. But many fish I had never previously taken darted past us, and the little Andamanese began to warm to their work; sooner larger game rewarded their labors *(serrani*, several species of *Teuthis*, some mullets, parrot fish, *Hemigymus melanopterus* and *Callyodon viridescens.)* Whilst thus employed, we heard a loud shout seawards, and on looking perceived a large fish struggling with our archers. It proved to be a ray, nearly 6 feet long. After an hour's collecting, observing the numerous sea slugs, *Trepang* or *Beche de mer*, *(Holothuridæ)* which are used as food by the Chinese, and obtaining about sixty pounds weight of shells, we went to see how many fish had been procured by means of bows and arrows, and found that in 1½ hours 31 large mullets, averaging about 3lbs. each, had rewarded their labors, and that without the loss of a single arrow. The succeeding day the same individuals killed 56 large mullets by bows and arrows within two hours' time. As soon as a fish is viewed, all are on the alert; they appear to be at once endowed with a new life, as active as cats, and very acute in their eyesight; they fire the arrows at objects in the water, which no European unused to the work could perceive. They appear to aim under the fish, and mostly hit it through the bowels: when struck, away darts the unfortunate victim carrying off the floating arrow (see paragraph 4), but it soon either becomes entangled in sea weed, or the tired and wounded fish gives in, the arrow floats, the captive's life is nearly over. Had we possessed the means of carrying more fish, a much larger number could have been killed, but the Andamanese suggested they had enough to eat, and declining carrying what was of no use to them. As we were about leaving, one of the aborigines brought an *Amphiprion percula*, and on being told

that it was approved of, observed that she could get numbers more. She took us to a sea-nettle, *Actinia*, which she pulled off the coral rock by inserting her hand behind the attachment of this polype, and on shaking it into the net two more of these litte fishes came out. Subsequently this was repeated to twelve others, and all had two fish inside them, except one, which had three. They asserted these fish usually resided within this curious living domicile. On returning towards our boat, upwards of one hundred esculent swallows were seen soaring about, and perceiving a cave on our right, it suggested their nests might be there. We sent in the Andamanese, who soon returned with two old ones, and they informed us that the season was passed. We caught some specimens of the birds by knocking them down with our hands as they dashed out of the cave. Further on we came across a *Chiton*, on a rock, which they pointed out as excellent eating, but on being asked whether they eat the sea-slugs, they appeared disgusted at the idea. We reached the boat as darkness set in, when the fish were divided, and it was late before we reached their encampment, when the Chief came into our boat to see what he was to get. Having given all the presents, amongst which the spears for Dugong hunting seemed to be very acceptable, we left for Port Mouat, where we arrived shortly after midnight.

Summary of the present condition of the fisheries, and propositions.

14. In making a short summary of the present condition of the fisheries of the Andaman Islands, I must first call attention to the very peculiar circumstances under which those fisheries have been created and worked. They have been no resident fishermen to demonstrate the best modes of procedure, and the very fact of being placed in the fishing gang has scarcely been an inducement to labor, but to rather the reverse. It could not, under these circumstances, be supposed that more appropriate plans would have been suggested by convicts, who on doing so would most probably have been directed to join the fishing gang, by no means a desirable appointment. There are neither sufficient fishermen, canoes nor tackle, and, although the self-supporters take a larger amount of fish than the Government gangs, it is due to their capturing sardines, which, though more abundant, are very inferior in quality to the fish taken in the stakes and by hooks and lines by the Government gangs. I may here remark that when at Port Mouat I enquired why the self-supporters were so idle as regards the fisheries, and was informed that they could not dispose of their captures. As an experiment, four were sent out with two cast nets, and in four hours they obtained 260 pounds weight of sardines, and had to return, as their canoe could hold no more. They assert that they could go on for months taking at this rate had they a market. They dry some on the rocks and export them to Ross, where Madras convicts purchase them. The Government fishermen do not appear to be taken by selection, neither are they considered permanently attached to their work, even should everything be proceeding satisfactorily, but are drafted away for jungle clearing, bund raising and other employments, and new hands sent in their place. This is asserted to be one great cause of injury to the sea gang, for new hands cannot work, they become sea-sick. Convicts, if they do work at the fisheries, are not rewarded for doing well, nor punished if doing nothing. If they return without fish, asserting the nets have been carried away by Sharks having entangled themselves in them, or their lines have been broken by large fish, or divided by the coral, no one can prove that such is not the case; responsibility does not appear to exist anywhere, in fact, supervision is almost absent, whilst fisheries most especially require it. As regards executive control, there is one Tolidar over about 20 men; this individual, however, is not selected for his actual knowledge of fisheries: unless he is well supervised, he must be open to bribery by those under him, in order to screen the lazy, even if for no other cause. This is one strong reason why I object to the new plan, which prevents direct supervision. The Commissariat Officer might, without doing injury, keep the accounts and furnish the fishing tackle, but I would suggest the local officials should supervise the fisheries in their respective ranges, and an Overseer the more direct control. This Overseer should be practically acquainted with fishing, and probably a convict might be selected for the post; under him should be a Jemadar, to extend the supervision more completely over the Tolidars and fishermen. The Overseer and Jemadar should daily examine one or more fishery, and neither have to attend offices nor keep any accounts. As regards the number of fishermen, they are insufficient, and have only one scale of pay, and no inducement to labour.

Failure of convict gangs. Propose an intermediate grade between convicts and self-supporters, with stringent rules, to keep them at their work. Details.

15. That convicts employed as gang fishermen have failed in giving satisfaction is abundantly proved by the official reports, and the state of the fish supply; on the other hand, the self-supporters at Port Mount complain that they cannot sell the fish they capture, so turn their attention to keeping cows and goats. The ticket-of-leave men, who are generally allowed wives, do not care for fishing, which is work only suitable for poor men, they will occupy themselves with it when there are plenty of fish, and the weather is fine, otherwise they cannot be depended upon for a regular supply. For fishermen two things are essential: knowledge of the work and attention to it at such hours that the market may be supplied in the morning; an undertaking which I consider might be met in the following manner:—The fishermen at the different stations should live

apart from all other convicts in distinct villages, and the Tolidars with them, they should not be permitted, under any circumstances whatever, to marry, keep cows or goats, or any description of poultry, as such evidently interferes with their legitimate occupation. If they have cattle they will go for branches of trees wherewith to feed them, or return at the proper hour to milk them, &c., and thus their duties are neglected. I would suggest that convict gangs, as at present constituted, be abolished, and a sort of intermediate grade between them and the self-supporters should be created, (for the peculiar circumstances of the case require peculiar dealing with), giving the work to them that should be done by the former, but purchasing the fish from them, as is now done, from the latter. On the arrival of a batch of convicts any fisherman or suitable person desiring it, should be drafted for trial into this gang, and, if he succeeds, kept there; if not, sent back. They must, in short, distinctly understand that if they fail they will be remanded, which rule should be rigidly enforced, but so long as they work well and are not sick, they ought not to be drafted away for other occupations. After about three or four years at this work, these people will, doubtless, begin to earn money, and wish to go to some more quiet and less troublesome work, and the inducement of being permitted to leave the gang should be held out, when they might become self-supporters, as at present, but take up any occupation they desire. Different sets should be told off, for hook and line fishing, cast nets, drag nets, float nets if they can use them, stakes, and the other descriptions of fishing, and promotions might take place from the more difficult and less paying forms, to the easier and more remunerative, provided the parties have proved themselves deserving of promotion. As a rule, fishermen should be out during the night at line fishing, large net fishing, and clearing the stakes, to be in time for delivering the fish by 9 A. M. The Tolidars should be responsible that this is carried out, the men should be fined if they refuse to work, and returned to the gangs if they persist. I would propose 149 men be employed in the fisheries, and to show that this is not excessive I extract the following from *Major Davis's* report:—"The Superintendent asks for 150 convicts to catch fish for some 6,000 convicts, whereas now there are upwards of 7,000, and as soon as the rationing system comes into operation, a much larger proportionate supply of nitrogenous food will be required." I would suggest these 149 men being thus divided: one Overseer on Rs. 50 a month, and one Jemadar, whilst there should be a Tolidar over every 20 men. I would suggest the establishment of fishing villages, locating the men much as follows: Ross Island, 20; to be solely employed in line fishing at sea. Corbyn's Cove and South Point, 20; Aberdeen and Phœnix Bay, 20; Hope Town, 20; Haddo and Navy Bay, 20; Viper, 20; Port Mouat or McPherson's Straits, 20. Every 20 men should have two large canoes and three small ones suitable for cast net fishing, going to the stakes or the various occupations necessary in this employment. The question may well be considered here, of how are these fishermen to be paid, as I consider paying for the captures most essential to success. They should not receive any salary as is the rule now with the self-supporters, but be paid for their fish (with exceptions to be enumerated) at the rupee for 25lbs., the odd pound (it now being lbs. 24) being allowed the Bunniah for dryage and wastage. This amount, however, should not be paid for sharks, skates, and rays, which very few will eat, neither for sardines taken along the sea shore from October to March, and where they so abound, that several hundred pounds daily can be taken by a single cast net, at such times and in such places a rupee per lbs. 50 might be given.* Also for sharks, provided a shark's liver-oil factory were to be created (see paragraph 17), some different arrangement for payment will have to be instituted, but that could not be decided upon previous to a trial being made. Government may occasionally be losers by the fish becoming putrid, for I would suggest all taken being purchased by them; on the other hand, they will be considerble gainers in the following ways; in no longer paying 140 convicts, who, at two annas a day, receive about Rs. 3,193 a year: in the fishermen in future paying for the cost of all boats, fishing stakes, tackle, &c., besides the increased captures should remove the necessity for sheep for convicts, and thus relieve the settlement of a yearly outlay of at least Rs. 55,619 (see paragraph 6). Should the foregoing plan be deemed impracticable, I would suggest four maistrees on first class pay to every gang of 20 men, chosen by merit, and not by time, and extra clothing should be given, and grog and quinine might be allowed when the work is being satisfactorily carried on. In whatever manner the fisheries are worked, the fishermen or their Tolidars should have nothing whatever to do with the disposal of the captures, but hand them over to the Bunniah, who should give a receipt for the weight received.

Plan of providing boat and tackle, and how the expense should be met.

16. Provided my proposition of substituting self-supporting fishing gangs in lieu of the present plan be approved of, I would point out how I would suggest the expense for the various nets and implements might be met, and the fishing gangs assisted without any pecuniary loss to Government. I would propose that at first should any of the present

* The old rate was 12 lbs. a rupee for the best varieties of fish, and 24 lbs. a rupee for sardines.

fishermen wish to belong to the gang under the new rules, and are qualified for the same, they may be permitted to join. That the tackle, canoes, and boats, now in use, be given over free of cost, but to remain Government property in the hands of the gangs. That all future requisites as canoes, tatties, nets, dhahs, knives, hooks, lines, &c., &c., be kept ready, and supplied to the gangs at rates which cover the Government outlay, but are not so excessive as are now demanded in the bazaar for articles of a very inferior quality. Canoes might be given at eight annas a foot, whereas now the self-supporters have to give two rupees for the same amount of work from Chinamen. Logs might be floatod to Viper, and worked into canoes by the Burman convicts who well understand how to do it. Tatties for stakes, averaging 8 feet high by 15 feet long, might be easily constructed at eight annas each by the invalids at Viper. Bamboos, which have to be fixed five cubits deep in the mud, must be obtained during the rains. "The cost of nets," observes the Commissariat Officer, "is for a hand (cast) net of thread, weighing 2lbs. with 14lbs. of lead, Rs. 6-12. A drag net of 300lbs. of twine, 2,100lbs. of lead, about Rs. 212. Other sizes according to weight." I would here suggest that much less expensive substances might be worked up into equally serviceable articles by the invalids and chain gangs at Viper. Much cheaper fibre than cotton thread and equally good could be obtained in the Andamans, the pineapple was introduced from Burmah at a considerable expense partly for this purpose, and it would be well, (having only reference to the question of nets), were it imperative on convicts who eat the fruit, that the shoots should be kept and planted in some of the newly cleared land, where they thrive exceedingly well, whilst the fibre is excellent, although requiring some amount of labour to prepare. Wild plantains, so common in the Andamans, might also be sown broadcast in new clearings when the land is not requisite for other cultivation; not only would it be useful for its fibre, but partially prevent the weed, known as Egyptian grass, from taking possession of the ground, or the Bandi-koi might be more extensively propagated, as it is an excellent substitute for hemp, besides its fruit being employed as a vegetable food.

Proposition respecting the manufacture of fish-oils at Port Mouat.

17. Besides the direct question of working the fisheries, there are a few other subjects I would suggest as worthy of attention, and first the practicability of manufacturing *fish-oils* at the Andamans. They are of two varieties; the *simple animal-oil*, so necessary for all descriptions of machinery, and *secondly*, sharks' liver-oil required for *medicinal* use. As regards *simple fish-oil*, the sardines at the Andamans are identical with those of Malabar, from which a valuable oil is obtained. They exist in enormous shoals, being most common from October to March. They are said to breed about the latter end of February, then to diminish in numbers. It is during the breeding season that the manufacture of fish-oil might be carried on, previously they are thin, but do for dried fish. The fish could apparently be taken in almost inexhaustible quantities, and without doubt some of the convicts must be well aware of how the oil is obtained by decomposition or by heat, and almost the only requisite in the latter, is a large iron pot for heating the water in, being careful that this is very gently done, and never exceeds 130°, the oil is skimmed off as it floats to the surface. *Medicinal Sharks' liver-oil* I have observed upon in my report on the fresh-water fisheries of British Burmah, page 8, para. 18. Sharks abound off Port Mouat, and fuel is in abundance; a shark net might be made by the invalids at Viper. The mesh should be large, the substance employed strong, and the net should be floated in with the tide. Should it succeed, and it appears as if it ought to, the factory at Calicut, which has failed to furnish the requisite supply, might perhaps be abolished, and the drug made more economically at the Andamans.

Salting fish during dry season, drying when they are not breeding.

18. *Salting fish* might be carried on during the dry season at Port Mouat, McPherson's Straits, or Corbyn's Cove, but it probably would not answer during the rains, owing to the prevalence of numerous flies, the eggs of which rapidly generate maggots. Sardines and allied fishes, prior to the breeding season, might be dried on the rocks for "soukka" or *dried fish* relished by the Madrassees. The present plan is to leave them on the rocks on the sea-shore, or one of the islands for three days. Birds take away a few, but this is inconsiderable, whilst the Andamanese only eat fresh fish, so they do not interfere. I examined four bags of this dried fish at Port Mouat, being three days' work of three self-supporters. They had 192 seers, which at four seers the rupee (provided all were sold) gave them the sum of Rs. 48, or Rs. 16 each man, for three days' labour. The fish were of three descriptions, (assorted) Engraulis telara; E. boelana; and Clupea Neohowü. All had been captured by cast nets, and no expense incurred in the drying.

Pearl oyster banks might be discovered.

19. The pearl oysters likewise seem deserving of attention. I observed the shells in considerable numbers in sheltered spots, and perhaps the Superintendent could suggest what appropriate rewards might be offered to convicts for discovering where the beds are.

APPENDIX.

Return from the Deputy Assistant Commissary General.

Cost of Meat issued to convicts in 1869:—

	lbs.	Estimated Cost. Rs.	Recovered. Rs.
Beef	22,450	6,059	2,109
Mutton	52,522	21,166	5,246
Pork	3,523	889	436
Sheep alive	532	4,403	369
Sheep's heads	1,660	666	666
Total ...		33,183	8,826
Difference ...			24,357

Convicts pay for meat at reduced rates. Rationed convicts do not pay for it at all.

NOTE.—The above estimated cost does not include freight. Freight is now charged Rs. 5 per head by the B. I. S. N. Company.

Sheep remaining 1st January, 1869	1,746
Received during the year	7,152
	8,898
Issued and died ...	7,129
Remaining 1st January, 1870 ...	1,769

Appendix to DR. DAY'S *Report on the Fisheries of Port Blair.*

As to sharks' liver oil, of which a deficiency was complaind of, that no longer continues. The sardines have returned as have likewise the sharks, and the factory is in full working order.

The oil sardines have returned to Malabar, and I have personally made minute enquiries into the mode in which the oil is manufactured, which is effected in one of the two following manners.

Should sardines be fat, their livers are removed and placed in an earthen pot; these glands are covered over with about 2 inches of water. This is gently heated for about 15 or 20 minutes until it is 130° when froth appears on the surface, and the earthen pot is removed from the fire. The oil is now skimmed off with wooden ladles. It is worth 2½ Rupees a maund.

The second plan is more wasteful. A canoe is filled three quarters full of fat sardines and placed in the sun. About mid-day boiling water is poured over the fish, and the oil floating off, is skimmed into pots. This is repeated for three days.

Sardines in Malabar breed in June and July, after this they get fat, and from August to November or December are employed for making oil.

AGRICULTURAL IMPLEMENTS AND MACHINERY FOR EXHIBITION AT SAHARUNPORE.

Revenue.
No. 30.

INDIA OFFICE;
London, the 28th April 1870.

To His Excellency the Right Hon'ble the Governor General of India in Council.

MY LORD,—After considering the despatch from your predecessor in Council No. 70, Public, and dated the 11th of October 1866, my predecessor, Secretary Viscount Cranborne in Council, entrusted to General F. C. Cotton, who had on several occasions of a like nature given his valuable aid to this Department, the task of ascertaining what agricultural implements and machinery would be most useful for the object which your predecessor in Council had in view, of exhibiting

these specimens of implements for the instruction of Native cultivators, under the superintendence of Dr. Jameson, in connection with the Botanical Gardens at Saharunpore. Various circumstances have delayed the selection of these implements at an earlier date; but I now transmit to you printed copies of a letter and two enclosures from General Cotton containing his recommendations on the subject.

2. You will perceive by the reply* which I have directed should be sent to that officer, that I have requested him to order all the articles recommended by him, the cost of which, including the packing, will be under £250, to be sent to the Director General of Stores at this Office for transmission to Saharunpore, or direct from each of the manufacturers as may seem best to him.

* Dated 12th April 1870.

3. With respect to the proposal for sending out models of machinery and implements for exhibition, General Cotton found that the cost would be so great that he did not recommend its being incurred.

I have the honor to be,

MY LORD,

Your Lordship's most obedient, humble Servant,

ARGYLL.

From MAJOR GENERAL FREDERICK COTTON, C.S.I., to FORBES WATSON, Esq., India Office,—Dated Torquay, the 19th March 1870.

I ENCLOSE a list* of the implements, &c., I should recommend being sent to Saharunpore.

* Appendix A.

In a former letter I gave some explanation† of the machines and tools I thought it advisable to send to Dr. Jameson at Saharunpore. I must ask you to forward a copy of that letter to the Doctor, as it will save the recapitulation of my object in suggesting each implement, and I will only now add a few words that seem necessary in further explanation.

† Appendix B.

I have entered in the list two horse-powers, one to be stationary, the other arranged to pack on wheels for locomotion. The chief object of the latter is to work the threshing machine and winnowing machine in the field, as in India it will very generally be better to thresh the corn at once rather than stack it.

The stationary horse-power will be suitable for all purposes, but will be specially adapted for the chaff-cutter, corn-crusher, and grist-mill, all of which are entered in my list.

The locomotive (or portable) horse-power would be well employed by cutting up straw at any place where the native carts halt for the night, where a great saving of fodder would be effected by it.

Amongst the extra parts to be sent out with Messrs. Howard's plough is a subsoil body, which I consider it very important to introduce into India. I have described its use in my former letter. It follows the common plough, and disturbs the bottom of the furrow without bringing the subsoil to the surface, which is almost always advisable, as the lower soil, not having had the benefit of the air, is rarely so productive as the surface soil till it has been loosened and exposed to the action of the air for a time, and this mode of working by a double operator is especially suited to India, where the team employed is not so powerful as the heavy horse team of England, and where the attempt to break up the whole depth at once would be attended with great waste of power, if it could be done at all.

Messrs. Howard's subsoil body is made to fit on to his common plough instead of the mould-board, and it is on that account mainly that I send out his ploughs.

I have found a light plough of Messrs. Richmond and Chandler's, made for the cultivation of cotton in India, which I also recommend being sent.

Another plough, I recommend, is found in use in Devonshire, and is an admirable implement that will, no doubt, become every year more generally used in England. It is very light, and can be worked both ways, which does not leave the land in butts, but quite even, so that the mowing machines may be used over it. The headlands are less trampled, and there is less waste of time in turning. These ploughs have a spade, as it is called, to be used when it is advisable to skim the surface before ploughing. In this case one end is fitted with the spade, which cuts and turns over the surface, and the plough returning on the same track with the ordinary coulter, covers what the spade had before turned over. In Devonshire breaking up clover is done in this way.

I have also added one of the original grasshopper ploughs of which the above is the modern improved implement. This old plough is still in use, and could be so easily made, and at so little expense, that it might be more readily adopted than the iron plough of the same form.

The cultivator, I recommend, will be a most valuable introduction into India. Its use in this country is becoming every day more extended, and in some light soils it is so effective that it is not thought necessary to use the plough above once in three or four years.

I have entered a very cheap threshing machine as the most likely to be brought into use in India. It will require some modifications to suit it to the peculiar grains of that country, but it will suit some, and I hope ingenuity will be found to adapt it to all.

I have recommended three different winnowing machines, and should be glad if all were sent out. As I have said in my former letter, it is one of the machines most immediately required. It has been for many years adopted in China, and was at once appreciated in Madras.

I have great hopes that if these implements are sent to Dr. Jameson they will be fairly tested and such modifications made of them as will secure there introduction into the North of India.

To ensure the same implements being sent that have been selected by me, I forward by this day's post the estimates of the several manufactures of the cost of each article. And it will be observed that allowance is made for the necessary packing for safe transmission to and through India.

A.

List of Tools, &c., suggested for the Saharunpore Museum and Farms.

Tools, &c.	Cost. £ s. d.	Manufacturers.
1 horse gear, &c. ... ... 2 small cotton ploughs, &c. ... ... 1 No. 3 chaff-cutter, &c. ... ... 2 light horse-hoes, &c. ... ... 1 No. 5 corn-mill, &c. ... ... 1 cultivator, &c. ... ... 1 set of harrows, &c. ... ... 1 No. 2 corn-crusher, &c. ... ... 1 No. 2 sack-holder, &c. ... ... 6 corn sacks	72 10 6	Richmond and Chandler, Salford, Manchester.
One dozen Aberdeen scythes, &c.	4 11 0	Ditto.
1 combined reaping and mowing machine, &c. ... ... 1 eclipse reaper, &c.	46 10 0	Samuelson, Banbury.
1 No. 2 horse-rake, &c. ... ... 1 No. 4 horse-rake, &c.	21 5 0	Keyworth, 35, Tarleton Street, Williamson Square, Liverpool.
1 winnowing machine, No. 3007, in the Royal Agricultural Society's Manchester Catalogue of 1869 ... ... 1 winnowing machine, No. 3010 in the same Catalogue ...	19 14 6	Sawney, Beverley.
1 No. 2 winnowing machine	9 10 0	John Richardson, 8, Brunton Place, Carlisle.
Portable horse gear and threshing machine	38 7 0	E. Chambers, St. Philip's Iron Works, Bristol.
1 Devonshire spade and general purpose plough ... ... 1 grasshopper plough	8 14 0	W. Chamberlain, Dodbrook, Kingsbridge.
1 six-row corn-drill, &c.	9 15 0	Bristol Waggon Works Company, Temple Gate, Bristol.
1 Howard's patent D plough ... ... 1 ditto, DD plough, with subsoil body, &c.	11 13 10	Howard, Britannia Works, Bedford.
	242 8 10	

Memorandum by GENERAL FREDERICK COTTON, C.S.I., *relating to the Agricultural Implements, &c., suggested for despatch to Saharunpore.*

Barn Works.—These consist of a horse or bullock gear as the motive power, with a set of machines to be worked by it, for thrashing, winnowing, chaff cutting, corn crushing, &c., &c. The costs, of course, depending on the variety of machines required.

I should send more than one set of these, as they are made very cheaply now, and their introduction would produce most important results. They might be established for the use of a whole village, and thereby lead the Natives to get their work done out of their own homes, when, as will generally be the case, it can be better done by those who make it their special business. I need hardly say that this is one of the changes most wanted in India.

Chaff-cutter.—This machine has been found of great value in the Madras Presidency, and ought to be generally introduced in a country where so much use is made of straw as food for cattle. Very cheap machines should be sent out, and such as might easily be copied in India. To make them cheaply, they must be made in great numbers; and it would be a great advantage to India if the manufacture of such important implements was introduced.

It has been found in England that those implement works have been most profitable which were confined to the making of one class of implements; and such would be especially the case in India, where the Natives, not having much inventive genius, are admirable in copying, and attain to great skill when repeating the same operation.

Corn-crusher.—There can be no doubt that much of the hard pulse and grains of India are only partially digested by the animals fed upon them; and it would be very admirable to reduce them to meal before they are used. My experience in all feeding was, that the more thoroughly every grain was reduced to meal before it was used, the more advantage was derived from it. But as the corn-crusher or "kibbler" is much cheaper than the mill, and requires less power to use it, it would be well to send out one or more of these machines. There is, however, a cheap American "grist mill" which might also be sent.

The Corn-drill.—The cheapest form of this machine is rather expensive, and its value depends upon its use being well understood. The advantages of the corn-drill are, that the seed is so laid in the ground that it is sure to be well covered by the soil. It is also so placed, when the lines are far enough apart, that the horse-hoe can be used to remove the weeds when the crop is growing, and the quantity of seed used can be generally secured. But when, as is generally the case in England, a great quantity of seed is used, it is the worst plan of sowing that could be adopted. The seed is deposited in a continuous mass, and the growth of the plant is crippled, exactly as it is in hedges, where from close planting in a line all our timber trees, beech, oak, maple, &c., are made to grow as shrubs for ever, simply by their roots being crowded, and all of one kind. Hence it is that our farmers find when they use much manure, the advantage is lost by the straw becoming too thin to support the ear, and the crop is laid.

In sown broadcast the seed is better placed, and the plants are more clear of each other. But where Mr. Hallett's system of thin sowing is adopted, and the cups of the drill are made to raise one seed at a time only, and they are at sufficient intervals to give each plant a fair space, the drill is turned to the best possible account, and I should recommend a good common drill being sent out, fitted as Mr. Hallett's are, for sowing as little as one peck to the acre. This would not interfere with the trial of larger quantities of seed, but ought, if possible, to be used as a means of introducing thin sowing, both for the sake of economy of seed and to secure a vigorous growth of plant.

Cultivators or Grubbers.—These implements, if not too heavy, would be of great use in India; they do exactly the work of the common Native plough, but can be made to move soil to any depth. Like the Indian plough, they only break up the soil without turning it over as the English plough does, but they require far less power than the plough of England, and would be more readily adopted by the Natives. With the Native plough there is a great loss of labor, as the single point drawn through the soil does not employ all the strength of a good pair of bullocks, and the consequence is that they go a great and unnecessary distance in ploughing each acre. With the cultivator any number of points can be used, according to the strength of the cattle, the hardness of the soil, or the depth to be cultivated, and thus the field is not traversed more than is necessary. The points also are of a much better form than those of the old Indian plough, and I should recommend several of these useful implements being sent out.

Harrows.—It would be well to send out two or three varieties of this implement, which could be copied and modified to suit the work required in India.

Horse-hoe.—This would be of great use, especially in the cultivation of cotton, and the various kinds of pulse, dholl, or other shrubby plants which are sown in lines distinct from each other.

Horse-rake.—A most useful implement in England, and should be sent out as an accompaniment to the mowing and reaping machines.

Mowing and Reaping Machines.—One of each of these had better be sent out. But it is probable that some modification would be necessary to their use in India, with the strong straw of the millet, &c. This, however, could only be done under trial in this country. Where they are to be used, it would be necessary to pay attention to the surface of the soil before the crop was above ground, otherwise the knives would be injured by the stones and clods.

Ploughs.—The English plough in general is too heavy for India, but light ploughs, fitted with a pole and yoke for oxen, have been made, and some specimens of them might be sent out to Saharunpore. I met with them when selecting implements for Madras, but do not remember what maker manufactured them; I could, however, easily ascertain.

The Subsoil Plough.—The ordinary subsoil plough would be an admirable implement to send to India, if its use was well understood. It is a plough without a mould-board, made to follow the ordinary English plough, and rip up the bottom of the furrow, but *not bringing it to the surface,* where it would in many cases be an injury to the crop. After a time, when the subsoil has been by this means exposed to the air, it is fit for the growth of plants, and may be turned over by the mould-board plough, to the great advantage to the crop.

Sacks and Trucks.—The English sack is a very good form of bag, and when used with the common two-wheeled truck, both are quite worth introducing to India.

Scythe.—The scythe ought to be sent out; and the Aberdeen scythe with a double handle is certainly the best to introduce into India.

Spades and Digging Forks.—These cannot be used by men with naked feet, but if a rude sandal were introduced with them, they would be perhaps adopted in India for garden culture.

The Shovel.—Several forms of shovel might be sent out.

Thrashing Machines.—It would not be well to send out the more perfect kinds of the machine now used in England, which not only thrashes the grain, but prepares it for market, as they are very expensive, and would not be generally adopted in India. But there are common thrashing machines which can be worked with such light "horse gear" as I propose to send out, which would be amongst the most useful machines that could be introduced in India, where the loss both of labor and grain by the present mode of trampling out the corn is enormous.

Winnowing Machines.—This implement is of the first importance, and its benefit was at once admitted in Madras. Several might be sent out with the certainty of their being brought into use. They should be fitted both for hand and for horse or bullock power.

Pumps.—It would be well to send out a common cheap pump, taking care that the valves are not of leather, but of metal, leather being objected to by the Natives.

Wire Fence.—Some patterns of wire fence should, I think, be sent to India.

From H. MERIVALE, Esq., C.B., Her Majesty's Under Secretary of State for India, to MAJOR-GENERAL F. COTTON, C.S.I.,—dated London, the 12th April 1870.

I AM directed by His Grace the Secretary of State for India in Council to acknowledge the receipt of your letter of the 19th ultimo giving your opinion as to the Agricultural implements and machinery which it would be advantageous to send for exhibition by Dr. Jameson at Saharunpore, in order to instruct the Native cultivators in the advantages to be derived from the use of them.

I am to express the thanks of His Grace in Council for the trouble which you have given yourself at the request of his predecessor's Secretary Viscount Cranborne, to ascertain the qualities of their implements as well as for the useful documents in which you have explained them.

I am also to acquaint you that His Grace will abide by all your recommendations, and will feel further indebted to you if you will order the several articles, the cost of which, including the packing, amounts from the list which you have sent to about £242. The several invoices* are, therefore, returned to you, and the bills will be paid by the Accountant General of this Office, when they are received here with your countersignature.

* Twelve in number.

The Duke of Argyll will leave it to your judgment whether the several articles had better be sent direct from the manufacturers to Saharunpore, or to the care of the Director General of Stores at this Office, in order that he may provide freight for them to India.

Before I conclude, I am to request that you will supply me with a statement of any expense to which you may have been put by the execution of this commission by the Secretary of State, in order that the Accountant General may be directed to pay the amount to you.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

EAST INDIAN RAILWAY—DELAY IN OPENING THE CHORD LINE.

From Major F. S. Taylor, R.E., Joint Secretary to the Government of Bengal in the Public Works Department, Railway Branch, to the Secretary to the Government of India, Public Works Department,—No. 2663G., dated 17th December 1869.

Referring to Joint Secretary's letter No. 2136G. of 27th September, on the subject of the chord line works of the East Indian Railway, I am instructed by the Lieutenant-Governor to forward, for the information of His Excellency the Governor General in Council, a copy of a letter from the Board of Agency, East Indian Railway, No. 664G., dated 15th December, expressing their deliberate opinion that there is no possibility of this line being opened before the next rainy season, and that there is little probability of the line being made available for mails and passengers prior to the entire completion of the contract.

The Inspection Report of Lieutenant Wallace, dated 24th November, which is also forwarded for the information of the Government of India, exhibits the present state of the works, and exposes the insufficiency of the reasons assigned by the contractors for the unsatisfactory progress as a whole. His Honor refrains from any further expression of opinion until the expiry of the contract time brings the question directly before Government.

From E. Palmer, Esq., Chairman, Board of Agency, East Indian Railway, to the Consulting Engineer to the Government of Bengal, Railway Department,—No. 664G., dated 15th December 1869.

In reference to your letter No. 2605G., dated 10th instant, enquiring whether the Agency has considered the advisability of a partial opening of the chord line for mails and passengers at the earliest safe date, irrespective of the entire completion of the contract, I have the honor to state that, in the present state of the line, the Agency cannot give an absolute reply to your enquiry, but that, as far as they see at present, there is no probability of the line being opened before the next rainy season. Copy of Chief Engineer's letter No. 2252 of 15th instant, on this subject, is sent herewith.

From G. Sibley, Esq., Chief Engineer, East Indian Railway, to the Chairman, Board of Agency, East Indian Railway Company,—No. 2252, dated 15th December 1869.

Your docket No. 4688, dated 11th instant.

With reference to the enquiry as to the advisability of a partial opening of the chord line for mails and passengers at the earliest safe date, irrespective of the entire completion of the contract, I would remark that the date of entire completion is still so uncertain that it would not be safe to say that there might not be a period when it would be safe and advisable to open the line for mails and passengers, but not advisable to open it for general traffic.

As far, however, as we can at present see, such a condition of affairs is not at all likely to arise.

From the Government of India, Public Works Department, to the Joint Secretary to the Government of Bengal in the Public Works Department, Railway Branch,—No. 47R., dated 8th January 1870.

I am directed to acknowledge the receipt of your No. 2663G., dated 17th December 1869, reporting that the chord line, East Indian Railway, will not be open for traffic on the date fixed in the contract.

2. I am desired to express the dissatisfaction and regret of the Government of India at this untoward result of the contractor's operations. It is essential in the public interests that the line shall be made available for traffic as soon as possible, and it is desirable that, if it can be managed, this should not be later than the opening of through communication between Calcutta and Bombay.

3. I am to request that a very early report may be submitted stating the steps that are proposed to be taken to expedite the completion of the works, and enforce the provisions of the contract, and also the time at which it will be possible to open the line for mails, if not for public traffic.

Extract from a letter from the Government of India, Public Works Department, to the Government of Bengal, Public Works Department, Railway Branch,—No. 225R. of 4th February 1870.

Para. 2. I am directed to state that the Governor General in Council continues of opinion that the line should be made available for traffic as soon as possible, and if it can be managed, in such a manner as to admit of any material gain in time in the transport of the mails, simultaneously with the establishment of through communication between Calcutta and Bombay. The Governor General in Council, therefore, will be glad if His Honor the Lieutenant-Governor will be so good as to cause an enquiry to be made on this point from the Agency of the East Indian Railway Company, requesting specific information as to the time that could be saved in the fast train service by an opening before the next rainy season, and the probable cost of such an opening, if feasible. In the event of their considering any such opening undesirable or impossible, the precise reasons should be explained and reported to the Government of India.

From Major F. S. Taylor, R.E., Joint Secretary to the Government of Bengal, in the Public Works Department, Railway Branch, to the Chairman, Board of Agency, East Indian Railway,—No. 480G., dated 28th February 1870.

I am directed to acknowledge the receipt of your letter No. 110G., dated 21st current, with enclosures, from the Chief Engineer, East Indian Railway, intimating that there is no probability of the chord line being opened for traffic before the next rainy season, and that, considering the advanced state of the line, he does not think it would be advisable to take the work out of the contractor's hands, unless by the end of March there were grounds to suppose that the completion of the water-supply tanks before the next rainy season would be a matter of uncertainty.

2. The Lieutenant-Governor now looks to the Board of Agency to act unflinchingly as soon as the necessity for taking the works out of the contractor's hands becomes apparent.

From the Government of India, Public Works Department, to the Joint Secretary to the Government of Bengal, in the Public Works Department, Railway Branch,—No. 501R., dated 24th March 1870.

I am directed to acknowledge the receipt of your No. 481G., dated the 28th February 1870, submitting a letter from the Board of Agency, East Indian Railway, intimating that there is no probability of the chord line being opened for traffic before the next rainy season, and of the reply thereto informing the Agency that the Lieutenant-Governor will now look to them to act unflinchingly as soon as the necessity for taking the works out of the contractor's hands becomes apparent.

2. In reply, I am directed to point out that in Public Works Department No. 47R., dated 8th January 1870, a report was desired to be submitted on the steps proposed to be taken to enforce the provisions of the contract, and on the time at which it would be possible to open the line for mails, if not for public traffic. In Public Works Department No. 225R., dated 4th February 1870, this was repeated, and specific information was requested as to the time that could be saved in the fast train service by an opening before next rainy season, and the probable cost of such an opening, if possible. Further, in the event of the Agency considering such an opening undesirable or impossible, the precise reasons for this were desired to be reported.

3. No reply has been given to these questions, and I am therefore now directed again to request that the necessary information may be obtained from the Board of Agency, and that they may be specifically answered in detail.

From MAJOR F. S. TAYLOR, R.E., Joint Secretary to the Government of Bengal, Public Works Department, Railway Branch, to the Secretary to the Government of India, Public Works Department,—No. 963G., dated Fort William, the 2nd May 1870.

WITH reference to my letter No. 752G., dated 31st March, and in reply to your letter No. 501R., dated 24th March, calling for further information in connection with the opening of the chord line, I am now instructed to forward, for the information of His Excellency the Governor General in Council, copies of the documents as per margin on the subject of a partial opening.

No. 818, dated 9th April 1870, to Board of Agency, East Indian Railway.
Report by Lieutenant W. A. J. Wallace, R.E., Deputy Consulting Engineer to the Government of Bengal, of his inspection of the chord line.
No. 254G, dated 22nd April 1870, from Board of Agency, East Indian Railway, and enclosure.
No. 898, dated 22nd April 1870, to James Perry, Esq.
„ 683, „ „ „ „ from „ „ „
„ 906, „ 25th „ „ to Board of Agency, E. I. R.
„ 260G, „ 26th „ „ from „ „ „ „
„ 267G, „ 28th „ „ „ „ „ „ „

2. Though the Lieutenant-Governor is given to understand that Railways in India have, as a rule, been opened with perfect safety while in an incomplete state, he is of opinion that it would not be proper to press the Agency further in the present instance.

From MAJOR F. S. TAYLOR, R.E., Joint Secretary to the Government of Bengal, Public Works Department, Railway Branch, to the Chairman, Board of Agency, East Indian Railway,—No. 818, dated 9th April 1870.

YOUR letter No. 110G., dated 21st February, on the subject of the failure of the contractors to complete the chord line by 1st January, having been submitted to the Governor General in Council, I am instructed to inform you that His Excellency is still of opinion that the provisions of the contract should be enforced, and the chord line in its incomplete state made available for the public at the earliest possible date. It appears to me, however, on careful consideration that with the cöoperation of the contractors all cause for dissatisfaction may be removed, and the works left to be thoroughly completed, and formally handed over to the Company at the proper time.

2. The only positive advantage to be obtained by a partial opening would be the acceleration of the down fast mail, and if the contractors will undertake to clear the line and lock all the points every evening after the day's work is finished, and hand a formal certificate, signed by a responsible official, to the Station Master at Luckeeserai to the effect that the line is clear and in safe condition to Setarampore, I see no reason why this one train should not be worked through the chord line to Calcutta only stopping under the guard's orders at two watering places.

3. Under this arrangement, a through train for Calcutta might be made up at Dinapore to be cut off at Luckeeserai, and the regular train would run no further than Jumalpore.

4. The Deputy Consulting Engineer has been directed to make an early inspection of the chord line, in order to ascertain the actual state of the way and works and the views of the contractors on the subject of a partial opening, and I shall be glad to learn that the Board of Agency are prepared to consider this proposal favorably.

From E. PALMER, ESQ., Chairman, Board of Agency, East Indian Railway Company, to the Consulting Engineer to the Government of Bengal, Railway Department,—No. 254G., dated 22nd April 1870.

IN reference to your letter No. 818, dated 9th instant, on the subject of the partial opening of the chord line, I have the honor to send you copy of Chief Engineer's No. 872, dated 16th idem, from which you will see that, in the opinion of the Chief Engineer, in which the Agency concur, it would be criminal to attempt to run mails and passengers over the chord line while the works are in their present condition.

From G. SIBLEY, ESQ., Chief Engineer, East Indian Railway, to the Chairman, Board of Agency,—No. 872, dated 19th April 1870.

WITH reference to the Consulting Engineer to Government Bengal's No. 818 of 9th instant, on the subject of at once running the mail train through the chord line, I have to refer to my report dated January last, and to state that the conditions therein reported with reference to date for safe opening still remain, except that there has been less progress since that date than had been hoped.

I would further record my opinion that to attempt now to run the mail train nightly through the chord line at a speed of 30 miles an hour, in darkness throughout its whole journey, would be criminal.

Inspection Report of the Chord Line, East Indian Railway, by LIEUTENANT W. A. J. WALLACE, R. E., *Deputy Consulting Engineer to the Government of Bengal, Railway Department,—dated the 21st April* 1870.

ON the 15th instant I travelled over the chord line, in company with the Chief Engineer and the contractor, to see what progress had been made since my last inspection, and also to ascertain whether it would be possible and advisable to arrange for running the down mail train by that route, so that it might arrive in Calcutta at 6 A. M., instead of 9 A. M., as at present.

Considerable progress has been made since last November, but the stations and the water-supply works are still in a very backward state, as may be seen from the subjoined tabular statement showing their present condition.

The brick-work in bridges and culverts has all been completed, and the girders on the main line are all in position, except at a few bridges in the Nargunjoo District, where the girders for the second line are now in course of erection.

The embankments are practically all finished, there being only some dressing and trimming of slopes still required. The cuttings have been all completed to the full depth and width at the bottoms, but there remains a good deal of work to be done in side slopes, &c.

A single line tolerably well ballasted throughout has been laid from Seetarampore to Luckeeserai, and about two-thirds of the second line has been laid with the full allowance of sleepers, and partially ballasted.

The fencing has been completed along about one-third of the line, and is generally in progress along the remainder.

From the following tabular statement* it will be seen that the stations are all far from complete, and that the water-supply works are not nearly ready; nor can the tanks be made to the full size by the 15th June, unless the work is carried on much more vigorously than it is at present. The Chief Engineer is fully alive to this, and he has directed the District Engineers to be prepared to take the work out of the contractor's hands on the 1st proximo, if he fails to comply with the instructions given him on the 15th instant as to the force of labor to be concentrated at each of the tanks and the rate at which the excavation is to progress.

* Not published.

With regard to the proposal to run the down fast mail train, or a portion of it carrying the mails and through passengers, over the chord line, the contractor expresses himself quite willing to clear the line every evening in time for the down mail, to supply water for the engine where required, and to accept the responsibility of maintaining the road in safe working order. He also is of opinion that the proposal is a feasible one, and I have no doubt that, with proper precautions, the train might safely be run so long as the weather continues fine; but when it is taken into consideration that the rainy season is now approaching, that there are many deep cuttings of which the sides are not yet fully sloped, and that the highest parts of some of the heaviest embankments have been thrown up since last rains, it must, I think, be admitted that the running of a night train at a high speed would be attended with considerable risk.

From LIEUT. W. A. J. WALLACE, R.E., Deputy Consulting Engineer to the Government of Bengal, Railway Department, to J. PERRY, ESQ.,—No. 898, dated 22nd April 1870.

WITH reference to the Consulting Engineer's suggestion that the down mail train might be run over the chord line, I am directed to request that you will be good enough to place upon record your opinion as to the possibility of the proposal, and state whether you are willing to accept the responsibility of clearing the line and maintaining it in a safe condition for the passage of the mail train every night.

From J. PERRY, ESQ., C.E., of the Firm of MESSRS. BRASSEY, WYTHES AND PERRY, to the Deputy Consulting Engineer to Government of Bengal, Railway Department,—No. 683, dated 22nd April 1870.

I HAVE the honor to acknowledge the receipt of your No. 898 of to-day's date, with reference to the Consulting Engineer's suggestion that the down mail train might be run over the chord line, and asking me to state whether I am willing to accept the responsibility of clearing the line and maintaining it.

In reply, I beg leave to state that I am quite willing to accept the responsibility of clearing the line every evening in time for the passage of the mail train, and also of maintaining the line in good and safe running order.

With regard to the feasibility of the proposal or suggestion of the Consulting Engineer, I have no hesitation in stating that I see nothing to prevent the down mail train passing over the chord line, and that as far as the way and works are concerned I have never seen a line opened in a more perfect state than the single road now is over the chord line, and I have seen a good many both in England and India during the last 20 years.

Memo. from MAJOR F. S. TAYLOR, R.E., Joint Secretary to the Government of Bengal, Public Works Department, Railway Branch, to the Chairman, Board of Agency, East Indian Railway,—No. 906, dated 25th April 1870.

THE undersigned has the honor to forward, for any remarks the Board of Agency may desire to make, a copy of an Inspection Report of the Chord Line, dated 21st April, by Lieutenant W. Wallace, R.E.

2. With reference to Agency letter No. 284G., dated 22nd April, on the subject of a partial opening of the chord line, the Consulting Engineer begs to point out (as it does not appear to have occurred to them to check the Chief Engineer's figures) that, if he is not mistaken, after allowing half an hour for watering and slowing over the worst parts, running speed of 25 miles an hour over the chord line, accelerated between Setarampore and Howrah to the regular mail train speed, would land the down mails in Calcutta at 6-15 A. M.

3. The Consulting Engineer would also be glad to learn whether the Agency have any recent information regarding the *present state of the works* which has not been communicated to this Office.

From E. PALMER, ESQ., Chairman, Board of Agency, East Indian Railway, to the Consulting Engineer to the Government of Bengal, Public Works Department, Railway Branch,—No. 267G., dated the 28th April 1870.

IN reference to the Inspection Report of the Chord Line by Lieutenant Wallace, dated 21st instant, received under cover of your Memorandum No. 906 of 25th idem, the Agency would beg to point out one important error in it. It is stated that a single line tolerably well ballasted throughout has been laid; now all the more recently-finished high banks are, and properly, unballasted. As to the necessity for running 30 miles per hour, in order to save the three hours proposed, the Agency will endeavour to make it clear.

The present running speed of mail trains between stations is 30 mile per hour, stoppages reduce this to 25 miles per hour on the average of a 300 miles run; the saving of distance by chord line is 64 miles. This, at the average of 25 miles, gives a saving of two hours, thirty-six minutes.

The additional savings caused by fewer stoppages on the chord line would be more than balanced by delays in watering. Thus, to save three hours as proposed it would be necessary to run in excess of 30 miles per hour, even without making any allowance for slowing over the worst parts.

The Agency are not in possession of any further recorded information regarding the present state of the works which has not been communicated to your Office.

From the Government of India, Public Works Department, to the Government of Bengal, Public Works Department, Railway Branch,—No. 984R., dated 4th June 1870.

I AM directed to acknowledge the receipt of your No. 963G., dated 2nd May 1870, on the opening of the chord line, East Indian Railway.

2. The contractor has offered to be responsible for clearing the line every night and keeping it in a safe condition for the passage of the down mail train; but Mr. Sibley, the Chief Engineer, has recorded the opinion that to run the mail train nightly at a speed of 30 miles an hour would be criminal, the Board of Agency have adopted that opinion, and the Lieutenant-Governor considers that it would not be proper, under the circumstances, to press the train service upon the Company.

3. The advantage of opening the line partially would, it is stated, be the acceleration of the down mail. This would only at present affect the convenience of Calcutta, and as the Lieutenant-Governor has doubtless arrived at the conclusion not to press the Company to open the line, after weighing the advantages against the risks, the Governor General in Council will therefore leave the matter in His Honor's hands.

4. It is understood from the previous correspondence on this case that the line may be expected to be opened some time between the beginning of July and the close of the rains, I am desired to request that the Government of India may be kept informed of any circumstances which may lead the Lieutenant-Governor to form a more precise opinion as to the probable date of opening.

GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

EXPEDITION VIA BHAMO TO SOUTH-WESTERN CHINA, AND APPOINTMENT OF AN ENGLISH RESIDENT AT BHAMO.

HIS EXCELLENCY the Right Hon'ble RICHARD SOUTHWELL BOURKE, Earl of Mayo, Viscount Mayo of Monycrower, Baron Naas of Naas, Knight of the Illustrious Order of St. Patrick, Grand Master of the Most Exalted Order of the Star of India, Member of Her Majesty the Queen of England's Privy Council, Viceroy and Governor General of India, now addresses His Great, Glorious, and Most Excellent Majesty who reigns over the Kingdoms of Thuna, Paranta, Tampadipa, and all the Great Umbrella-wearing Chiefs of the Eastern Country, the King of the Rising Sun, Lord of the Celestial Elephant, Master of many White Elephants, the Great Chief of Righteousness, as a token of his desire to renew a system of friendly intercourse by which it has been the practice of successive Viceroys to maintain, on *special occasions*, a direct means of intercommunication between the Government of Burmah and the Viceroy of all India.

Since, by the favor of his Sovereign, the Earl of Mayo has assumed the Government of India, he has watched with peculiar interest the great advances which have been made in the wealth and prosperity both of *British Burmah* and of the dominions of His Majesty, and he has been led to conclude that this progress is due, in great measure, to an improved state of intercourse, as the result of treaty alliances which have been recently entered into between the British and Burmese Governments.

One of these results has been that His Majesty the King of Burmah, in answer to a special requisition made by the Viceroy through his Agent, the Chief Commissioner of British Burmah, gave his free sanction to the despatch of a British expedition *viâ Bhamo* to South-Western China, and proclaimed in a royal edict, published at Mandalay on the first day of the increasing moon of Ta-shoung-mon 1229 B. E., that that expedition should be furthered and assisted by every available means at the disposal of the Government of Burmah.

The expedition accordingly took its departure from Mandalay in January 1868, and was furthered on its journey, as far as the Burmese frontier town of Bhamo, by the support and assistance of His Majesty the King, who placed one of his own steamers at its disposal, and otherwise manifested signs of a willingness to cöoperate in the accomplishment of those wise and beneficent objects for which the expedition was originally projected.

The Viceroy has now learned with regret that, though the expedition has been enabled to accomplish the several objects for which it was specially undertaken, the officers who composed it met with serious opposition at the hands of certain Burmese officials at *Bhamo* and *Ponsee*, both of which places lie within the territory of His Majesty the King of Burmah.

At the same time the Viceroy is assured that, apart from this opposition (the evil influences of which were sensibly manifested, even after the expedition had proceeded beyond the Burmese frontier), the several races and people through whose States or Dependencies the expedition passed, were openly in favor of a revival of the old overland trade between *Bhamo* and *Momein*, and evinced evident proofs of a disposition to cöoperate in a work which they acknowledged to be full of interest and advantage to themselves, and which, in the Viceroy's opinion, cannot fail to conduce to the permanent prosperity of all those countries to which the benefits of renewed trade between Burmah and China must eventually extend themselves.

Notwithstanding, however, the Viceroy is willing to believe that the officers referred to acted in disobedience to the orders of His Majesty, and in disregard or in ignorance of His Royal Proclamation, and that His Majesty is as desirous as ever to afford that support to the revival of overland trade *viâ Bhamo* with the South-Western Provinces of China which was so willingly proffered at the time the late expedition was first projected, and took its departure from the Burmese Capital.

The Viceroy feels satisfied that, as soon as His Majesty's officials come to be convinced that it is His Majesty's sincere desire and determination to re-open the old overland caravan route between *Bhamo* and *Momein*, the slightest effort on the part of His Majesty will be amply sufficient to remove any existing obstacles, so that a work which will add stability to His Majesty's Government and cement the bonds of friendship between the King and Her Majesty the Sovereign of England and India, and will confer vast benefits on His Majesty's subjects, may be speedily accomplished.

The people over whom the Queen of England rules take the deepest interest in the extension of commerce with the Districts bordering on the dominion of the King, and the British Government will never fail to urge forward their intentions and to cöoperate with His Majesty in so noble an enterprise. The Viceroy has already so far relied on His Majesty's profession and promises of good-will as to appoint a British Officer to reside at *Bhamo*, whose duty it will be to watch over the interests of traders, and to prevent, as far as possible, the occurrence of petty differences which may possibly arise in the commercial intercourse of races who may desire to participate in the benefits of unrestricted trade.

The Viceroy and Governor General concludes this letter by assuring His Majesty of his sincere regard and friendship, and trusts that the purport of the present communication may be received and acknowledged in a spirit and with a promise of friendly agreement and cöoperation. This, the Viceroy fully believes, will greatly strengthen the stability and power of His Majesty's Government, will increase in the minds of the people of England a desire for His Majesty's welfare, and will tend to secure the continuance in time to come of peace and prosperity to the several countries over which Her Majesty the Queen of England and His Majesty respectively hold rule.

Dated 18*th October* 1869.

His Great Glorious and most Excellent Majesty who reigns over the Kingdoms of Thunaparanta Tampadeepa, and all the Great Umbrella-wearing Chiefs of the Eastern Country, the King of the Rising Sun, Lord of the Celestial Elephant, and Master of many White Elephants, the Great Chief of Righteousness, addresses *His Excellency the Right Hon'ble* the VICEROY AND GOVERNOR GENERAL of India and all the Great Western Countries.

In pursuance of the very great friendship that has existed between the countries of Burmah and China, from the time of His Majesty's great grand-father, in regular succession to His Majesty's reign, and which is similar to the great friendship that exists between England and Burmah, ambassadors came regularly every ten years with royal letters and presents, and the "gold and silver road" of commerce having been opened, numerous merchants took advantage of it for trading purposes, and thereby gave a vast impetus to the trade of the country, and a corresponding increase to the royal customs revenue.

A grievous war having raged, however, between the Chinese and the Panthays, the road became impracticable (literally unpleasant), the usual decennial ambassador with royal letters and presents was unable to come, both trade and the royal customs revenue have declined for the past ten years, and owing to there being little commerce or intercourse of any kind between Burmah and the dominions of the Emperor of China, the wild Kakhyen tribes on the borders rose and became unsettled, and the few traders who took advantage of the road were subject to annoyance.

The material progress of many countries and their free intercourse have been interrupted for many years, owing to the continuance of hostilities between the Chinese and the Panthays. When peace has been established bewteen these two powers, the road will be taken advantage of as before, and the ancient trade revive.

Anticipating this result, His Majesty, in accordance with established custom, was in the act of promoting the object in view to the best of his ability, when His Majesty's Royal Friend, the *English* Viceroy, in the year 1229 B. E. (corresponding to 1867 A. D.), deputed English Officers to explore the country between Bhamo and China.

His Majesty was pleased at this, and gave his hearty support to the expedition.

With reference to that part of the Viceroy's letter in which he wishes His Majesty to facilitate the opening of the routes to China, His Majesty observes that so soon as the road between Bhamo and China is open, and taken advantage of by numerous traders, the Kakhyens and other wild tribes on the borders will not dare to rise, the trade of Burmah will be enhanced to a degree hitherto unknown, and with a view to enable England to reap similar advantages to Burmah, His Majesty will cordially further, to the utmost of his power, any English expedition that may hereafter be deputed to explore the Chinese route.

It has given His Majesty sincere pleasure to receive the assurance of the Viceroy that, adopting the policy of his predecessors, he is anxious to maintain a sincere and lasting friendship. His Majesty is fully convinced that the increased wealth and prosperity which the subjects of both countries now enjoy, may fairly be attributed to the improved state of intercourse, and the amicable relations that exist, owing to the treaty alliances, between the two Governments.

The misunderstanding between the Officers of the English expedition and the Governor and other officials at Bhamo, His Majesty is inclined to believe may solely be ascribed to mutual ignorance of each other's customs and rules of etiquette, and trusts the Viceroy will endorse this view.

His Majesty, far from making any invidious distinction between Burmese and English, daily looks forward, with lively interest, to the English enjoying increased prosperity without let or hindrance, and, in accordance with the friendship that exists between the two powers, His Majesty will use his utmost endeavours to promote their interests in every possible way.

Dated Royal Palace, Mandalay, the 1st day of the increasing moon Taboung 1231 B. E. (corresponding with 2nd March 1870 A. D.).

(True translation.)

A. FYTCHE, *Major-General, C.S.I.,*
Chief Commr. of British Burmah and Agent to the Viceroy and Governor General of India.

REPORT ON THE WORKING OF THE DISPENSARIES AND ESTABLISHMENTS FOR VACCINATION IN RAJPOOTANA, FOR THE YEAR 1869.

From LIEUTENANT-COLONEL R. H. KEATINGE, C.S.I. and V.C., Governor General's Agent, Rajpootana, to the Secy. to the Government of India, Foreign Department,—No. 412G, dated Mount Aboo, the 7th April 1870.

I HAVE the honor to forward, in original, a highly interesting report by the Superintendent General of Dispensaries and Vaccination in Rajpootana, on the working of the institutions under his charge.

2. Excepting Appendices Nos. 1, 2, and 3, I have not sent forward the very voluminous papers of which a list is marginally given at the commencement of Dr. Moore's report. These returns could not profitably be printed for circulation with the report; and if any special reference is wanted on professional subjects they could probably be more easily consulted here than in Calcutta.

3. I request that 35 copies of the report may be sent to me for communication to the Durbars and the Agencies in Rajpootana.

From SURGEON W. J. MOORE, L.R.C.P., Superintendent General of the Dispensaries and Vaccination in Rajpootana, to the Governor General's Agent in Rajpootana,—No. 93, dated Aboo, the —— March 1870.

I HAVE the honor to submit the Annual Report on the working of Dispensary and Vaccination Establishments in Rajpootana for the year 1869, together with papers as per margin, showing 166,560 patients treated during the 12 months, at a total cost of Rs. 44,041-3-8, or four annas three pies per head (excluding Pertabghur and Dholepore); and 49,611 vaccinations, costing Rs. 3,550-5-0, of which 33,853 were successful, the charge on the latter being one anna two pies per case.

Bhurtpore, A1 to A15.
Jeypore, B1 to B13.
Oodeypore, C1 to C8.
Pertabghur, D1 to D3.
Jhalra Patun, E1 to E6.
Keraolee, F1 to F8.
Kotah, G1 to G6.
Marwar, H1 to H13.
Ulwur, I1 to I18.
Tonk, K1 to K6.
Doelee, L1 to L5.
Kotree, M1 to M18.
Serohie, N1 to N6.
Aboo and Anadra, O1 to O2.
Indurghur, P1 to P5.
Dholepore, Q.
Appendices, Nos. 1, 2, 3.

2. I regret this report is not quite complete. But I have not received the required returns from either Pertabghur (*vide* paragraph 43) or Dholepore (*vide* paragraph 55), and consider it useless waiting longer. For, if the very simple returns required from these Dispensaries cannot be prepared in three months, I cease to expect them in double that period. All papers from Dispensaries, under my immediate charge, were in hand by the end of January, and there appears no valid reason why others should not be so submitted.

3. The number of Dispensaries and hospitals in operation was 44. One Dispensary at Neemrana, more particularly referred to in paragraph 48, was abolished and one Dholepore added to the list. The midwifery hospital referred to in paragraph 40 has also been abolished, leaving the number of institutions working at the end of the year 43. But since the first of January, I have received a report of the re-opening of the Jessole Dispensary, regarding which,

it is stated, "the inhabitants of Jessole were much pleased at the prospect of having medical aid within their reach, as were those of the important town of Balotra, which is not a mile distant." This Dispensary formerly at Balmere was discontinued for reasons given in my report for 1868, paragraph 50. Also, during the year under review, Colonel Nixon on my suggestion induced the Maha Rana of Oodeypore to sanction Rs. 50 per mensem, for the conduct of a small Dispensary at Kherwarrah, but its commencement has not yet been reported. A proposal for a Dispensary at Erinpoorah to be maintained jointly by the Marwar and Serohie States, did not meet with support; Colonel Brooke, the Political Agent, informing me the Maharajah would not contribute towards a Dispensary situated in Serohie, and Captain Bayley, the Political Superintendent of Serohie, stating the Rao was too poor to support a Dispensary in addition to that existing at the capital. Yet both Kherwarrah and Erinpoorah, the latter place especially, are localities where Dispensaries are much required, and where, from the presence of an European medical officer, such institutions may be expected to prove of more than ordinary value. Dr. Eddowes, when at Erinpoorah was, I know, in the habit of attending to large numbers of sick poor, often at pecuniary cost to himself; and he states: "In consequence of the comparative scarcity of European medical officers in Rajpootana, many poor people apply for medical aid at the Erinpoorah Hospital. During the past year, 142 of this class have been treated, some of them suffering from severe injuries. Eight operations have been performed among this class, including two who underwent the lateral operation of lithotomy." During the scarcity of last year, when large numbers of poor were collected at Erinpoorah and Kherwarrah, both Dr. Eddowes and Dr. Mullens appear to have brought the matter to the notice of the Deputy Inspector-General of Hospitals of the Agra Circle, and I was requested, if possible, to make some provision for medical aid. But the means at my disposal did not permit me to do so, further than forwarding a sum of money advanced by the Agent, Governor General, from the Famine Fund, and making the suggestions to the Political Authorities as above-mentioned for the establishment of Raj Dispensaries, the desirability of which is still evident.'

Sketch of the medical history of the Native Army of Bengal for 1868, by Surgeon-Major Ross, Secretary to the Principal Inspector General, page 33.

No. 1137, dated the 18th September 1869, from the Deputy Inspector General, Hospitals, Agra Circle.

4. The number of patients treated during 1869 in the Rajpootana Dispensaries, viz., 166,560 is, compared with former years, as shown below, a considerable increase :—

Years.	No. of Dispensaries in operation.	No. of patients treated.
1855	9	33,500
1860	14	99,768
1863	20	113,346
1865	24	142,780
1866	37	150,034
1867	38	149,548
1868	42	160,310
1869	44	166,560

5. The increase occurs at the following Dispensaries :—

Names of Dispensaries.	No. treated, 1868.	No. treated, 1869.
Jeypore	11,552	13,111
Odeypore	5,454	6,903
Jhalra Patun	4,140	4,767
Marwar	8,659	10,841
Tonk	9,587	13,528
Aboo and Anadra	1,681	2,623
Indurghur	715	1,403
Deolee	1,046	1,395

6. The following Table shows the number of Dispensaries or Hospitals in each State; the number of in and out-door patients; the daily average number of sick; and the daily average number of new applicants :—

Names of States.	Number of Institutions.	No. of Patients treated		Daily average No. of Sick.	Daily average No. of new Applicants.	Remarks.
		In.	Out.			
Bhurtpore	14	2,248	77,890	368·	218·	
Jeypore	5	1,649	11,462	412·73	35·64	
Odeypore	2	341	6,554	133·73	19·97	
Pertabghur	1	73	970	28·02	2·80	
Jhalra Patun	1	314	4,453	49·	12·12	
Keraolee	2	558	8,326	...	24·33	
Kotah	1	106	3,556	65·	10·	
Marwar	3	416	10,425	169·79	28·80	
Ulwur	5	591	11,736	...	33·64	
Tonk	1	1,745	11,783	134·	36·	
Deolee	1	148	1,543	...	4·33	
Ketree	3	124	3,494	70·50	16·27	
Serohie	1	236	1,791	42·01	11·33	
Aboo and Anadra ...	1	110	2,513	68·73	6·82	
Indurghur	1	...	1,403	...	3·85	
Dholpore	1	...	290			

7. The annexed Statement gives the percentage of the more common diseases as presenting at the institutions of the various States :—

Names of States.	Intermittent.	Remittent.	Dysentery and Diarrhœa.	Cholera.	Rheumatism.	Ophthalmia.	Syphilis.	Spleen disease.	Skin disease.	Abscess and ulcer.	Wounds and injuries.
Bhurtpore	18·11	1·5	7·40	1·2	11·45	2·45	4·14	·29	18·11	13·16	·98
Jeypore	7·21	7·6	14·99	1·91	3·72	2·62	5·18	·10	8·62	14·98	1·59
Odeypore	21·37	·37	13·43	9·72	2·52	3·51	7·29	1·95	5·06	5·26	1·26
Pertabghur	20·30	·67	4·78	9·39	1·82	1·24	11·12	...	3·45	7·47	7·47
Jhalra Patun	16·57	5·38	10·51	2·99	3·20	3·06	6·20	2·32	12·17	6·10	1·92
Koraolee	17·39	2·43	10·16	1·79	3·16	16·98	1·81	·51	9·12	15·71	12·30
Kotah	19·77	·41	12·79	4·84	4·44	2·48	6·39	·60	3·31	11·32	2·79
Marwar	8·67	·31	8·22	20·05	4·28	3·87	6·53	·50	6·80	10·97	3·66
Ulwur	6·14	2·47	5·60	·33	3·46	5·52	4·94	·63	20·69	14·96	3·56
Tonk	14·25	1·01	15·81	2·49	5·07	3·24	2·67	·76	2·33	4·01	1·47
Deolee	31·4	·19	11·86	3·24	7·61	3·75	6·41	...	3·30	10·23	·2
Ketree	9·67	·61	13·05	2·89	4·84	3·84	5·48	·13	·10	6·50	2·34
Serohie	34·57	...	6·31	2·51	3·25	3·20	4·34	·98	4·90	6·90	3·20
Aboo and Anadra	24·10	·99	10·63	5·14	3·88	6·40	5·82	·72	1·94	10·14	2·59
Indurghur	13·86	1·41	7·06	3·42	·99	1·21	8·74	·43	6·34	7·18	3·20
Dholpore	33·79	2·41	7·58	3·79	3·79	...	6·20	...	3·79	11·72	2·41

8. Compared with former years, the above Table presents a considerable difference. There is a larger proportion of *remittent* fever than usual, also of *abscess and ulcer*, of *dysentery and diarrhœa*, and of *cholera*, all maladies to which scarcity of food induces a predisposition. Compared with last year (1868), a much greater prevalence of intermittent fever is noticeable. In the last report, it was particularly mentioned, that in those localities where little or no rain fell, malarious fever was reduced to a minimum, and a map was attached illustrating this. In 1869, the rain-fall being more copious, malarious fevers are seen to prevail throughout. The presence of cholera is also striking, as compared with the Table afforded last year, when the cholera column was returned blank. Lastly, from some unexplained reason, there appears a greater general difference in the various *percentages* than heretofore.

9. Before leaving the subject of the influence of want or famine on disease, I must remark on the entire absence of famine or relapsing fever, the "hunger pest" of Europe. On this head, I have made particular enquiries throughout the famine; and accumulated experience is against the existence of this peculiar type of fever.

Influence of famine on disease.

Thus Dr. Compignie, Beaur, wrote: "I have seen no famine fever." Dr. Harvey, Bhurtpore: "No case of relapsing fever has come under my notice." Doctor Martin, Deesa: "The type of fever has always been typhoid, never relapsing." Doctor Galloway, Odeypore: "No cases of relapsing fever have come under my observation." Doctor Eddowes, Erinpoorah: "I have not seen any famine (relapsing) fever here at all." Doctor Newman, Joudhpore: "I have heard of no disease approaching in its type to famine or relapsing fever." Doctor Miller, Nusseerabad: "I have not met with any case of famine or relapsing fever." The replies of the Native Doctors are also to the same effect. Colonel Brook also mentions, that in Marwar, where fever has been more than ordinarily prevalent, it was not confined to the ill-fed, and that it was more severe along the line of the "Loonee" River, thus evidencing its malarious character. In this locality, one-fourth of the population are reported to have died. The above information regarding famine or relapsing fever appears to me of great importance. It corroborates the assertion of the greatest living authority on fevers (Murchison) that famine or relapsing fever does not occur in India. It also agrees with experience of former famines in this country, after which this most deadly form of fever has never been known to prevail. It also tends considerably towards negativing the opinions held by so many, that the contagious fever afflicting the prisons of the North-West and Punjab, from 1860 to 1867, was simply a famine fever, due to defective diet. Lastly, it leaves a somewhat consolatory reflection that in a country like India, where so many fatal epidemics are experienced, there is at last one of the most fatal not yet visiting the land. Regarding the subject from a more purely sanitary point of view, the absence of relapsing or famine fever is evidence that some other agent than want of food is necessary to the development of the disease. Most certainly the amount of distress during the present scarcity has, in many places, been sufficient to establish famine fever, if the malady is caused by this condition alone. But no *famine pest* has so occurred. Hence the conclusion that some other agent is necessary to its production. And holding in recollection the circumstances of life of dwellers in India and Europe, it would appear that *over-crowding* is essential to the excitation of relapsing fever. In the latter country the climate induces the poor to congregate in ill-ventilated dwellings. In India the inhabitants, live more in the open air; especially the majority of those suffering from scarcity, who, adopting a nomadic life, wander off to other localities, where they live pretty much *sub-jove*.

Ratio of surgical disease.

10. The proportion of surgical disease to the total treated in the different States is here shown :—

Bhurtpore.	Jeypore.	Odeypore.	Pertabghur.	Jhalra Patun.	Keraolee.	Kotah.	Marwar.	Ulwur.	Tonk.
28·13	29·13	24·27	29·16	25·41	27·53	35·45	38·35	21·92	31·15

	Deolee.	Ketree.	Serohie.	Indurghur.	Aboo and Anadra.	Dholepore.	
	26·57	24·93	17·14	25·70	29·16	...	

Syphilis, affections of the ear, and ophthalmiæ are included as surgical.

Number of operations.

11. The number of surgical operations performed are shown in the following Tabular Statement :—

Bhurtpore.		Jeypore.		Odeypore.		Pertabghur.		Jhalra Patun.		Keraolee.		Kotah.		Marwar.	
Important.	Minor.	Important.	Minor.	Important.	Minor.	Important.	Minor.	Important.	Minor.	Important.	Minor.	Important.	Minor.	Important.	Minor.
93	427	82	242	21	315	...	...	1	250	9	657	...	370	4	238

Ulwur.		Tonk.		Deolee.		Ketree.		Serohie.		Indurghur.		Aboo and Anadra.		Dholepore.	
Important.	Minor.	Important.	Minor.	Important.	Minor.	Important.	Minor.	Important.	Minor.	Important.	Minor.	Important.	Minor.	Important.	Minor.
5	50	4	233	7	59	5	218	...	64	...	68	10	115	...	...

Number of in-door patients, and expenditure on diets.

12. Showing the number of in-door patients, the number of diets supplied, and the cost in each State :—

Names of States.	No. of in-patients.	No. of diets supplied.	Cost.			Remarks.
			Rs.	As.	P.	
Bhurtpore	2,027	31,927	2,648	8	3	The sum of Rs. 313-2-6 disbursed at the Odeypore Dispensary for relief of poor, before the establishment of a poor-house, is not included. At Deolee, 22 persons are returned as "dieted."
Jeypore	244	2,750	442	3	3	
Odeypore	341	3,632	663	6	3	
Pertabghur	73	...	.....			
Jhalra Patun	314	480	116	0	0	
Keraolee	233	1,111	119	2	6	
Kotah	106	1,514	179	4	0	
Marwar	55	964	96	8	6	
Ulwur	261	5,654	144	0	0	
Tonk	1,745	12,120	653	13	6	
Deolee	148	...	85	9	0	
Ketree	124	1,219	414	2	9	
Serohie	236	343	73	11	6	
Aboo and Anadra	110	512	128	6	6	
Indurghur	...	...	.....			
Dholepore	...	...	.....			

Percentage of caste.

13. Showing the percentage of Hindoos, Mahomedans, women, and childern, attending the different institutions, which differs little from former years :—

Names of States.	Hindoos.	Mahomedans.	Women.	Children.
Bhurtpore	70·96	29·04	13·71	46·68
Jeypore	80·23	19·77	16·11	30·71
Odeypore	84·88	15·12	23·65	16·48
Pertabghur	52·60	47·40	26·94	22·50
Jhalra Patun	57·34	42·66	26·82	25·13
Keraolee	93·17	6·83	25·47	43·45
Kotah...	73·26	26·74	20·61	17·06
Marwar	78·12	21·88	20·03	13·76
Ulwur...	65·20	34·80	15·5	27·73
Tonk	44·76	55·24	21·10	23·13
Deolee...	48·21	51·79	19·65	17·35
Ketree	69·88	30·12	28·37	7·92
Serohie	89·50	10·50	17·02	14·18
Aboo and Anadra	71·0	19·0	14·0	13·0
Indurghur	71·35	28·63	32·21	19·60
Dholepore	.....	.....	.....	... ..

Female attendance.

The average percentage of females attending the whole of the Rajpootana Dispensaries is 20·07, the proportion in the Central Provinces for 1868 being 23·40. As is well known, *caste* perjudices in a great measure prevent female attendance ; and it would be well if the women could always be received in a separate room. This is, however, impossible in the majority of the Dispensaries. Dr. Cuningham mentioned that a woman, an old patient, was the means of bringing many other women to the Dispensary, and I have addressed the various medical officers with the view of eliciting their opinion as to the advisability of a *dhai* or female nurse being attached to each institution.

Death ratio.

14. As remarked in the last Annual Report, the mortality recorded in the Dispensary books does not show the true death ratio; many cases lost sight of are necessarily recorded as "ceased to attend," &c., who may have died at their own houses. But the mortality noted for 1869, is much higher than for 1868, being respectively 1·83 against 21 *per cent.* The greater recorded mortality in 1869, I refer to the prevalence of cholera.

Cost per patient.

15. The cost per patient in the different institutions is shown below. The cost per head throughout Rajpootana has been a fraction above four annas three pies. In the North-Western Provinces for 1868, it was five annas nine pies. The cost varies considerably in the different States, and this depends on whether European medicines have been procured or not during the year, on local rates, and on the varying salaries of the Native Doctors. At Ketree, for instance, the charge is high; but this depends in a great measure on the high salary of a Native Doctor in charge of one of the branch Dispensaries, which was fixed by the Chief's orders. The medical officers superintending Dispensaries examine and check the monthly bills, and the Native Doctors in charge cannot procure any monies without such sanction :—

Bhurtpore.	Jeypore.	Odeypore.	Pertabghur.	Jhalra Patun.	Keraolee.	Kotah.	Marwar.
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
0 2 5	0 5 5	0 9 5	.....	0 6 1	0 6 9	0 7 0	0 5 2

Ulwur.	Tonk.	Deolee.	Ketree.	Serohie.	Indurghur.	Aboo and Anadra.	Dholepore.
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
0 3 10	0 2 5	0 5 4	0 11 3	0 5 5	0 5 1	0 4 ½	

16. The number vaccinated during the year was 49,611; the number of successful cases 38,853. The following Table shows the number of vaccinators employed in each State, the number vaccinated, the total expenditure, the cost per head, and the *percentage* of success :—

Names of States.	Number of vaccinators employed.	Number vaccinated.	Percentage of success.	Cost per head of each successful case.	Total expenditure.	Remarks.
				Rs A. P.	Rs. A. P.	
Bhurtpore ...	16	22,821	86·44	0 1 2	348 0 0	The cost per head for Bhurtpore is not calculated on the expenditure here shown, as the latter cannot be fairly estimated; the Dispensary Native Doctors performing the work. Dr. Harvey estimates the cost at one anna two pies (*vide* No. 1, Bhurtpore Bundle, paragraph 13.)
Jeypore ...	11	11,692	78·87	0 2 7	1,180 0 0	
Odeypore ...	3	1,354	63·48	0 5 11	316 0 0	
Pertabghur ...	0	58	60·34			
Jhalra Patun ...	1	606	62·37	0 6 1	116 0 0	
Keraolee ...	1	441	53·74	0 4 10	72 0 0	
Kotah ...	1	300	83·0	0 7 6	120 0 0	
Marwar ...	3	3,614	47·39	0 3 4	357 0 0	
Ulwur ...	2	1,880	60·92	0 2 0	144 0 0	
Tonk ...	2	2,652	84·72	0 1 9	288 0 0	
Deolee ...	1	325	56·0	0 5 3	90 10 9	
Ketree ...	6	1,988	74·37	0 2 8	330 0 0	
Serohie ...	1	1,270	84·01	0 3 3	216 0 0	
Indurghur ...	...	27	34·07			
Aboo and Anadra ...	...	106	24·35			
Dholepore.						

17. The total number vaccinated is less than for the year 1868. This depends on so many persons having left various parts of the country, on the debilitated condition of many of the remainder, and on the fact of so many in 1868 having suffered from small-pox; leaving the number available for the operation of vaccination less than during other periods. The success in some Districts is more than ordinarily small, but the figures may be accepted as correct, and doubtful cases have been excluded. The percentage of success for the whole of Rajpootana is 78·91; that for the North-Western Provinces for 1867-68 being 83·. I attribute a lower percentage of success to the comparative absence of European superintendence, also during the last year to the debilitated condition of many subjects operated upon. With the exception of an addition to the number of vaccinators in Marwar, no change has occurred in the staff now employed, a number totally inadequate to the wants of the country.

Inoculation.

18. During the past year, the political officers were addressed with the view of ascertaining if prohibiting inoculation in any of the Native States were practicable. It was mentioned that such measure had been adopted in Kumaon and various parts of Bengal; also that forbidding inoculation is altogether a different matter to insisting on vaccination. In the former case, the immediate transfer of a loathsome and fatal disease from one individual to others, all of whom may become fresh centres of infection, is prevented; in the latter, a disease, although mild and harmless, is certainly reproduced. But from the replies received it would appear that inoculation is not so much practised in the Rajpootana States as I hitherto supposed to be the case, or as in many other parts of India.

Thus Captain Walters writes : "I have every reason to believe, as far as Bhurtpore is concerned, the practice of inoculation does not exist at all, and I think it will be found the same is the case in the other States under my control. During the ensuing cold season, Dr. Harvey will have every opportunity of inquiring into the matter." And Dr. Harvey reports, so far as he can ascertain, there are no regular inoculators in the District, nor does the practice seem to be generally known to the people. Captain J. Blair, then officiating at Jeypore, also mentions inoculation is not practised in that State, and this is confirmed by Buxshee Fyze Allee Khan, the Jeypore minister, a Native gentleman who has full belief in vaccination;

and also by Dr. Burr, the Agency Surgeon, who, having made full enquiries, asserts inoculation is not at all practised. In Tonk, both the Political Superintendent and the Native Doctor, Bheekoo Singh, a very intelligent man, report a similar freedom.

I have, however, reason to believe that in the Haraotee States, in Odeypore, and in Marwar, inoculation is more in favor. With regard to the first-mentioned Districts, Captain Muir informed me of his intention to bring the matter to the notice of the Durbars, and I received a similar reply from Colonel Nixon of Odeypore. Colonel Brooke of Marwar did not consider it advisable to take any present action.

Administrative changes and duties.

19. Consequent on the formation of the Agency for the Eastern States of Rajpootana, the immediate superintendence of the Dispensaries in Ulwar and Keraolee, formerly under my Executive charge, was made over to the medical officer of that agency; who, from his proximity to the localities named, is able to afford a greater amount of supervision than could be possibly given by the General Superintendent. A Code of rules for the management of Dispensary and vaccination establishments in Rajpootana has also been published under the authority of the Agent, Governor General, copies of which have been supplied to all medical officers and Native Doctors. The pamphlet, copy of which is attached, marked Appendix No. 2, also contains the forms in use. During the recent tour of inspection, the Native Doctors, as per margin, Government servants, were examined for promotion according to the rules laid down in Government General Order No. 945 of 1868.

Serohie.	Erinpoorah Division, Public Works Department.
Indurghur.	
Tonk.	
Kotah.	Chittore Division, Public Works Department.
Jhalra Patun.	
Pertabghur.	

20. During the year under review, Native Doctors were attached to the camp of the Executive Engineer, Erinpoorah Division, *Public Works Department*, and to the *Chittore Division*, Public Works Department. These Native Doctors have forwarded their reports and bills to me, and were inspected and examined during the usual tour, as the additional work connected with these Public Works Dispensaries can be more easily carried on through this office than from elsewhere. But I am not satisfied with the qualifications of these men, and a special reference has been made on the subject to the Medical Department.

21. An abstract on the foregoing marked Appendix No. 1, is attached, giving the different items and the total of expenditure at each institution, and in each State, the number of patients treated, &c.

Cholera in Rajpootana in 1869.

22. The history of the cholera epidemic in Rajpootana during the past year presents various points of great interest and importance. The general and almost simultaneous appearance of the malady over such an extensive area, is altogether opposed to the theory of communication by human intercourse being the only means by which cholera is disseminated. In May and June, the disease showed itself in many widely distant localities. In the former month, Rutlam and Joura, in Central India, were attacked, as also Jessole and Balmere, in Mullaunee.

Vide Gazette of India, 1869, Report on Cholera by Colonel Daly.

In the North of Rajpootana, Rajghur, in Ulwur, was affected on the 28th May, while on the 2nd June, the disease commenced so far South as Morewarra in Palunpore. The places mentioned, as may be seen by the map attached, being on the extreme frontiers of the extensive Province of Rajpootana. And as if to render the theory of dissemination by human intercourse still less worthy of credence, we have cholera reported at Teheran, in Persia, on the 1st July! It might certainly be possible, although not probable, for cholera to be conveyed by human intercourse in a few days from one side of Rajpootana to the other. But we can scarcely imagine it to have been carried in a similar manner and time to the centre of Persia! We must therefore fall back either on the principle that cholera, under favourable circumstances of climate, meteorology, and defective sanitation, may originate *de novo*, or otherwise adopt Dr. Bryden's views that each epidemic of cholera originating in Bengal arrives at a certain locality Westward at a certain date, travelling "air-conveyed," through a series of years even round the world. If Dr. Bryden's theory is correct, the cholera of Rajpootana of 1869 must have been a "revitalization" of a former epidemic. And here I am bound to mention a fact apparently corroborative of the statistical officer's argument. At page 151 of his report, chapter 7, headed "Characteristics of the year 1868," the following paragraph appears: "The occurrence of cholera in Ajmere (in 1868) might be considered by some only as caused by a Northern extension of the cholera of Malwa, of November and December, but I attribute to it a significance beyond this. I think it not impossible that an offshoot of Southern or South-Eastern cholera was directed into this route in December 1868, which is now becoming manifest." A reference to the map shows cholera in the Burr Pass in November 1868. And this must be regarded either as a remarkable coincidence, or otherwise as supporting Dr. Bryden's views. Personally, I confess to a decided impression adverse to the Constantinople Cholera Congress *dictum* supported by Dr. Bryden, that Bengal is the home of cholera, the only place in which it originates, the breeding ground of the malady for the whole

world! On the contrary, I think there is abundant evidence that, meteorological and other conditions being favourable, cholera may originate *de novo* in most parts of the world, although circumstances may favor its more frequent origin in Bengal. No one will question the *de novo* origin of other diseases,—from canine madness to syphilis; from malarious fever to small-pox; from ephemeral to typhus fever. And attributing the power of spreading in all climates, but of originating only in one, to cholera alone, seems inconsistent with our knowledge of etiology and analogy of disease. It appears to me the simultaneous rise of the malady throughout Rajpootana in 1869 is at least as corroborative of a *de novo* origin as of the "revitalization" of a former dormant epidemic. If the statistical officer's views are by further research and experience proved correct, we shall certainly have the advantage of knowing to almost a day when to expect cholera at any particular locality. But, on the other hand, such knowledge will probably involve some danger of the neglect of sanitary precautions. Dr. Bryden, while asserting that the progress of cholera is fixed by certain laws over which we have no control (page 233), admits that it may become *localized* in unsanitary localities (page 228). If it be once understood that cholera is unavoidable, that it must attack a certain locality at a certain date, a disposition to neglect sanitation during the intervals will certainly follow. Whereas by believing cholera may originate *de novo*, not only in Bengal but in other countries, some degree of continued attention to sanitation will as certainly be secured. And the following history of cholera in Rajpootana will, I think, demonstrate the desirability and utility of sanitary precautions; and hence the contagious nature of the malady.

Cholera communicable.

23. While thus from the progress of cholera in Rajpootana during 1869, drawing a conclusion opposed to the theory of the malady being disseminated only through human intercourse, and while holding that the facts evidence a *de novo* origin, I submit there is reason from the same history to believe that cholera is conveyed along the great lines of road. The second map attached, represents the date of the disease arriving at the places named along the chief road in Western India, from Ajmere to Mount Aboo, a distance of 210 miles. Of course it may be advanced (as Bryden explains the presumed conveyance of cholera by the Hurdwar pilgrims) that the outbreak in any locality appears at the date normal for that locality, and that no circumstances which are merely contingent can determine the occurrence of the outbreak of an epidemic. But when cholera is found travelling down a great line of road, and over a mountain range as the cholera of 1869 in Rajpootana is here shown to have done, and with recollections of similar experience, I cannot refuse to believe in the contagious and portable properties of the maism. I well remember during the English cholera of 1849, a man returning, from the neighbourhood of Dudlay where cholera existed, to his home five miles distant in a Northerly direction. The next day he died. His mother living several miles Eastward came to nurse him, and returning home suffered a similar fate. From these two dwellings the malady spread. And I might quote other examples of the kind, but shall confine myself to what occurred last year in Rajpootana. It will be seen by the map that cholera appeared at the village of Anadra on June 6th; at Omedgunge on June 11th; in the station of Aboo on June 17th, and in the village of Shaulgaum on July 11th. And in order to appreciate the importance of these dates, as unmistakably demonstrating the importation of the malady by human intercourse, the following brief description of the locality must be kept fully in mind. Mount Aboo is an isolated hill composed chiefly of granite, a detachment from the great Aravelli Range. The village of Anadra is situated a mile and-a-half from the foot of the hill, and the village of Omedgunge, half a mile from the foot. The ascent from the latter locality is very abrupt, and formed chiefly by a zig-zag road, built against the face of the mountain. This is altogether impassable for carts, and unless in good repair is scarcely surmountable by horses. The height of Aboo may be generally stated as averaging 3,000 feet above the level of the plains below. There are no other ordinary means of communication with the summit excepting the abrupt ascent above mentioned. On reaching the top, a mile of undulating ravinous ground takes the visitor to the station, and another mile and-a-half to the village of Shaulgaum. From Shaulgaum, another mile and-a-half East, reaches the opposite or Eastern descent. The breadth of the hill summit may, therefore, be four miles, while the length is some eighteen or twenty. The sketch attached shows this, perhaps, more distinctly than any verbal description.

Cholera at Aboo.

24. The first case of cholera occurred at Anadra on the 6th June. The total number of cases here was 99, the deaths, 23. The first case at Omedgunge occurred on the 11th June; and the first case on Aboo, June 17th, and at the village of Shaulgaum on the 14th July. I investigated these epidemic on the spot, and found the first case at Shaulgaum was in the person of a Bheel woman belonging to the village, and who had been down the hill to Anadra, the previous day, conveying a load of grass for sale. Within six days of her return, as nearly as I could ascertain, upwards of 40 cases of cholera occurred: 23 men, women, and children, dying. There was, however, difficulty in ascertaining the exact number attacked. The village is divided into two parts, one inhabited by Rajpoots, the other by Bheels. The former appeared to care very little how the others fared, and on the outbreak of the sickness, a large number left the village, probably going off to the lowlands, or inhabiting caves in various parts of the hills. Of the Rajpoots, five persons only were attacked, and I attribute this comparative

immunity, to their being better off, and not suffering as the Bheels were from scarcity. On the first occasion I visited this village, I saw seven cases of cholera, and several convalescents. The people were thoroughly frightened at the malady. They positively refused to enter some of the huts in which persons were laying sick, and, to set an example, I went into one. But I may as well have remained outside. The darkness of the interior, increased by smoke, rendered it impossible to see either of the occupants,—a women and girl laying sick,—and the bye-standers were not at all shamed to exertion. On a second visit to the village scarcely a Bheel remained in the neighbourhood; as is the custom with these people on epidemic disease occurring, they vacated the locality.

25. Again the first case of cholera at the station of Aboo occurred on June 17th, and was in the person of a coolie woman who came up the hill from Anadra two days previously in search of work. The second case was the wife of a sepoy of the Erinpoorah Irregular Force, on Detachment duty at Aboo, and who ascended the hill the day before. The next three cases were the wife and children of a Bheel, and both man and woman had been to Anadra within three days of the attack in this family. Of the total number 19 attack at Aboo, eight appear thus to have contracted the disease, five others belonigng to the houses or families of the former eight; while in the remaining six instances, no evidence was forthcoming of their having been exposed to contagion. One of the last mentioned was a cook in the employment of Colonel Arthur; another a puggee attached to a bungalow; a third, the wife of Colonel Keatinge's Durzie, resident in the bazaar, three other Bheels, either belonging to Aboo, or some time resident in the locality. I attribute the fact of the disease not spreading more at Aboo, to the isolation of the cases carried out. Until the last three or four attacks, when the heavy rain prevented the procedure, each case was immediately taken to a hut, erected at some distance, over which chowkeedars were placed to prevent any but the necessary attendants passing to and fro.

26. I have been thus particular and perhaps lengthy in noting the facts of the cholera at Aboo, because, with the exception of a few mild cases in 1866, this is the first time epidemic cholera has ever occurred in the locality, and of course exaggerated reports were prevalent regarding the epidemic. Also because the importation of the disease from Anadra to Omedgunge, and from those places up the hill, is so clearly traced. The ascent to Aboo faces the West, and the village of Shaulgaum is to the East. If, therefore, cholera were always "air conveyed" from Dr. Bryden's epidemic localities, the latter village should have been first attacked, and the cholera should have proceeded down the hill to Omedgunge and Anadra; whereas the exact reverse was the case. It is also worthy of remark that, owing to the grass famine during 1869, the hill people were in the habit of conveying loads of grass for sale to the plains; whereas in former years there was no traffic of this kind; the coolies coming up the hill and mostly returning the same day. And this may to some extent account for the former absence of cholera on the hill. I believe had it been practicable to stop all communication with below, no cholera would have occurred on Aboo. But this was not possible; and all that could be done was stationing persons on the road to prevent any sick being brought up.

27. I now quote from the reports of various medical officers superintending Rajpootana Dispensaries their remarks regarding the communicability of the malady. Dr. Galloway, then in charge of the Meywar Agency, states that in almost every Meywar village the "outbreak of cholera followed the arrival of Marwarrees, who were passing through Meywar territory" in, as Dr. Galloway mentions, "all directions," but, as I have reason to believe, chiefly on their road homewards, towards Marwar, in a Westerly direction. Again, Dr. Burr of Jeypore mentions cholera first appeared at Malpoorah, a large town about 50 miles South-west of Jeypore, on the 16th May, and is stated to have originated among travellers from Meywar. Dr. Newman of the Marwar Agency writes: "The cholera appears to have been imported into Marwar, and that in different directions. Thus it can be traced from Ajmere *viâ* Burr to Pallee and on to Joudhpore, again from Ajmere to Nagore. It was brought by returning emigrants from Meywar and Malwa *viâ* Dessooree." The Native Doctor of the Joudhpore Dispensary also reported the first case of cholera in that city occurred in the person of a traveller from Pallee. But, on the other hand, Dr. Harvey of Bhurtpore states the source of introduction into that locality was not apparent. Sub-Assistant Surgeon Mr. Nundo Lall Dhole in charge of the Ketree Dispensaries, also mentions there was no reason to believe the malady was conveyed into the city from any infected place.

Opinions regarding spread of cholera.

28. The Sub-Assistant Surgeon just named refers, however, to a "localization" of cholera at Ketree, which deserves mention here. The first family attacked was that of a dealer in hides. From the absence of forage, and from the effects of an epizootic called by the Natives "rogue ma hogue," the destruction of horned cattle had been immense, so that hides were unusually abundant, and had been stored in large quantities in a portion of the house, four of the occupants of which out of five died.

Localization of cholera.

29. Although great exertions appear to have been made in the various States in the way of providing work and food for the people suffering under the famine of 1868-69, there can be no doubt that the condition of the masses was such as to render them prone not only to malarious fevers, but to cholera also. In my own experience, the people themselves, in many instances, attributed their choleraic symptoms to want; and that hunger had much influence in the production of some of the attacks, is evident from the fact of amendment dating from the first mouthful of meat-broth and arrack which, in certain cases, formed the entire medical treatment. Indeed, the majority of the reports mention famine as one of the predisposing causes of the cholera epidemic. Dr. Burr particularizes unwholesome food, exposure, fatigue and want: Dr. Galloway, distress among the people owing to the high prices of food. Dr. Newman of Marwar writes: "Thousands have been starved to death, and the mortality from disease is evidently accounted for by the debilitated condition of the people, who have barely carried their lives through the famine, and easily succumb." Yet, with all this suffering from want of food, as before mentioned, no true case of famine or relapsing fever was noticed. Judging from the prevalence of cholera and pseudo-cholera in Rajpootana during the season under review, it would indeed appear that among the Natives of India want is capable of producing a class of symptoms very similar to true cholera; or, in other words, the vital depression attendant on insufficient and improper food excites a similar train of symptoms to those following the vital depression consequent on the cholera poison.

Condition of the people.

30. I use the term *pseudo-cholera* above, as while all accounts agree in representing the disease to have been of a mild type, the mortality to treated at various Dispensaries is so low as to forbid the acceptation of the whole number admitted under the head being true Asiatic cholera. And although I recollect that many may have died who are registered "ceased to attend," or otherwise in the Dispensary books, still the statistics, as far as they go, testify to the mildness of the disease, and tend perhaps to evidence of its having been in some degree the offspring of want.

Pseudo-cholera.

31. The recorded mortality to treated from cholera at the various institutions varies from 75 per cent. in the Jeypore Jail (the *maximum*) to four per cent. in the Jeypore City Dispensary (the *minimum*); the average being 30 per cent. to total treated. The largest number of cholera patients treated in any institution was at Pallee, from which 1,914 cases were returned.

Mortality to treated.

32. The number treated in the Dispensaries does not, however, unfortunately convey even an approximate idea of the number suffering and dying from cholera in Rajpootna during last year. Neither have I any means of obtaining correct information on this head. But in Marwar, for instance, it is stated one person died in every 15 of the population, making the total number 75,000. In Bhurtpore city there were 540 attacks and 266 deaths. In Jeypore city there were 930 attacks and 101 deaths. In the Districts 1,191 attacks. In Tonk, up till the first quarter, there were 452 deaths. In Odeypore, again, the Kotwall reported that little short of 1,000 deaths took place in the city alone.

Number treated is no index to number attacked or dying.

33. Neither does the number of cholera patients treated in the Dispensaries afford any index to the total deriving benefit from these institutions. From all the Dispensaries under my immediate control, pills according to Inspector General Dr. Murray's form, and other remedies were sent out in large quantities, and the same course appears to have been adopted by the other agency surgeons. In some cases these remedies were entrusted to vaccinators or other Dispensary servants; otherwise given to thannahdars and different Civil officials. And here I take this opportunity of again bearing testimony to the great efficacy of the cholera pills of opium, assafœtida, and pepper as first recommended by Dr. Murray.

Number treated no index to those deriving benefit from the Dispensaries.

34. With regard to the medical treatment adopted in the various Dispensaries I have little to remark. As before mentioned, some cases under my own care received nothing but stimulants and nourishment. The other medical officers and the Native Doctors appear to have used those remedies which in their experience had seemed most successful, and the list is in consequence somewhat variable. Both Dr. Harvey of Bhurtpore and myself tried the subcutaneous injection of liquor ammonia as recently proposed, but the results were not encouraging.

Medical treatment.

35. In concluding this account of cholera of Rajpootana in 1869, I desire to be understood as submitting that it tends to prove: *first*, that human intercourse alone, or human intercourse with infected places, does not suffice to explain the irregular extension and dissemination of the disease; and *secondly*, that the disease may be extended by human intercourse.

Conclusions regarding cholera.

36. I now remark briefly on what appears to call for observation in connection with the various institutions.

Bhurtpore Dispensaries and vaccination.

37. The number of Dispensaries in the Bhurtpore State, viz., 14, is the same as last year. The total number treated is less than for 1868. The expenditure, Rs. 12,208-13-4, is an increase of upwards of Rs. 2,500, accounted for by the high price of food, the greater number of patients dieted, and Rs. 631 spent on instruments and medicines. Vaccination shows an increase of 3,895, over 1868, due to the presence of small-pox in 1867-68, causing a greater number to submit to the prophylaxis. The percentage of success, viz., 86·44, is good, and each successful case is estimated as costing one anna two pies. The Bhurtpore medical institutions and the vaccination appear to have been conducted with Dr. Harvey's usual care and attention, and several very important surgical operations, as removal of the upper jaw, lithotrity, &c., were performed. I make particular mention of Dr. Harvey's exertions towards improving the qualifications of the Native Doctors serving under him, "in and near Bhurtpore, by anatomical and surgical demonstrations, by making them perform most of the minor important operations, and letting them practice capital operations on the dead body" (*vide* paragraph 5 of Dr. Harvey's Report, Bhurtpore Bundle No. 1).

Bhurtpore Jail.

38. With regard to the Bhurtpore Jail, Dr. Harvey (paragraph 11) mentions an increased death ratio from 32·35 for 1868, to 64·48 per 1,000 for 1869. This is attributed to the enfeebled condition of many prisoners on admission, owing to scarcity and to overcrowding. Allowing 36 feet superficial space per man, 243 prisoners can be accommodated in the Bhurtpore Jail, and for 1868 the daily average was 216. For 1869 it was 310, rising at times to upwards of 400.

Jeypore Dispensaries and vaccination.

39. The Jeypore institutions all exhibit an increase of attendance over 1868. But the number of vaccinations is considerably less. This is accounted for by the dismissal of three vaccinators for carelessness and inefficiency. The percentage of success, namely, 78·08 is fair. The total expenditure in the Jeypore State on medical institutions and vaccination is less than for the previous year. During the year, Dr. Burr performed several important surgical operations; amongst others, removal of the lower jaw for a "cystic" tumour.

Jeypore Jail.

40. The Jeypore Jail also appears to have been very sickly from June to November; the number treated being almost doubled during 1869. A large portion of the sickness and mortality was due to cholera, but the Jail was also overcrowded, the inmates having had only 21·6 superficial feet each. Dr. Burr mentions that he has made over the medical charge of the Jail to Dr. Valentine.

Jeypore midwifery hospital.

41. In last report, I had to lament the abolition of the Jeypore medical school, instituted and conducted for some years by Dr. Burr. And I now have to notice the abolition of the midwifery hospital also established and carried on by Dr. Burr. This measure, it is stated, was adopted by the Jeypore Council as a necessity of economy. But I cannot but again lament the action taken. The Jeypore midwifery institution stood almost alone throughout India. It is stated to have been well appreciated, and to have acted as a check against infanticide. Moreover, there is no doubt that, in difficult cases of midwifery, the institution was the means of saving life. Also the instruction given to a class of midwives by Dr. Burr must have proved instrumental in introducing a more scientific practice of this art,—midwifery being a department of medicine in which Native practitioners are altogether ignorant. During the last year of its existence, 53 women were delivered in the Jeypore institution, and its records show a number of midwifery operations, without which the greater proportion of both women and children must have died. At the present time there are various proposals for midwifery institutions in British Provinces, notably in the Punjab and Calcutta. The Lieutenant-Governor of the first-named Province believes few things are more urgently required in India than this. It therefore seems a period peculiarly ill adopted for the abolition of the midwifery hospital in Jeypore, a city formerly conspicuous by the existence of such an institution; and I even now venture to express a hope that the hospital in some shape or other may still be re-established in Jeypore.

Punjab Dispensary Report 1868, paragraph 12.

42. Although reductions of expenditure in the medical department in the Jeypore State have thus been, as I think, ill-advisedly effected, there is still a great desire on the part of the authorities to benefit the sick and suffering poor. A small-pox hospital was established during the epidemic of that disease, a Dhurmsala hospital during the famine, and a cholera hospital when this malady prevailed. Also Native Doctors and vaccinators were sent into the Districts when their services were required. Dr. Burr also informs me that it is proposed to establish six new District Dispensaries,—institutions much wanted in Jeypore. During the cholera epidemic Dr. Burr gave to the Durbar some carefully-devised rules and suggestions for the prevention of this disease, which appear to have been adopted as far as practicable.

Odeypore Dispensaries and vaccination.

43. The Odeypore Dispensaries show an increase of attendance, particularly of in-door patients. There is also a small increase of the total number vaccinated. Expenditure has also increased, due chiefly to a larger amount spent in dieting. During the year these Dispensaries were conducted by Dr. Galloway, until the return from frulough of Dr. Cuningham in November last. They were inspected on the 24th of January, and found in good order and well supplied. During the absence of Dr. Cuningham, there has been a diminution of the number of surgical operations performed at Odeypore; but I anticipate, from Dr. Cuningham's well known skill in this direction, to record a considerable increase next year. The report on cholera, supplied by Dr. Galloway, has been mentioned in paragraph 26. District Dispensaries are much required in Meywar.

Pertabghur Dispensary.

44. This Dispensary was inspected on the 8th and 9th January. The building is not suited for the purpose, but I was shown by the Chief's orders the plan of another building, of which the foundations were being commenced outside the town walls. I was also requested to make any necessary alterations in the plan. The Dispensary was not well supplied with necessaries, but Dr. Cuningham informed me he had brought out from England some thousand rupees worth of various articles, for which the Chief had supplied the money. The Native Doctor, *Dole Chund*, a Government servant, does not forward his returns regularly, and made the excuse of there being no Post Office at Pertabghur. He is evidently a man not devoid of a certain ability, and gave me the impression of attempting to tacitly ignore our authority while resting on his connection with the Political Department, to secure a good position in the Pertabghur Durbar. These views were expressed to Colonel Nixon, also the desirability of the returns being regularly forwarded, and of Dr. Cuningham being entrusted with more than nominal authority over the Pertabghur Native Doctor. But up to the present period Dr. Cuningham has not been able to procure the returns, although when at Pertabghur I myself gave the Native Doctor the forms and fully explained what was required.

Jhalra Patun Dispensary.

45. Jhalra Patun Dispensary was inspected on the 23rd and 24th December. The number of patients treated is slightly less than for the former year. But the vaccination is better, both numerically and successfully. The total expenditure in this state on both heads was Rupees 2,120-1-3. The Dispensary is well supplied, and the Native Doctor, Mahomed Naeem Khan, still maintains the confidence of the Rajah and people. I was informed the Chief intended establishing a Branch Dispensary at the "Chounee" where he generally resides, and which, some four miles from the city, is now becoming a large place.

Keraolee Dispensary.

46. The returns from this institution show a considerable diminution in the number of out-patients, but almost three times the number of in patients as compared with last year. But in addition to the total treated at the Dispensary, namely, 7,666 as many as 1,218 were also treated by the Dispensary establishment in the temporary "Ghurreeb Khana Hospital." I was not able to see this Dispensary during the season 1869-70, but it was inspected in the early part of 1869. When Captain Walter visited Keraolee, after the death of the Maharajah, he wrote me a very favorable account of the Dispensary and of the conduct of the Native Doctor. Also Dr. Harvey, to whom, as mentioned in paragraph 19, the executive charge of the Keraolee institution has been entrusted, states in his report: "The Dispensary is clean, well kept, largely attended, and has an adequate supply of medicines and instruments in good order." Also that "the Native Doctor is a superior man, and pays every attention to his duties." The consumption of European medicines is, however, noted as large; and the Native Doctor states, what I know from experience to be often correct, that the people being able to obtain country medicines from the hukeems would not attend in such numbers unless other remedies were supplied. The expenditure on this head will, however, be kept down to the lowest figure compatible with the efficiency of the institution. Vaccination, as mentioned in former reports, languishes at Keraolee. The sickness in the Jail hospital was much greater during 1869 than in 1868.

Kotah.

47. This Dispensary was inspected on the 13th, 15th, 16th and 17th December. The number of patients is very slightly less than last year. There is an average of twelve in-patients. The Dispensary is in good order, and the Native Doctor is capable and pains-taking. The vaccine returns are also less than last year, but there is only one vaccinator employed, and there is great opposition to vaccination in Kotah.

Marwar.

48. The Marwar institutions show a large increase of attendance, particularly at Pallee, and this from the sickly condition of the country during the past year, as noticed in paragraph 28. In the early part of the year Dr. Newman took charge of the Marwar Dispensaries, and has recently re-established the Jessole Branch. Sanction has been accorded for the employment of a larger number of vaccinators in this extensive State.

49. The attendance at the Ulwar Dispensaries, namely, 12,327, is slightly less than for 1868, due altogether to the abolition of the Neemrana institution, the reports for which extend only over four months. On the Neemrana Thakoor obtaining full possession of his estate, one of his first acts was abolishing the Dispensary in operation there, and turning the Native Doctor out of the town. I wrote to Captain Walters on the subject, but excepting an intimation of intended enquiry, I have not received any reply. The Ulwar Dispensaries are reported clean and well kept, well found in medicines and instruments, and the Native Doctors diligent and well-conducted. Vaccination is very backward, although the Maharajah does his best to encourage it. The Jail Dispensary is also in good order.

Ulwar.

50. The returns from this Dispensary show a very large increase of patients, both in-door and out. The expenditure is also increased, due altogether to a great number of diets. In fact, in this Dispensary during the famine, many were received and fed, who should really have been the occupants of a poor-house. But Captain J. Blair had confidence in the Native Doctor, and preferred this mode of relieving the destitute to the establishment of a separate temporary poor-house; and, of course, I did not object to such utilization of the means at hand. The Native Doctor, Beekoo Singh, is a trustworthy man, and well qualified for Dispensary work. He was examined according to Government General Order No. 945, 1868, on the 7th December. Vaccination in Tonk has been fairly successful, but the numbers are less than for previous years. One of the Tonk vaccinators has, under arrangement with Major Beynon, been deputed to vaccinate one month in the Lawa estate.

Tonk.

51. The returns from this Dispensary have been made out from the monthly papers half-yearly, instead of annual returns having been forwarded by mistake. There is a large increase of attendance. During the year the Dispensary has passed from the charge of Dr. Deabeck first into Dr. Crawford's care, and afterwards to Dr. Eddowes, who assumed charge in November last. The new building is now completed. Hitherto this Dispensary has been conducted gratuitously, but some allowance should be granted for the charge. As the institution is supported by the States of Odeypore, Jeypore, and Heraotee Durbars, the additional call would be but slight.

Deolee.

52. The three Dispensaries in this State, under charge of Mr. Sub-Assistant Surgeon Nundo Lall Dhole, appear to have been conducted very satisfactorily. The attendance at Ketree and the Chidawa Branch is somewhat less than. for 1868. The vaccination is also considerably less. This decrease is thus accounted for by Mr. Nundo Lall Dhole: "What with struggle for food and migration, the poorer classes did not think much of coming to the Dispensary." And it is worthy of remark that Mr. Nundo Lall Dhole gives the years from 1802-3 to 1868-69 in which this part of the country has been afflicted with famine,—no less than seven in number. *(Vide* Ketree. Bundle No. 1*)*.

Ketree.

53. The *Aboo and Anadra* Dispensary has progressed satisfactorily, showing a large increase of attendance at both places. During the cholera and fever period, it was particularly useful. The total number attended was 110 in and 2,513 out-patients, of whom more than half were applicants at the Aboo Branch. Ten important operations were performed. Subscriptions for the year amounted to Rs. 756-8-0. A printed report, prepared for the information of subscribers, is attached, marked Appendix No. 3.

Aboo and Anadra.

54. This Dispensary has also progressed satisfactorily. There is a slight diminution in the number of out-patients, but a larger proportion of in-patients. This Dispensary was inspected on the 8th of November and the 16th of February. The Native Doctor passed the examination under the new rules, and on my recommendation His Highness the Rao increased his pay in accordance with the said regulations. The vaccination in Serohie for the year is in excess of 1868, and the percentage of success good. This arises in some measure from the Serohie Vaccinator working a considerable portion of his time in the hilly Districts. Last season he was employed about Aboo during the hot weather, and is now again called for that purpose.

Serohie.

55. This Dispensary was inspected on the 7th and 8th of December. The number of of patients attending is almost double that for the previous year. The institution is, however, on a small scale, and receives no in-patients. The Native Doctor is also dissatisfied with his position, and desirous of relief. There is no vaccination carried on at Indurghur. Indurghur is peculiarly situated among low hills; and disease of various descriptions was very prevalent there during the last year. Of all the localities I visited during the tour 1868-69, Indurghur appeared to be the most sickly; and the condition of the people generally more "below *par*" than at any other place. The Chief mentioned a wish to attempt the growth of cinchona plants on the neighbouring hills, but the heighth is not sufficient for a yield of quinine. An infusion of the leaves, however, containing other alkaloids, is found efficacious, and the introduction of the

Indurghur.

shrub could not fail to be advantageous to the people. There is a considerable preservation of wood about Indurghur, so that it appears likely cinchona plants would also be protected. I have written to the Neilgherries soliciting the favour of a few seeds.

56. As remarked in paragraph 2, the annual returns have not been forwarded. The number of patients attended is taken from monthly returns, but no account of expenditure, &c., has been rendered. The Dispensary is a new building, but situated too far from the town. The Native Doctor is stated to be imperfectly qualified, and the Raj officials do not work in harmony with him; but His Highness the Maharana has intimated a wish to remove the Dispensary and to open new ones at other places.

Dholepore.

57. In conclusion, I beg to suggest the publication, as last year, of this report, or portion thereof, as I feel assured the more publicity given to the progress of hospitals, Dispensaries and vaccination in the Native States, the more likely is that progress to be promoted. The condition of other States in this respect is a frequent question preferred by the Native gentlemen with whom I come into contact.

Suggesting publicity of the progress of Medical institutions in the Rajpootana States.

APPENDIX No. 1.

ABSTRACT of the working of the Rajpootana Dispensaries and Vaccination Establishment for 1869.

Number	Name of Dispensaries.	No. of patients treated. In each Dispensary. In.	No. of patients treated. In each Dispensary. Out.	Total treated in each State.	Surgical operations. Important.	Surgical operations. Minor.	Cost of each institution. Rs. As. P.	Number vaccinated. Successful.	Number vaccinated. Doubtful or unsuccessful.	Number vaccinated. Total.	Number of vaccinators employed.	Expenditure on vaccinators. Rs. As. P.	Total expenditure in each State. Rs. As. P.	Names of States.	Remarks.
1	Bhurtpore Dispensary	—	13,692		93	427	1,333 2 9								
2	" Hospital	2,027					4,081 6 9								
3	" Jail Hospital	221					805 0 0								
4	" Palace Dispensary	—	—		—	—	183 10 0								
5	" Agency "	—	—		—	—	269 6 0								
6	Deeg " Dispensary	—	12,251		—	—	670 3 0								
7	Kama "	—	11,222		—	—	616 10 0								
8	Paharee "	—	4,027		—	—	233 4 0								
9	Gopalgurh "	—	6,142		—	—	299 0 3								
10	Akygurh "	—	2,572		—	—	326 4 3								
11	Weir "	—	11,441		—	—	592 7 3								
12	Biana "	—	6,565		—	—	498 12 6								
13	Roopbass "	—	9,334		—	—	553 1 6								
14	Ochain "	—	1,624		93	427	187 6 0	19,727	3,094	22,821	16	348 0 0	12,208 13 4	Bhurtpore.	A sum of Rs. 631-3-1 cost of Europe medicine is charged to Head Dispensary, Bhurtpore. The cost of vaccination in Bhurtpore cannot be fairly stated, as the Native Doctors are utilized in this work under the system known as "Dispensary Vaccination."
15	Joypore City " Hospital	—	6,468		—	—	3,017 6 0								
16	" Jail "	244													
17	" Branch Dispensary	1,343													
18	" Midwifery Hospital	—	62		—	—	910 1 2	9,131	2,561	11,692	11	1,150 9 4	9,321 9 5	Joypore.	
19	Odeypore Dispensary		4,850		82	342	4,213 8 5	858	496	1,354	3	315 0 0	4,379 9 11	Odeypore	—
20	" Branch Dispensary	62	144	13,111	21	—	4,063 9 11	538	23	561					
21	Pertabgurh Dispensary	341	2,884	6,903	—	315		35	23	58		—	—	Pertabgurh.	
22	Jaira Patun "	73	3,678	1,043	—	—	1,940 1 3	377	229	606	1	180 0 0	2,120 1 8	Jhalra Patun.	Includes Rs. 203 as "compensation," and Rs. 217, Europe medicine.
23	Kerauloe "	314	970	4,453	1	250									
24	" Jail Hospital	233	4,453	7,108											
25	" "Qureeb Khana" Dispensary	325	7,108				1,413 0 3	257	204	441	1	72 0 0	1,485 0 3	Kerauloe	—
26	Kotah Dispensary	—	1,218	8,884	9	675	1,614 11 11	249	51	300	1	120 0 0	1,734 11 11	Kotah.	
27	Joudpore Dispensary	106	3,566	3,662	—	570	2,572 7 6								
28	" Jail "	9	4,945	—	—	—									
29	Palee Dispensary	361	5,490	10,841	4	238	919 9 3	1,713	1,901	3,614	3	351 0 0	3,843 0 9	Marwar.	Europe medicine Rs. 132-5-3.
30	Ulwur "	46	6,374		—	—	1,755 0 6								
31	" Jail "	261			—	—	925 11 8								
32	Bhurtpore "	330	—		—	—	395 7 7								
33	Bulgurh "	—	2,424		—	—	416 7 7								
34	Neemrana "	—	2,417	12,327	5	50	144 14 0	1,146	734	1,880	2	141 0 0	3,132 8 9	Ulwur.	
35	Tonk "	1,745	591	13,328	4	233	2,336 4 6	2,451	678	3,129	2	261 0 0	2,924 4 6	Tonk.	
36	Deoleo "	143	11,783	1,543	7	69	629 13 0	182	143	325	1	90 10 0	624 7 9	Deoleo.	
37	Kotree "	100	1,995	—	1	—	2,459 13 0								
38	Chidawa "	—	1,668		—	218	183 13 3								
39	Kote Poothee, "	24	741	8,470	5	8	1,213 8 0	1,444	554	1,998	6	320 0 0	4,223 12 3	Kotree.	
40	Aboo and Anadra Dispensary	110	2,513	2,627	10	115	422 5 2	26	40	106		422 5 2		Aboo and Anadra.	
41	Serolie "	250	1,791	2,027	—	64	709 13 10	1,667	203	1,870	1	216 0 0	916 13 10	Serolie.	
42	Indurgurh "	—	1,403	1,403	—	63	504 5 7	10	17	27			504 5 7	Indurgurh.	
43	Dholepore "	—	290	—	—	—	—	—	—	—	—	—	—	Dholepore.	
	TOTAL	—	—	1,66,660	—	—	44,040 14 8	28,853	10,758	40,611	—	3,550 5 0	47,591 3 8		

W. G. MOORE, *Surgeon,*
Supdt. Genl., Dispensaries and Vaccination, Rajpootana.

APPENDIX No. II.

RULES FOR THE MANAGEMENT OF DISPENSARIES AND VACCINATION ESTABLISHMENTS IN RAJPOOTANA.

Issued under the authority of the Agent to the Governor General for Rajpootana.

I.—The Superintendent General of Dispensaries and Vaccination in Rajpootana shall perform his duties in subordination to the Agent to the Governor General for the States of Rajpootana.

II.—The Agent to the Governor General is of opinion that it will ordinarily be convenient that all questions concerning Dispensaries and Vaccination, such as establishment of new institutions, modification of existing establishments, procuring or discharging Native Doctors belonging to the Government service, revision of salaries, and other matters which involve reference to Government, or to the Agent, Governor General, should be forwarded through the Superintendent General for submission to, and disposal by, the Agent, Governor General.

III.—The general inspection and supervision of the Dispensaries and Vaccination is vested in the Superintendent General, and all Dispensary Officers are required to attend to instructions issued by him in all administrative matters.

IV.—The Superintendent General shall inspect the Despensaries and Vaccination as often as possible, or any Dispensary, as often as the Agent to the Governor General may direct. He shall inspect and countersign the several journals, registers, and Books of the Dispensaries, and, in Dispensaries under his immediate control, direct the professional practice of the Native Doctors. He shall also receive the various reports hereafter specified, and submit an annual report for the information of the Agent, Governor General, and of Government; also, when occasion requires he shall submit a special report on any particular Dispensary, or on subjects connected with such institutions, or with Vaccination.

V.—The Superintendent General will give notice of the date on which his inspection visits are to be made, both to Political Agents and to Medical Officers in charge; the latter should always accompany the Superintendent General.

VI.—The Agency Surgeon, or local Medical Officer, is styled Superintendent of Dispensaries and Vaccination for the particular District, and shall forward to the Superintendent General the papers noted in last sentence, para. 9, para. 24, para. 26, monthly A. B. annual A. B. C. D. E. F.—para. 29 a weekly summary; also, an intimation of receiving or relinquishing charge of any Dispensary; also, a brief annual report of the general working of the Dispensaries and Vaccination under his charge, specially mentioning the behaviour and qualifications of the Native Doctors; also, a duplicate of the Quarterly Nominal Disposition Roll of Native Doctors required by the medical authorities, for those Native Doctors lent by Government for employment in the Native States.

VII.—The Agency Surgeon shall communicate with the Superintendent General regarding the discharge of any Native Doctor, stating the reasons for the procedure. Should it be proposed to entertain any Native Doctor, his character and qualifications shall be first submitted to the Superintendent General. Should difference of opinion arise regarding the propriety of discharging or engaging a Native Doctor, the matter shall be referred to the Political Officer accredited to the State. This rule refers to Native Doctors not in the Government service, the procuring or discharge of Native Doctors belonging to the Government service, being provided for in Rule II.

VIII.—Native Doctors in charge of Dispensaries are under the direct orders of the Medical Officers superintending the Dispensaries.

IX.—No Native Doctor or Vaccinator shall correspond direct with the Superintendent General, unless attached to those Dispensaries under the direct control of the latter officer, or unless the necessity of prompt information renders it desirable for the Superintendent General to apply to the Native Doctor direct; or *thirdly*, unless after respectful application to the Superintendent that officer refuses to forward the desired communication.

X.—Native Doctors shall exercise a general supervision over the subordinate servants or establishment of the Dispensaries: where Vaccinators are attached to Dispensaries they will be included in such supervision.

XI.—Native Doctors shall be responsible for the cleanliness of the Dispensary premises, for efficient attention to the sick, and for the custody of and writing up to date of the books.

XII.—Native Doctors are reponsible also for the safe keeping of instruments and medicines, and are required to keep the former, and the more expensive medicines, as quinine, under lock and key. Poisons used in medicine, as strychnine, morphia, aconite, must also be kept locked up, the bottles containing them being distinguished by a yellow label.

XIII.—The Dispensary shall be open from sunrise to 9 P. M. The Native Doctor shall always attend three hours in the morning and three in the afternoon, for the purpose of seeing patients; but he shall not refuse attention to urgent calls at any other time, whether by night or by day.

XIV.—The Native Doctor shall uniformly behave kindly to applicants.

XV.—The obviate caste prejudicies, applicants shall be as much as possible supplied with *dry* or *wet* medicines as wished.

XVI.—Each applicant shall be supplied with a paper, or ticket, on which the name of the Dispensary and Medical Officer shall be printed or written, and on which the patient's malady, date of attendance, and prescriptions may be written, unless the latter are kept in a separate book.

XVII.—Each in-patient shall have a ticket hung over the bead head, showing name, diseases, and prescriptions, unless the latter are kept in a separate book.

XVIII.—Native Doctors shall pay particular attention to the correct registration of patients.

XIX.—Instead of returning all under the head, "cured," those "relieved" are to be so returned, and those "incurable" so returned.

XX.—Should a patient neglect attendance for six days, he or she shall be treated as a fresh case.

XXI.—It is not the duty of the Native Doctor to attend calls in the city, except the Chief requires his attendance at the palace.

XXII.—The Native Doctor may, however, attend Native gentlemen or their families in the city, on his own account, charging them for such services: provided the Dispensary work is not neglected, and that the Native Doctor is not absent at the times mentioned in Rule XIII. for seeing patients.

XXIII.—Without permission from the Superintendent, the Native Doctor shall not take leave, nor shall he delegate his authority to any dresser or subordinate servant for even one day without the sanction of the Superintendent, except when legally summoned by the civil authority.

XXIV.—All leaves of absence of more than fifteen days' duration shall require the sanction of the Superintendent General.

XXV.—Each Native Doctor in charge of a Dispensary shall keep a *Daily Register* of sick, showing attendance of both old and new patients, also the following records:—

A. Monthly and Annual Record of In-patients.
B. ,, ,, ,, of Out-patients.
C. ,, ,, ,, of Surgical Operations.
D. ,, ,, ,, of Vaccination performed at the Dispensary, or by any Vaccinator attached to the Dispensary.
E. Monthly and Annual Record of Pay Abstracts.
F. ,, ,, ,, of Contingent Bills: the latter to show the expenditure on Bazaar medicines, necessaries,—such as firewood, lamp oil, bandage cloth, soap, stationery, and diets,—separately.
G. Receipt and expenditure of English medicines.
H. At Dispensaries where a register of rain is kept, the Native Doctor shall be responsible for such register.

XXVI.—The following Returns shall be sent as soon as possible, after the first of the month by the Native Doctor to the Superintendent:—

Monthly.

A. Return of In-patients,
B. ,, of Out-patients.
C. ,, of Surgical Operation.
D. ,, of Vaccination.
E. Pay Abstract.
F. Contingent Bill.
G. List of persons dieted, from all Dispensaries where the diet roll is not under the immediate inspection of the Superintendent.

Annual due 1st January.

A. Return of In-patients.
B. ,, of Out-patients.
C. ,, of Surgical Operations.
D. ,, of Vaccination.

E. Return of expenditure showing the Superintendent's allowance, Native Doctor's pay, Hospital servants' pay, contingencies, cost of Bazaar medicines, cost of diets, number of diets, separately *per mensem*.

F. Return of European medicines.

XXVII.—It will be optional for local Superintendents to have the Annual Returns prepared in their Office from the Monthly Returns; also to require returns from Vaccinators attached to Dispensaries direct, and not through the Native Doctor; it will also be optional for Superintendents, where the practice exists, to indent for Bazaar medicines at longer periods than one month; lastly, the adoption of the exact form of *Daily Register* attached is optional, provided the form used clearly shows the attendance of both old and new patients.

XXVIII.—In addition a separate report must be sent to the Superintendent when any Native Doctor purposes performing any capital surgical operation, if the case admits of delay; if not, a report must be sent immediately after the operation.

XXIX.—When cholera prevails a daily report of the progress of the disease must be sent to the Superintendent; also similar reports on the occurrence of any other virulent or extraordinary disease.

XXX.—Each Native Doctor shall forward every quarter detailed statement of two medical and two surgical cases under his treatment, noting the daily condition of the patient and the prescriptions given.

XXXI.—The Native Doctors shall also supply any other report required by the Superintendents, either for their own information, or that of the Superintendent General; also, any report required by the latter officer under Rule IX.

XXXII.—All reports and returns shall, if practicable, be forwarded in English; if the Native Doctor is unable to write English, he must take care to write the Vernacular legibly.

Approved,

R. H. KEATINGE, *Lieut.-Col.*,
Governor General's Agent, Rajpootana.

Forms referred to in the foregoing Rules.

RULE XXV.—DAILY REGISTER.

Date.	Numbers.		Names.	Age.	Caste.	Sex.	Name of disease.	Date of discharge.	Remarks.
	New case.	Old case.							

RULE XXV. A. B.

Monthly and Annual Return for in or out-patients.

Return of _____ *patients treated in the* _____ *Dispensary*
for _____ 18 .
Date _____ 18 .

Class.	Order.	Names of diseases.	Remained.	Admitted.	Total.	Cured.	Relieved.	Incurable.	Ceased to attend.	Died.	Remaining.

Here follows the classified name of disease which it is unnecessary to print.

RULE XXV. C.

Return of Surgical operations performed in the _____ *Dispensary for the* _____ *ending* _____

Date _____

Numbers.	Date of admission.	Name.	Age.	Sex.	Caste.	Residence.	Disease and nature of operation.	Date of operation.	Discharge.	Death.	REMARKS.

RULE XXV. D.

Return of Vaccine operations performed _____ ***during the*** _____ *ending* _____

Date _____

District and name of Superintendent.	Number of operators.	PERSONS TREATED.				Cost of operations.	REMARKS.
		Successful.	Unsuccessful.	Doubtful.	Total.		

RULE XXV. E.

Pay Abstract of the Establishment _____ *Dispensary for month* _____

Date _____

Names.	Designation.	Amount of pay.	Total.	REMARKS.

RULE XXV. F.

Contingent Bill _____ *Dispensary for the month of* _____

Date _____

Names of Articles.	Quantity expended.	Market rate.	Cost of quantity expended.	Total.	REMARKS.
Bazaar Medicines ...					
Contingencies ...					
Diets					

RULE XXV. E. 8. F. (ANNUAL.)

Yearly Statement of expenses of the _____

Dispensary for the year ending the _____ 18 .

Date _____

MONTHS.	Superintendent's allowance.	Native Doctor's pay.	Native Vaccinator's pay.	Hospital servants' pay.	Contingencies.	Cost of Bazaar medicines.	Cost of dieting in-door patients.	No. of diets supplied.	Total expenditure.	REMARKS.
TOTAL ...										

RULE XXV. G.

Annual Return of European Medicines from the year _____

Date _____

Medicines.	Quantity remaining on the	Quantity received during the year.	Quantity expended.	Quantity remaining on the	REMARKS.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	

RULE XXVI.

Forms A., B., C., D., E., F., the same as Forms A., B., C., D., E., F., under Rule XXV.

RULE XXVI. G.

List of Persons dieted in the _____ *Dispensary during the month of* _____

Date _____

Number.	Names.	Age.	Sex.	Caste.	Village.	Nature of disease.	Date of admission.	Date of discharge.	No. of days under treatment.	No. of diets supplied.	Amount per day.	Total.	REMARKS.

RULE XXVI. ANNUAL.

Forms A., B., C., D., E., F. as Forms A., B., C., D., E., & F. G. under Rule XXV.

The following operations "capital or important" should be returned in Form C., Rules XXV. and XXVI.

Amputations.	Foreign Bodies... {Lodged dangerously.	Paracentesis Abdominis.
Aneurism.		„ Thoracis.
Ani Fistula.	Fractures.	Perineal Section.
„ Fissure.	Hare-lip.	Pharyngotomy.
„ Artificial Formation.	Hæmorrhoids.	Polipus removal.
Arteries, Ligature and Division.	Hernia.	Resections.
Bladder Puncture.	Hydrocele.	Rhinoplasty.
Bones Excision.	Hydrocephalus	Spina Bifida.
Castration.	Laryngotomy.	Staphyloraphy.
Cataract.	Lithotomy.	Strabismus.
Circumcision.	Lithotrity.	Tendons Division.
Club Feet.	Mal-formations.	Tracheotomy.
Deformities.	Nævus.	Trephining and Elevating.
Disarticulations.	Necrosis.	Tumour removal.
Discolations.	Nerves, Division and Excision.	Urethra incision.
Ec & Entropium.	Obstetric operations.	Varicocele.
Eye Ball Excision.	Oesophagotomy.	Varix.
Fistula Lachrymalis.		Vesico or recto Vaginal Fistula.
„ in Perineo.		

The following diet scale is recommended for important cases :—

MEAT.			Full.		Soup.		Low.		REMARKS.
Mutton	8 chittacks	...	Atta	8½ cht.	Mutton	6 cht.	Milk	4 cht.	Extras or modifications at discretion of Medical Officers.
Rice	2½ „	...	Rice	2½ „	Rice	6 „	* Sago or Rice Conjee	1 „	
Atta	8½ „	...	Dâl	2 „	Salt	¼ „			
Dâl	1 „	...	Ghee	¼ „	.....		Salt	¼ „	
Ghee	¼ „	...	Mussallah	⅛ „					
Mussallah	⅛ „	...	Vegetables	2 „					
Salt	¼ „	...	Salt	¼ „					

W. J. MOORE, *L.R.C.P., Surgeon,*
Superintendent General, Dispensaries & Vaccination,
Rajpootana.

APPENDIX No. III.

ABOO AND ANADRA DISPENSARY.

Second Annual Report, 1869.

DURING the past year the utility or rather necessity of the Aboo and Anadra Dispensary has been abundantly demonstrated. The number of sick treated, 2,623, exceeds the total for 1868 (viz., 1,706) by the large figure of 917. Of the number of applicants, 1,514 were treated at Aboo, and 1,109 at the Anadra Branch: 110 were treated as in-door patients, many being supplied with food; others with both food and clothing. During the cholera period of last year, the Dispensary proved particularly useful, as also during the continuance of the

malarious fever so prevalent in the autumn. At Anadra 113 cholera cases were supplied with medicines, and at Aboo 21. At the latter place 307 persons affected with one or other variety of fever, received quinine or other suitable remedy; at the former place 449 people similarly attacked obtained the necessary medicines. Also, during the sickly cholera season, one of the hospital servants was stationed at the Omedgunge village for the purpose of ministering to the sick at that place.

The principal diseases prevailing during the year have been malarious fevers, disease of the bowels, as cholera and diarrhœa, and ophthalmic affections, of which latter an epidemic occurred at Aboo during the hot season

The routine work of the Dispensary has been conducted as detailed in last report. The Anadra Branch is located in the old travellers' bungalow, and a building has been commenced at Aboo for the reception of more important cases, as those requiring surgical interference, &c.

The following is a List of Out-door Patients treated in 1869.

NAMES.	Admitted.	Cured.	Relieved or ceased to attend, or remaining.	Died.
Small-pox ...	13	12	0	1
Chicken-pox ...	1	1	0	0
Tonsillities ...	8	8	0	0
Intermittent Fever ...	703	701	0	2
Remittent do. ...	24	20	0	4
Ophthalmia ...	169	168	1	0
Dysentry ...	134	131	1	2
Diarrhœa ...	133	133	0	0
Asiatic Cholera ...	113	79	0	34
Rheumatism ...	97	95	2	0
Syphilis ...	56	50	6	0
Gonorrhœa ...	56	56	0	0
Delirium Tremens ...	1	1	0	0
Hysteria ...	1	1	0	0
Headache ...	49	49	0	0
Disease of Ear ...	21	21	0	0
Sciatica ...	4	4	0	0
Epistaxis ...	2	2	0	0
Bronchitis ...	55	55	0	0
Pleurisy ...	20	18	1	1
Pneumonia ...	14	12	0	2
Asthma ...	1	0	1	0
Constipation ...	82	82	0	0
Dyspepsia ...	67	67	0	0
Cólic ...	57	57	0	0
Melœua ...	1	1	0	0
Hæmorrhoids ...	7	7	0	0
Hepatitis ...	1	1	0	0
Ascites ...	1	0	1	0
Splenitis ...	19	18	0	0
Metritis ...	1	1	0	0
Disease of the Genital system ...	10	6	4	0
Hydrocele ...	1	1	0	0
Phymosis and Paraphymosis ...	2	2	0	0
Bubo	9	8	1	0
Orchitis	9	9	0	0
Stricture, Urethra	4	4	0	0
Leprosy	2	0	2	0
Scurvy	4	3	1	0
Aptha	24	24	0	0
Porrigo	4	4	0	0
Itch	50	50	0	0
Worms	2	2	0	0
Guinea Worms	23	19	4	0
Anœmia	14	13	0	1
Dropsy	4	1	2	1
Fungus Diseases	2	1	0	0
Tumour	2	2	0	0
Scrofula	3	2	1	0
Pthisis Pulmonalis	2	0	2	0
Apoplexy	1	1	0	0
Paralysis	3	2	1	0
Hœmoplegia...	1	0	1	0
Disease of Tarsal joints ...	1	0	1	0
Decayed Tooth	39	39	0	0
Urticaria	7	7	0	0
Eczema	9	9	0	0
Herpes	24	24	0	0
Other diseases of skin... ...	20	20	0	0
Abscess	68	66	0	0
Ulcer	181	178	0	0
Teething	2	2	0	0
Burn	8	8	0	0
Sun-stroke	2	2	0	0
Sprain	8	7	1	0
Fractures	2	0	2	0
Contusion	37	37	0	0
Dislocation (jaw and wrist) ...	2	1	0	0
Bullet wound	1	1	0	0
Stone ditto	5	5	0	0
Sword ditto...	4	2	1	1
Scorpion bite	1	1	0	0
Dog bite	2	2	0	0
Monkey bite	3	3	0	0
TOTAL ...	2,513	2,422	29	49

The following is a List of In-door Patients Treated.

NAMES.	Admitted.	Cured.	Relieved or ceased to attend.	Died.
Small-pox	2	2	0	0
Croup	1	0	0	1
Intermittent Fever	27	26	0	1
Remittent ditto	2	1	0	1
Dysentery, acute	8	6	0	2
Ditto, chronic	4	3	0	1

List of Indoor Patients Treated,—concluded.

Names.	Admitted.	Cured.	Relieved, or ceased to attend.	Died.
Diarrhœa	4	3	0	1
Asiatic Cholera	21	13	1	7
Rheumatism, acute	5	4	1	0
Leprosy	1	0	1	0
Guinea Worms	1	0	1	0
Anœmia	3	3	0	0
Dropsy	1	1	0	0
Fungus Disease	1	1	0	0
Hœmoplegia...	1	0	1	0
Pleurisy	3	3	0	0
Pneumonia	2	2	0	0
Peritonitis	1	0	0	1
Hernia, strangulated	2	1	0	0
Dyspepsia	1	1	0	0
Hepatitis	1	1	0	0
Stone in bladder	1	0	1	0
Urticaria	1	1	0	0
Abscess	6	6	0	0
Ulcer	1	1	0	0
Sprain	1	1	0	0
Fracture, Tibia	1	1	0	0
Dislocation, Shoulder	1	1	0	0
Contusions	1	1	0	0
Concussion	1	1	0	0
Bullet wound	1	1	0	0
Sword wound	1	1	0	0
Bear bite	1	0	1	0
Scorpion bite	1	1	0	0
Total ...	110	87	8	15

The following is a List of Surgical Operations performed during the Year.

Important.	Ligature of Artery	1
	Removal of fungus disease from sole of foot	1
	Removal of portion of foot for fungus disease	1
	Strangulated inguinal hernia	1
	Tracheotomy	1
	Paracentesis abdominis	1
	Phymosis	2
	Removal of tumours of scalp	1
Minor.	Hydrocele	1
	Dilating stricture of Urethra	4
	Reducing fractures (fore-arm and leg)	2
	Reducing dislocations (shoulder, jaw, wrist)	3
	Opening abscess	58
	Extracting teeth	31
	Bleeding	2
	Lancing gums	2
	Removing Guinea Worm	1
	Opening Bubo	2
	Sounding for stone	1
	Passing catheter for retention of urine	7
	Scarifying diseased conjunctiva	2

Showing the proportion of Patients treated as regards Caste and Sex per Cent.

Hindoo.	Mussulman.	Christian.	Male.	Female.	Children.
71·	28·	·6	72·	14·	13·

Daily average number of sick on books ... ... 68·73
Ditto ditto new applicants ... ... 6·82

Number Vaccinated at the Dispensary during the Year.

Successful.	Unsuccessful.	Doubtful.	Total.
26	5	75	106

The following is the List of Subscriptions during 1868.

	Rs.	A.	P.
Aboo Lawrence School proceeds of a theatrical entertainment given by the children	15	0	0
Arthur, Colonel, Political Superintendent, Palanpore	10	0	0
Adams, Colonel, Commanding 49th Queen's	10	0	0
Bayley, Captain, Political Superintendent, Serohie	10	0	0
Blair, Captain, C., Political Superintendent, Tonk	10	0	0
Beale, Dr., Surgeon, 49th Regiment	5	0	0
Brooke, Colonel, Officiating Political Agent, Marwar	10	0	0
Blair, Captain J., Officiating Political Agent, Bhurtpore...	5	0	0
Chadwick, R., Esq., Assistant Engineer, Deesa and Aboo	10	0	0
Carnel, Major, Commanding Erinpoorah Irregular Force...	5	0	0
Church Offertory, Aboo, per Revd. Mr. Miller	20	0	0
Second Donation	25	0	0
Chund Kesree, Khazanchee, Marwar Political Agency	4	0	0
Famine Relief Fund, per Captain Bayley (for cholera patients)	39	8	0
Furlong, Colonel, Superintending Engineer, Rajpootana	10	0	0
Fitzgerald, Major, 49th Regiment	10	0	0
Gostling, Major, 49th Regiment	10	0	0
Govind Dhole Sahib, Dholepore Vakeel	5	0	0
Gowan, Captain, Adjutant, Deesa Irregular Force	10	0	0
Hall, Captain, Brigade Major, Deesa	5	0	0
Impey, Major, Political Agent, Marwar	50	0	0
Keatinge, Colonel, V.C., C.S.I., Agent, Governor General, Rajpootana ...	25	0	0
Keatinge Mrs.	20	0	0
„ 2nd donation	25	0	0
„ 3rd „ for cholera and destitute patients ...	25	0	0
„ 4th „	25	0	0
Khan Mokhtar Allee Sahib, Tonk Vakeel	6	0	0
Khan Mahomed Allee Sahib, Jallawar Vakeel	5	0	0
Lal Beharee Sahib, Bhurtpore Vakeel	5	0	0
Lal Motee Sahib, Jeypore Vakeel	4	0	0
Lal Chunnee Sahib, Marwar Vakeel	5	0	0
Lal Mudun Sahib, Kotah Vakeel	4	0	0
Lal Puncholee Sahib, Odeypore Vakeel	5	0	0
Lal Ruttun Sahib, Joudhpore	5	0	0
Madden, Captain, 49th Regiment	3	0	0
Muir, Captain, Officiating Political Agent, Heraotee	10	0	0
Miller, Revd., Mr., Chaplain, Dessa and Aboo	10	0	0
Moore, Dr., Rajpootana Agency	10	0	0
„ for cholera patients	25	0	0
Mul Set Sahib, Serohie Vakeel	2	0	0
Moonshee Bowanhedass, Kishenghur Vakeel	5	0	0
Mull Cheetur Sahib, Khazanchee, Rajpootana Agency	4	0	0
Newman, Dr., Marwar Agency	5	0	0
Orwin, Dr., 49th Regiment	5	0	0
Pershad Omer Sahib, Ulwur Vakeel	5	0	0

The following list, &c.,—concluded.

	Rs.	As.	P.
Roberts, Captain, Assistant to the Agent to the Governor General	10	0	0
Singh Motee Sahib Bahadur, Joudhpore	10	0	0
Shirley, Captain, 49th Regiment	5	0	0
Spence, Dr., Aboo Sanitarium	10	0	0
Taylor, General, Commanding Deesa Brigade	15	0	0
Willans, Captain, Executive Engineer, Deesa and Aboo	5	0	0
Total ...	576	8	0

Statement of Accounts.

Dr. Cr.

	Rs.	A.	P.		Rs.	A.	P.
In hand, as per last report ...	942	1	4	Servants' pay and allowance to Native Doctor	140	13	8
Total Subscriptions in 1869 ...	576	8	0	Extra servant during cholera	9	10	0
				Bazaar medicines ...	14	5	4
				Contingencies, including fire wood, bandage cloth, &c.	67	0	8
				Diets	128	6	6
				Clothing	35	0	0
				Messrs. Treacher and Co., (for Hypodermic syringe) ...	18	9	0
				Delhi Gazette (printed form)	18	8	0
				Subscription for 1868 not paid and written off ...	25	0	0
				Servants' pay omitted in last report	15	0	0
				Purchase of materials, and buildings	710	2	1
				In hand	336	2	1
Total ...	1,518	9	4	Total ...	1,518	9	4

Besides the above sum of Rs. 336-1-4 shown "in hand," Rs. 3,000, as mentioned in last report, remains as a deposit in the Oriental Bank. Some of this, however, is now being spent on building.

Excluding building expenses, the actual cost of the Dispensary for 1869 was Rs. 422-5-2 *plus* the Native Doctor's pay defrayed by Government at Rs. 20 per mensem. While some patients fed and treated in hospital cost comparatively large sums, in one case as much as Rs. 25: the average cost, as nearly as possible, is four annas and half a pie per head.

In conclusion, grateful thanks are due to those whose subscriptions have enabled me to continue the institution.

W. J. MOORE, L.R.C.P.,

Surgeon, Rajpootana Political Agency,

and Superintendent General, Dispensaries, Rajpootana.

No. 23 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, JUNE 18, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

HOME DEPARTMENT.

NOTES ON THE LEAD VEIN NEAR CHICHOLI, RAIPORE DISTRICT.

THE following is the result of a brief surface examination of the locality near Chicholi at which lead was discovered three or four years since, by Mr. Smart, of the Revenue Survey. The spot is rather more than 70 miles West of Raipore on the road to Bhandara and Nagpore.

The ore (Galena) occurs in a well marked vein, chiefly composed of quartz, which traverses the metamorphic rocks. The latter are not well seen in the neighbourhood of the vein, but in the surrounding country consist chiefly of granite or granitoid gneiss, and hornblende schist passing into diorite. Besides quartz, the vein contains pink felspar in considerable quantities, green and purple fluorspar, and a green mineral, probably epidote. Galena is sparingly disseminated throughout the mass for some distance on each side of the road, and I found slight but unmistakeable indications of the presence of copper, small quantities of the green carbonate occurring in several places.

In some parts of the outcrop there is a large quantity of peroxide of iron, sometimes as a coating on the surface, sometimes irregularly mixed with quartz ("gossan"), and evidently resulting from the decomposition of some other mineral. This is a common occurrence at the outcrop of mineral veins, and is, I believe, usually considered a favorable indication by miners, in copper veins at least. But the value of such indications depends greatly upon local conditions. Large masses of peroxide of iron and quartz or "gossan," as it is termed in Cornwall, are seen just North of a little peak about quarter of a mile North of the road.

The direction of the vein is N. 10° E., S. 10° W. It forms a series of ridges, some of which are at least 100 feet high above the surface of the ground. I traced the vein for about half a mile North of the high road, and for at least a mile to the South. Beyond the distance mentioned to the North, I could find no signs at the surface of its occurrence, but I did not search for. To the South it doubtless extends beyond the spot to which I traced it, and a hill is seen in the direction in which the vein runs which may be formed of the quartz.

The width of the vein, as usual, varies greatly. Near the high road, both North and South, it cannot be much less than 30 feet. About a quarter of a mile to the South this thickness gradually decreases to about six feet. At this spot the vein stone rises like a wall above the surface of the little ridge formed of its quartzose *debris*, and the direction of its dip, obscure elsewhere, is distinctly seen. It here underlays to the Eastward at an angle of about 10° from the vertical, in other words it dips at 80°. Beyond this to the South, the thickness probably diminishes still further, as for about quarter of a mile the vein can no longer be traced at the surface; beyond that distance it again forms a ridge of some height.

It is simply impossible from the surface examination of a metallic vein, especially in a District where no mines exist, to ascertain what its value may be below the surface. All metallic mines are more or less speculations. Taking into consideration the large amount of vein stone exposed, the proportion of Galena seen is small, and, unless the quantity of lead ore be greater below the surface, it will not alone pay for the working. It should be observed that the fresh, unaltered appearance of the Galena found renders it improbable that its paucity is due to the greater portion having decomposed. But larger masses may occur below, and there is also a probability of copper ore being found. The occurrence of the ores in a well marked vein is certainly a most important circumstance, and I may add that it is the first instance of a distinct metallic lode that I have seen in India.

Altogether I think it may safely be stated that there is nothing in the appearances presented by the Chicholi lode inconsistent with the occurrence of a good vein of lead and copper ore below the surface. There are two disadvantages in the locality,—the absence of workmen acquainted with mining, and want of water, not merely as a motive power for pumps, &c., but for stamps and washing floors. But these are only questions of expense, and, should rich ores occur, will readily be overcome.

At Wurraband, 16 miles East of the Chicholi lode, two rather irregular quartz veins occur, forming hills of considerable size. I saw no traces of ore or of fluorspar in these, but my search was necessarily hurried. The direction of these veins approximates is that of the Chicholi lode.

CAMP RAIPORE;
The 17th March 1870.

W. T. BLANFORD,
Deputy Supdt., Geological Survey of India.

EXPLORATIONS FOR COAL IN THE WURDHA RIVER COAL-FIELDS.

From THOMAS OLDHAM, ESQ., LL.D., Superintendent, Geological Survey of India, to the Secretary to the Government of India, Home Department,—No. 713, dated Calcutta, the 2nd May 1870.

In continuation of previous reports, the last of which was dated 28th March, No. 661, I have now to submit a brief statement of further progress made in the explorations for coal in the Wurdha River coal-fields.

2. I mentioned in my last report that a second boring had been commenced in the lands of Majie village, at a point where it was hoped to avoid the great overlapping of the upper rocks, and to find the coal beneath. This has been quite successful. Coal was struck at 75 feet, and the boring having been continued, a thickness of coal and coaly shale of more than 50 feet was passed through.

3. The Jonara boring (in Berar), also referred to, has been carried down, and the thick coal, which occurs on the other side of the Wurdha, proved to be continuous into Berar. Some 45 feet were cut through.

4. New borings have been made at Goarie or Gowarie, also in Berar, six or seven miles further to the North. This boring was not completed at date of last returns, also at Borgaon, between Goarie and Jonara. This hole is also in progress. A third boring has been commenced near Rajur (Berar), which is a village about one mile East of Nét (Naith) well into the field, and about six miles in a right line from the Wurdha River, and at date of last report eight feet of coal had been cut into.

5. Owing to a rather serious attack of illness, Mr. Heppel, Brace head-man, has been, I regret to say, in Hospital almost all this month, and from his weakened state, it will scarcely be safe for him to take the field again during the hot wind season.

6. This illness has thrown on Mr. Smyth the conduct of the operations at all four borings, and I have much pleasure in stating that the work has progressed under his charge rapidly, safely, and without any interruption. Native holidays (Mohurrum) stopped the progress for a few days, but with this exception, Mr. Smyth has carried on the four holes or borings at the same time with perfect success.

7. The progress made with the steam-boring machine has been very little. This machine was started in anticipation of the arrival of the tubing or piping which had been sent from England for use with it. But on cutting down about 150 feet, the sand of the softer beds was found to come in so rapidly into the bore hole, as entirely to clog the hole. So much as 120 feet of the hole was found to be filled up in one night, and it often required nearly the whole working day to pump out this sand, &c., before any progress could be made. While working steadily in this very unsatisfactory way, Mr. Mather also burnt his foot at the engine, and has been obliged to lie up, being forbidden by the Doctor to move at all. After great delay, the piping has now, I believe, been despatched to Chanda, although up to the 25th, it had not reached; and the work will, I hope, progress rapidly.

8. There are still remaining to be put down in the North of the field, about four borings, which ought to be ample to prove the whole of that area satisfactorily. If not interrupted by sickness or other unforeseen causes, these ought all to be finished by the 15th of May or end of May.

9. Taking advantage of the shelter of a bungalow, the necessary trials close to Chanda town can then be carried on, and possibly the steam-boring machine, when it has completed its present boring, can be moved to Wurrora, to test the ground about that place.

10. As the control of these practical operations has now, I am glad to say, been transferred to the Local Government, I desire to bring to notice the very zealous, intelligent, and satisfactory way in which Messrs. Smyth and Heppel have superintended these borings. The selections of the points at which bore holes were put down has been in every case (since I proceeded to the field at the beginning of November) made by myself, or since I left, by Mr. Hughes; but the actual work has been carried on by these officers most efficiently and rapidly. There has not been with either a single loss of tools, or a single interruption of work, and since Mr. Heppel's sickness, Mr. Smyth has taken upon himself the superintendence of four borings, and conducted them all with skill and success. Mr. Smyth has himself, I regret to say, been laid up for a few days by an accident when riding, but has continued his work.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

GENERAL PRINCIPLES TO BE OBSERVED IN THE ALIGNMENT OF RAILWAYS.

Resolution by the Government of India, Public Works Department,—Circular No. 6 (Railway), dated Simla, the 6th June 1870.

RESOLUTION.—In recent proposals for the alignment of certain railways, a tendency to attach undue importance to shortness of through distance between the termini has been exhibited, which renders it expedient that the Government of India should explain the principles that they desire to see adopted in the detailed laying out of lines of railway.

2. Doubtless, the conditions which demand a line of the shortest length may present themselves in all countries; but, in India, with its immense area, and its paucity of communications, those conditions are seldom met with. In a line of communication of any considerable length, a railway presents in India such a vastly better means of transit compared with anything pre-existing, that, regarded from the point of view of the interests of the people and of commerce, the cases must be exceptional in which it would be proper to leave a place of importance, either altogether off a proposed line of railway, or to be served by a branch, when by a deviation involving an inconsiderable addition to the total length of the through line, that place may be served directly.

3. In a country possessing no considerable population or trade, the construction of a railway will bring these in its wake, and its precise alignment is a matter of comparatively little importance. On the other hand, in a country of which the trade has taken a definite shape, and the population is concentrated in towns, it is essential, if the existing trade is to be developed and the convenience of the people is to be served, or, in other words, if the railway is to fulfil all the objects with which it has been projected, that it

shall be taken in the direction best calculated to suit the centres of population and of commerce.

4. There may sometimes be political or strategical reasons for adopting or avoiding a particular route; seldom, if ever, in the present circumstances of India, of avoiding a large city. An inland province may have to be connected with a distant seaport through an inhospitable region, or under circumstances which, if its trade is to be fostered, demand the least possible tax on transport. A frontier province may require the most rapid means of communication with its supports. These, and doubtless other cases, may be cited, in which the disadvantage of the slightest addition to the length of a line of a railway, in order to bring local traffic on to it, may be advanced with some show of reason, if not permitted to carry conviction.

5. But, as a general rule, nothing can justify that rigid adherence to the straight line connecting the obligatory points of a railway which, in ignoring the just claims of the districts passed through and of the towns in its vicinity, sacrifices the local traffic and public convenience as well as revenue to a not unfrequently inconsiderable saving in the first cost of the line, and a practically inappreciable saving of distance and of time in a long through journey. The paying traffic of our railways consists of goods and Native passengers, and, within reasonable limits, that location should, as a rule, be selected which will attract the greatest quantity of goods and the greatest number of passengers to the line. For these desiderata centres of population and of trade must be sought, and the lines should be taken as near to them as local circumstances will permit. If there is one thing more than another in connection with the railways of western countries, of which the paramount importance has been recognised during recent years, it is their extension into the very centres of business.

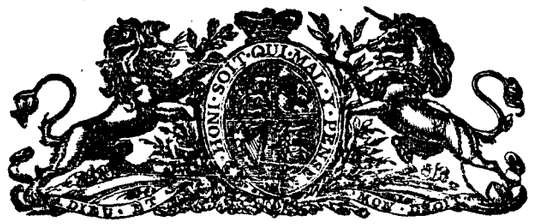
6. It is not necessary to cite examples in which, for reasons doubtless considered sound and sufficient at the time, the principles here indicated have not been adopted. The facts are patent. Places of importance are daily passed by trains at a distance of a few miles, the results being deficient conveniences to the people and incommensurate returns to the promoters of the undertakings. The Government of India desire that these disadvantages shall not be perpetuated so as to become the distinguishing feature of Indian railways. All officers, therefore, whether civil, political, or departmental, whose duties may in any way associate them with the present or future schemes of railway extension, will understand that the Government have adopted the principles here inculcated after full consideration, and that the precise location of future lines would be made in conformity therewith.

Madras.	Oudh.
Bombay.	Hyderabad.
Bengal.	Mysore.
North-Western Provinces.	British Burmah.
Punjab.	Central India.
Central Provinces.	Rajpootana.

ORDER.—Ordered, that this Resolution be communicated to the Governments and Administrations noted in the margin for information and guidance.

Also, to the Foreign Department of the Government of India for such further action as may seem called for in that Department with reference to paragraph 4 of Public Works Department No. 941R, dated the 30th May 1870.

No. 24 of 1870.



SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, JUNE 25, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

HOME DEPARTMENT.

COAL AT KORBA IN THE BELASPORE DISTRICT OF THE CENTRAL PROVINCES.

From T. OLDHAM, ESQ., LL.D., Superintendent, Geological Survey of India, to the Secretary to the Government of India, Home Department,—No. 727, dated Calcutta, the 17th May 1870.

I HAVE now the honor to forward to you, in original, a report on the character and quantity of the coal exposed in the Belaspore District, near the village of Korba, drawn up by Mr. W. T. Blanford after his recent examination of the locality. The report was promised to be submitted before the end of May (my letter to your Office, No. 607, dated 28th December 1869), I have also appended the results of Assay of the various specimens of the coal sent in by Mr. Blanford.

2. It will be seen that, after careful examination, Mr. Blanford has arrived at the conclusion that there are very favorable prospects of the coal field turning out productive of a large amount of workable coal of fair quality.

The coal field in which Korba is situated, farther extends to the East as far as Rabkuk, the *Oodeypore* of the maps. There is abundance of coal in the Eastern portion, but the quality has not yet been examined. There is, however, not much reason to suppose that it will differ materially from that of the same coals to the West.

3. There is, therefore, as anticipated by myself long since, every probability of an extensive and useful supply of coal being available in these Districts, spread over a very considerable area (Oodeypore is some 50 miles from Korba, in a right line).

4. The occurrence of large plateaus of high ground, nearly flat on top, locally known as Pats (Main Pat, Juneera Pat, &c.,) in this vicinity, ought not to be forgotten, for these offer free selection of localities in every way adapted as retreats for Europeans during the hot weather, which, if a Railway be constructed here from Calcutta, would become readily accessible. The upper portion of all these plateaus is composed of trappean rocks overlaid by thick laterite, and for the most part they have an abundance of excellent water. The value of such a plateau, offering wide open space, dry, or well-drained soil, water abundant and good, and with an elevation of 4,000 feet above the sea, as sanatorial locations for either Troops or Civilians cannot be too strongly insisted on.

5. In view of a Railway being constructed, it may be well also to draw attention to the present abundant supply of timber for sleepers and other purposes, most of which will, in a few years more, if care be not taken, have passed into the hands of speculators and contractors. It would, undoubtedly, be desirable to take some early steps towards the preservation of these forests.

Report on the Coal at Korba, in the Belaspore District.

1. *Locality and mode of outcrop.*—The village of Korba is situated in the Eastern part of the Belaspore District belonging to the Chatisgarh (Chutteesgurh) Division of the Central Provinces, and is the residence of a zemindar who owns a large portion of the surrounding country. It lies on the left or Eastern bank of the Hasdo River, a large tributary of the Mahanaddi. This stream has, in most places, a broad sandy bed, varying, however, from about 200 yards to above half a mile in breadth. The country around Korba, for many miles in all directions, is flat, or very gently undulating, and usually covered with clay.

Coal is exposed in two places close to the right (Western) bank of the river, just below Korba. The exposures are in the bed of the river, no section being seen in the bank itself, and, as will presently be shown, it is probable that both belong to the same seam of coal. A very slight rise in the river is sufficient to conceal both outcrops.

The lower outcrop, which is about half a mile below the village, is the best suited for examination, as both the top and bottom of the seam are exposed. A considerable proportion of the section is above water during the dry season, although there is always a great thickness concealed. The seam is remarkably thick, but, owing to its mode of occurrence, it is impossible to measure it exactly. It may, however, be computed sufficiently closely for all practical purposes. The dip varies in inclination from 13° to about 18° and in direction from N. 30° E. at the Northern extremity of the section to N. 16° E. at the Southern end. The horizontal breadth of the outcrop at right angles to the strike is 350 feet, and, taking the average dip at 15° the corresponding thickness is 90 feet. This, I believe, is rather below the truth than in excess of it.

Both above and below the coal, massive felspathic sandstones occur. Below the seam but a small thickness of these rocks is exposed, but above it, at least, 400 or 500 feet are seen in the river.

2. *Section of coal, seam and quality of coal.*—Of course the great thickness already mentioned does not consist throughout of workable coal. Bands of shale and of inferior coal are interspersed, as is more or less the case with most Indian coal seams. From the imperfect manner in which the seam is exposed, especially towards the base and from the surface, as usually happens, in similar positions, being extensively decomposed, it is impossible to obtain a correct idea of the quality of the coal without cutting into it. I consequently had a series of small pits dug, 6 to 7 feet deep, and from these and the portions of the seam fairly seen in the river bed, I obtained a good section of the whole thickness with the exception of about 10 feet. To examine these few feet would have caused some delay with the means at my disposal; and I had already fully ascertained the existence of a large proportion of good coal.

The section of the seam thus ascertained is the following. Of all the bands of coal to which letters are attached, specimens have been transmitted to Calcutta for analysis :—

Sandstone—	Feet.	Inches.
Shale about	1	0
Coal of fair quality	1	0
Inferior coal	1	0
Shale and inferior coal	3	3
Good coal, an inch or two of inferior coal here and there	3	9*a*
Good coal	6	0*b*
Shale and coal mixed	1	6
Good coal	3	0*c*
Shale with bands of coal	3	6
Good coal	4	0*d*
Coal and shale mixed	2	0
Shale with bands of coal	2	0
Coal of fair quality	1	6
Inferior coal	0	6
Good coal	5	6*e*
Shale	0	6
Coal	0	3
Shale	2	0
Coal	1	0
Shale and inferior coal	2	0
Good coal	4	0*f*
Shale with bands of coal	3	0
Shale and coal, the latter good in part	3	0
Coal, rather inferior in parts but generally good ...	3	6
Shale	1	0
Good coal	1	0
Not examined about	3	0
Shale	1	0
Good coal	4	6*g*
Not examined about	3	0
Good coal	4	0*h*
Shale	0	4
Good coal containing one or two thin bands of shale ...	5	8*i*
Not examined about	3	0
Shale	0	4
Good coal	2	8*j*
Sandy shale / Sandstone	89	3

The above section shews a *minimum* thickness of 50 feet of good coal. The proportion is probably nearer two-thirds of the seam. The best bands appear to be those marked *b*, *g*, and *h*. Portions of these and especially the lower 2 feet of *h** appeared to me equal in quality to any coal found in the Raneegunge field. There is some iron pyrites here and there, but not throughout. The coal ignites readily and burns well with rather more flame than is usual in Indian coal obtained from the surface. The ash left is large in quantity, and partly red, partly white.

* By a rough experiment, I obtained very fair coke from this part of the seam.

Probable extent of seam.—Metamorphic rocks are seen in the Hasdo about three miles South of Korba, and also at about the same distance to the North: these mark the limits of the beds accompanying the coal in those directions. East and West, the coal-bearing beds extend to a great distance and to the North-East they are apparently continuous with those forming the hills East of Chúri and Sutringa, and these are probably part of one large field which has been found by Mr. Medlicott to extend beyond Sirgúja. But, unfortunately, the surface of the country near Korba is so much covered with alluvial deposits that very few rocks are visible, and those seen are almost invariably coarse sandstones, the dip of which can rarely be determined accurately. West of the Hasdo the concealment is even greater than to the East, while in the latter direction, the whole country is an immense forest, rendering the relative position of the few outcrops met with very obscure.

But little information can be derived from the rocks seen in the Hasdo. The second outcrop of coal occurs about 300 yards higher up the river than that already described, and close to the same (right) bank. It is distinctly seen to be faulted against the sandstones which overlie the coal exposed at the Southern outcrop. About 50 feet of coal are exposed, neither

the top or the base of the seam being visible. The dip is very irregular and twisted, owing to the fault close by; it averages about 12° to N. 10° W.

It appears more probable that this is the same seam as that seen a little farther down the river, and that it is brought up again by the fault than that two seams of such unusual thickness should occur in the same beds. This, however, can only be positively decided by boring. The coal at the more Northern outcrop appears rather inferior to that seen to the South, but in the latter locality, the central portion of the seam contains more shale and inferior coal than the top and bottom, and it is the central portion of the seam which alone is exposed to the North. If the two outcrops belong to the same seam, the fault has a downthrow on its Eastern side of no great amount, probably not much above 100 feet.

So far as any reliance can be placed upon the dips on the sandstones, the general direction appears to be North by East to North North-East, for about a mile up the river, above the coal. Beyond this no rocks are seen. Just above the village of Korba, on the left bank, there is a reversed dip to the South-West, but it is probably local.

Below the Southern outcrop, rock is only seen in the river at distant intervals. The few sections observed appear to indicate that the direction of the dip changes to the Eastward. In this case the outcrop of the seam may pass for a long distance down the river, being concealed by the sand in the bed, which is here of great width. All the dips seen appear to be lower than those at the outcrop of the coal; and it is highly probable that the amount of inclination may be higher at this spot than it is elsewhere, and the direction of the dip different in consequence of the fault close by. The circumstance already mentioned of the variation in both amount and direction of dip at different parts of the outcrop in the coal seam itself, is in favor of this view.

So far as an opinion can be formed on these very imperfect data, it appears that the rocks associated with the coal cover a large tract of country, and it is improbable that so thick a seam should thin out within a short distance. It is, however, quite in accordance with our knowledge of similar seams in other parts of India that the exact thickness, the quality of the coal, and the proportion of good coal to inferior coal and shale should be highly variable.

If the coal seam be continuous, it should be found West of the Hasdo throughout a tract from one to two miles broad, extending probably in a West North-Western direction from the river, the Southern boundary of this tract passing through the more Northern of the two outcrops seen in the river. East of the stream the seam should underlie the village of Korba, and the river bank for at least a mile below and probably one to two miles above the village, and it may extend for an indefinite distance to the Eastward, but it is possibly at a considerable depth below the surface throughout a large proportion of the area.

It is evident that, before attempting to open a coal mine, boring must be resorted to in order to ascertain the extent of the seam, and its depth beneath the surface. The best places for boring will depend upon whether it is desirable that the coal should be extracted on the East or on the West side of the Hasdo.*

* In case of a railway bridge being necessary across the Hasdo, Korba appears to be a more favorable spot than any other in the neighbourhood, as the breadth of the river is moderate, and a considerable portion of the channel rocky. For several miles above and below, the breadth is very much greater and the bed a wide expanse of sand.

If to the West, as the strike of the rocks is somewhat uncertain, the first boring should be made about a quarter of a mile West North-West of the spot where the more Northern outcrop appears in the river. Although the strike at the outcrop is West by South, there can be but little doubt that the normal strike is North of West, and that the alteration is due to the fault. Should the coal not be found in the first boring, within a depth of 200 feet, two others,—one 300 yards further North, the other at the same distance to the South,—should be made. When the true direction of the outcrop is ascertained, it will be well to continue the borings along it at distances not exceeding half a mile apart, as any slight change of direction coupled with the high dip (if the latter be constant) will take the coal below the depth to which borings can most conveniently be made. There is also a possibility of other faults occurring besides that seen in the river.

On the East of the Hasdo the question is simpler. The fault so frequently referred to must either pass through the village of Korba or just South-East of it. West of the fault, a boring behind the zemindar's residence would probably pass through the seam. East of the fault the best place for boring is at a spot where sandstone occurs in the left bank of the river below Korba, due East of the more Southern outcrop on the right bank. Owing to the rather high dip, these borings should be made to a depth of about 400 feet, if coal be not found sooner. But, as I have already suggested, it is far from improbable that the high dip is local, and that on the left bank of the Hasdo the inclination is less, in which case the coal may be found at a moderate depth. Other borings, if the above are successful, may be made at intervals along the East bank of the stream below Korba. To the North of Korba the coal for some distance is probably at a considerable depth, but, if continuous, it must again rise

towards the surface between one and two miles North of Korba. It is, however, impossible to indicate with accuracy a good spot for boring in this direction. The best plan for examining the ground would be to put down a series of borings along a line running North North-East from Korba at half mile intervals.

Facilities for mining.—The dip of the seam where seen in the river, although considerable, is by no means so high as to be any impediment to mining beyond its effect in rapidly increasing the depth of the seam below the surface. The sandstone above the coal is firm and massive, and will probably furnish a good roof. The coal appears compact, the joints or "barks" are rather irregular, but still sufficiently marked in general to facilitate mining. Some of the very best and brightest coal is, as usual, rather brittle,* but the greater portion of the seam bears carriage well.

*This bright coal, as I have mentioned, makes a very fair coke, and in that state is far less brittle, besides being much lighter and consequently costing less for carriage. The cost of coking in ovens heated by waste coal would be very trifling.

In consequence of the absence of bands of shale in the overlying sandstone, the quantity of water may be rather larger than usual, but in the small pits dug in the bed of the river, the coal did not appear, in general, to be porous.

In mining a seam of such thickness as this, especially where the proportion of good coal is large, if the roof prove as sound as will probably be the case, it will be an important economic question whether some more advantageous method of mining cannot be adopted than that of removing a small section of the seam, not exceeding 12 feet in height, by "long-wall," or still worse by "post and stall," more especially as it is highly improbable that the best bands of coal will be found for any distance on the same horizon,—a most serious drawback to mining on either of the two English systems mentioned. It would, however, be premature to enter into this subject at present, but the methods adopted for extracting the thick deposits of lignite or brown coal found in parts of Germany are deserving of attention.

Conclusion.—I have endeavoured to show my reasons for the opinion I have formed as to the Korba coal. My conclusions are briefly that both the quality and mode of occurrence are favorable. In thickness, in quality, and in the proportion of good coal to inferior coal and shale, the seam surpasses that near Chanda. The question of the extent over which the coal extends must be ascertained by boring.

CAMP KORBA;
The 18th April 1870.

W. T. BLANFORD,
Deputy Supdt., Geological Survey of India.

The following Table gives the result of Assay of the Coals referred to in Mr. Blanford's Report just given:—

	Carbon.	Volatile.	Ash.	
A	38·7	26·6	34·7	
B	45·8	22·4	31·8	
C	42·3	25·2	32·5	
D	39·6	24·6	35·8	
E	47·8	28·2	24·0	
F	32·8	21·4	45·8	
G	46·4	23·6	30·0	
H	57·5	25·2	17·3	
H lower 2 feet*	60·5	29·5	10·0	
I	46·5	22·2	31·3	
J	53·3	27·2	19·5	

* Cakes slightly.

The 9th May 1870.

A. TWEEN.

LEVY OF AN EDUCATIONAL CESS IN BENGAL.

From E. C. BAYLEY, ESQ., C.S.I., Secretary to the Government of India, to the Secretary to the Government of Bengal, General Department,—No. 324, dated Simla, the 24th June 1870.

REFERRING to my letter No. 536, dated 30th September 1869, paragraph 3, I am now directed to forward to you the accompanying despatch from Her Majesty's Secretary of State, No. 5, dated the 12th of May last.

2. Your letter No. 1768A, dated the 30th April 1869, acknowledged in my letter above-quoted, raised such important questions in regard to the levy of an Educational Cess in Bengal, that the Governor General in Council, while maintaining the views previously expressed by the Government of India on the subject, considered it due to the strong views entertained by the Lieutenant-Governor that the entire correspondence should be submitted for the opinion of Her Majesty's Government.

3. The despatch now enclosed contains a decision embracing fully all the points of principle raised by the Lieutenant-Governor and this decision the Governor General in Council fully accepts. His Excellency feels it to be unnecessary to add anything to the arguments used in the despatch, and rests assured that the Lieutenant-Governor will acquiesce in the conclusions which the Secretary of State has founded upon them.

4. The Governor General in Council will advert only to the 20th and concluding paragraphs of the despatch. I am to state His Excellency in Council's entire concurrence in the views expressed in those portions of the despatch. No intention has ever been entertained by the Government of India of applying to one purpose rates nominally levied for another. The words of the Government of India to which the Secretary of State adverts in his 23rd paragraph had reference to an expression of hope that the Lieutenant-Governor would, in discussing the best mode of levying the road cess, be able to overcome the difficulties of detail which admittedly beset the levy of local cesses in Lower Bengal.

5. The Governor General in Council is not unmindful of the existence of these difficulties, but fully shares in the confidence expressed by the Secretary of State as to the Lieutenant-Governor's ability to surmount them; and I am to add that he equally shares the views of the Secretary of State as to the policy and expediency of administering the proceeds of the rates, so far as may be possible, through the people themselves.

6. The Governor General in Council is of opinion that in this question is involved a matter of higher import than mere financial convenience. Local taxation should, as far as possible, be accompanied by local administration and local responsibility. His Excellency is most sincerely desirous that every opportunity should be given to the people to participate in the management of their local affairs. He believes that the comparatively limited experience which has been gained on the subject is not discouraging. In any plan which may be considered this primary object should never be lost sight of, and he will, with this view, gladly assent to any measures which the Lieutenant-Governor may propose for ensuring the cöoperation of the intelligent classes of the community, both in the levy of the rates and in the disposal of their proceeds.

7. I am to add that it is the wish of His Excellency in Council to leave to the Local Government the utmost possible discretion in regard to the general superintendence and control of these and of all other funds raised by local taxation for local purposes.

8. In conclusion, I am to express a hope that the interval which has elapsed since my letter of the 30th September last, will have sufficed for the preparation of the outlines of a scheme of local taxation, such as is indicated in the enclosed despatch, and that His Honor will be very shortly in a position to submit it to the Government of India in a shape that will prevent any further delay in putting it into active operation.

Educational.
No. 5.

INDIA OFFICE;
London, the 12th May 1870.

To His Excellency the Right Hon'ble the Governor General of India in Council.

PARA. 1. I have had under my consideration in Council your Excellency's despatch No. 17 of the 31st December 1869, with a copy of further correspondence with the Government of Bengal "on the subject of providing from local sources the means of extending elementary education among the masses of Bengal, and of constructing and maintaining roads and other works of public utility." In the concluding paragraph of your despatch under consideration, you declare that the "imperial resources of the empire are unable to provide the large sums necessary for such purposes as these," and you add, "if we are to make roads, to educate the people of Bengal and keep them clean and healthy, it can only be done by imposing on local resources such a burden as they can conveniently bear. We are therefore decidedly of opinion that it is the duty of the Government of India to insist on their gradual imposition, and, if we have refrained from taking immediate steps for this latter object, it mainly is because we wish to be informed, in the first instance, whether our conclusions are accepted by Her Majesty's Government, it being of much importance that we should be fully assured of their support in any measures that we may take to give effect to our intentions."

2. I do not understand the question, now referred for my decision, to be the question whether a local cess, if levied at all, can justly be levied from the zemindars alone, or whether all other classes which have acquired beneficial interests in the soil must equally contribute to the rate. The Lieutenant-Governor of Bengal understood the letter of Sir J. Lawrence, of 28th October 1867, No. 5876, as a proposal to levy rates from the zemindars alone. This impression does not seem to have been removed by the farther letter from Sir J. Lawrence's Government, dated 25th April 1868, No. 237. This last letter modifies, on several points, the opinions which had been indicated in the previous letter of 1867. These modifications the Lieutenant-Governor, in his letter of 30th April 1869, No. 1768A, refers to as important, but he does not accept them as sufficient. In particular, he points out (paragraph 10) that, whilst the method of rating the cess originally suggested (namely, in proportion to the land revenue) is abandoned, "it does not appear that the Governor General in Council has altered his opinion as to the persons who should be called upon to pay it." Accordingly, the Lieutenant-Governor proceeds to state some most important facts, which had not, probably, received adequate attention when the levying of rates was first suggested,—that since the Permanent Settlement was made the condition of landed tenures has entirely changed, and a great variety of derivative interests have arisen between the original zemindars and the actual cultivators of the soil. So complete is this change, that the Lieutenant-Governor represents (paragraph 27) the Permanent Settlement as having been "only a gift to certain individuals, and neither can these persons for the most part now be identified, nor can the share of the increased rental appropriated by them and their successors or assigns be ascertained." In the despatch under reply, the bearing of these facts on the incidence of rates is fully acknowledged, and, in view of them, it would clearly be unjust, irrespective even of the promises given under the Permanent Settlement, to levy cesses or rates solely upon the zemindars. Looking, however, to this correspondence as a whole, I gather, even from the letter of the 28th October 1867, more clearly from the letter of 25th April 1868, and most clearly of all from your Excellency's despatch now under reply, that neither the method of levying the rate, nor the distribution of its incidence among different classes, were questions to which chief importance was attached by the Government of India. The one point on which Sir J. Lawrence insisted, and on which your Excellency

now insists, is that the expense of roads, education, &c., in Lower Bengal, cannot be borne by the imperial exchequer out of its existing revenue, and that it must be met by special rates levied locally for the purpose. The method of levying the rate and the distribution of it, were matters to be carefully considered in communication with the Lieutenant-Governor of Bengal. His Honor, in his letter of 30th April 1869, finally accepts a rate for roads to be levied upon land, but only in consideration of the urgency of your Government and the obvious utility of the purpose in view. His Honor also seems prepared to admit that it might be legitimate, though not expedient, to levy a rate for education, provided it were converted into a general tax affecting all incomes from whatever source. But in principle, I understand His Honor to contend, and a great part of his letter to be directed to establish, that, whether for roads or for education, it is not just to levy in Bengal any merely provincial tax whatever, and especially any rate or cess, the main burden of which must be laid on land held under the terms of the Permanent Settlement of 1793.

3. The question thus raised for the decision of Her Majesty's Government has immediate reference to Lower Bengal; but the arguments used on both sides in the correspondence involve, both directly and by implication, the whole subject of the conditions and the circumstances under which the Government of India can be justified in imposing on the people special rates or taxes in order to effect improvements which the existing revenue is insufficient to provide for.

4. The importance of this subject in a financial point of view can hardly be exaggerated. It may be stated broadly that the general or imperial revenues of India are barely sufficient to meet the demands which are at present made upon them by the Civil, Political and Military Administration of the Empire, together with the interest on debt and the interest on great public works which have not yet become remunerative. But whilst these exhaust the means at the disposal of the Government, they do not exhaust the obligations which are thrown upon it by the condition of the people. The Government does, and it ought to do in India, much, which in Europe is undertaken by private enterprise, or by municipal and other local bodies. In India it may be said with substantial truth that private enterprise does not exist, and that the machinery for local taxation and expenditure is yet but imperfectly developed. In the Department of Public Works, both "Ordinary" and "Extraordinary," there is a large expenditure by the Government which, in Europe, would be met either by individuals or by Companies, or would be defrayed by assessment. But there is still much absolutely requiring to be done, if the condition of the people is to be improved, which the Government cannot overtake out of imperial funds. It cannot, out of the means now remaining at its disposal, make and maintain the roads and bye-roads required for developing the resources of a country so vast as India. If, therefore, this work is to be done at all, it must be done by the help of rates established for the purpose. In like manner, it has been assumed in all the discussions which have arisen during recent years upon this subject that the expenditure which may be required for the Vernacular Education of the people and for sanitary improvements cannot be afforded by the imperial revenue, and must be met in the main out of the same additional resources. There appears, indeed, to be no alternative unless it be the alternative of allowing the country to remain without drainage, and without roads and without education.

5. Accordingly, this conviction has been now for many years forced upon the Administrations of some of the most important Provinces in India, upon the Supreme Government and upon several successive Secretaries of State. Local rates for meeting the necessities of local improvement have been levied, over and above the land revenue, in the Punjab, in the North-Western Provinces, in Central India, in Oudh, in Sind, and throughout the Presidency of Bombay. I shall presently advert to the distinction which has been drawn between the circumstances and conditions under which these rates have been imposed, and the circumstances which affect the question of imposing them in Bengal. I am now only recording the fact that such rates have been raised in the Provinces above-

named. In the 53rd paragragh of the Educational Despatch of the 7th April 1859, Lord Stanley called special attention to the question of the expediency of imposing a special rate to repay the expense of schools for the rural population. Sir Charles Wood, in his despatch of the 25th May 1861 to the Government of Bombay, whilst recounting all the difficulties and objections which had been felt upon the subject of cesses in addition to the land revenue, spoke of the obligation to keep up roads of internal communication as a liability everywhere attaching, both by reason and by custom, to the owners and occupiers of land. In respect to education, he referred to the probable necessity of dealing with the question by a specific legislative enactment. Accordingly, such an enactment, under conditions to which I shall afterwards refer, has actually been adopted in Bombay. Lastly, my predecessor, Sir Stafford Northcote, in Council, in his despatch of the 28th of October 1868, No. 22, approved of these proceedings of your Government, in which the proposal was made to levy a rate for this purpose in Bengal.

6. I come, then, to the specific objection to this proposal that the Government of India is precluded from imposing special rates in Lower Bengal, because of the binding promises made to the landowners of that Province under the terms of the Permanent Settlement. In considering this question, I put aside for the moment every argument which turns upon the purposes to which the proposed rates or taxes are to be applied. On this point, there seems to be some doubtful reasoning used on both sides in the correspondence before me. Your Government repeatedly asserts the right of imposing local cesses for local purposes, implying that the purpose to which such a tax is devoted, affects the question of the right of the Government to impose it. Assuming the right to impose any given tax, the purpose to which it is applied may make all the difference in these two most important things,—*first*, the reasonableness, or even the justice, of imposing the tax; and *secondly*, the possibility of making that reasonableness and justice plain to the people who are to pay it. But if the right to impose the tax be absolutely denied, on the ground of a binding promise that no such tax should be imposed, then the purposes to which we may intend to devote the money can have no bearing on the question of our right to raise it.

7. But the question whether the Government of India has, or has not, the right to impose taxes upon land in Bengal, even for the general purposes of the Empire, has been ruled and decided in the case of the income tax. And yet that ruling was not, and could not, be arrived at by any mere construing of the words in which the promises of the Permanent Settlement were made. Those words did not contemplate such a case; and, to reach the general principles on which that case was ruled, it was necessary to go outside altogether of the four corners of the document in which the Permanent Settlement is recorded.

8. Your Excellency has, indeed, referred to Article VII. of that Regulation as indicating the reservation of a power large enough to include that which is now disputed. I am bound to say, however, that this argument does not appear to me to be satisfactory. It is true, indeed, that under that Article the Government of India retained a right of enacting such Regulations as it might think necessary for the "protection and welfare" of the various agricultural classes. It is true also that we may argue, in all good conscience, that the support of roads and of Vernacular Education are necessary for the "welfare" of those classes. But the whole context of the passage indicates, in my opinion, that the power intended to be reserved under that Article was the power of regulating and limiting the power of the zemindars over their tenantry. It is, indeed, obvious that in the exercise of such a right the revenues of those zemindars might have been affected to a far greater extent than they can be affected by rates for the making and maintenance of roads or of schools. But if the question be whether the right to levy such rates, in addition to the "jumma," was contemplated or thought of at the time, I am compelled to believe that no such idea was in the mind of the Government of Lord Cornwallis in 1793.

9. But if the words of the Permanent Settlement do not rule the case in favour of the power now claimed by your Government, neither do they rule it in a sense adverse to that claim. The great object and purpose of that settlement,

as clearly defined and described in Article VI., should govern our interpretation of its terms. That object was—as this Article explains at length—to put an end for ever to the practice of all former Governments of altering and raising the land tax "from time to time," so that the landholder was never sure, for any definite period, what proportion of the total produce of the soil might be exacted by the State. This uncertainty was to be set at rest for ever. The "public demand" was to be fixed and permanent. Such was the promise: and its scope and object were clearly explained in the concluding exhortation addressed to the landowners, that "they would exert themselves in the cultivation of their lands, under the certainty that they would enjoy exclusively the fruits of their own good management, and that no demand would ever be made upon them or their heirs and successors, by the present or any future Government, *for an augmentation of the public assessment in consequence of the improvement of their respective estates.*"

10. These last words illustrate the whole force of the argument, which has been admitted to be just in the case of the income tax. It must be remembered that none of the pleas which, in the correspondence before me, are urged in favor of the right of the Government to levy rates for roads or for education, could have been put forward in favor of the right to impose an income tax on the landholders of Bengal. The income tax was not "local" in any sense. It was not applied to special purposes intended for the immediate benefit of the agricultural classes. It was, in the fullest sense of the words, a "public demand," levied over and above the public demand which, under the Permanent Settlement, had been fixed "for ever." It went directly into the Imperial Exchequer, and was applied precisely as the land revenue and all the imperial taxes were applied. But there is one thing which that tax was not: it was not an increase of the public demand levied upon the zemindars "in consequence of the improvement of their estates." It was levied upon a wholly different principle, and in respect of a wholly different kind of liability. One index and proof of this difference lay in the fact that, although this "public demand" was made upon those to whom the promises of the Permanent Settlement had been given, it was made upon them only in company with other classes of the community, and with no exclusive reference to the source from which their income was derived.

11. But when the principle of this distinction is clearly apprehended, it becomes obvious that an income tax is not the only form of "public demand" to which that principle applies. The same essential distinction may be established between the original assessment which was fixed "for ever," and every kind of tax, or cess, or rate, which is levied irrespective of the increased value or produce of land, and with no view to a re-adjustment of the proportions in which the produce of the soil is divided between the State and the owners of land holding under it. The best method of marking this distinction, and of making it clear, is to provide that such cesses should be laid upon the owners of land only in common with other owners of property which is of a kind to be accessible to the rate.

12. It has been contended that the rates levied in other Provinces of India are essentially distinct in principle from the rates which it is proposed to levy in Bengal. The argument appears to be, that in other Provinces of India the local rates are simply so much addition to the ordinary land revenue—an addition which is there legitimate, because the Government had not in those Provinces debarred itself by positive engagements from increasing the land assessment. This appears to be only another form of stating the argument already dealt with, which is founded on the terms of the Permanent Settlement. But the distinction thus drawn between the character of such rates when levied in Bengal and the character of similar rates when levied elsewhere, is a distinction which I concur with your Excellency in considering to be unsound. Whatever character may be assigned to these rates as a matter of mere verbal definition, they were unquestionably intended by the Government, in all the Provinces in which they have been raised, to be in addition to the land revenue, and not a part of it. This separation was expressly defined and marked in the proceedings of the Government of Bombay before any special legislation had been passed upon the matter. In the Resolution of that Government, dated

March 9th, 1860, the Superintendents of Survey were directed, "after fixing the assessment of a District," to add the rate "over and above the amount which on other considerations they may deem appropriate." Although incorporated with the land revenue in respect to the mode of levy, as being the most convenient, it is again in the same sentence explained to be "calculated over and above the ordinary assessment;" and Sir Charles Wood, in his despatch of May 25th, 1861, in which he dealt with the proposal, speaks of it as a proposal "for the imposition of a school rate and road cess in addition to the revised rates of land assessment which have been, and still are, in course of introduction."

13. Her Majesty's Government are therefore of opinion that it cannot be said with justice that to impose rates in Bengal would be to impose a special tax on that Province which is not imposed on other parts of India.

14. It is true that, in making some of the more recent land settlements in various Provinces of India, the Government has given notice that in fixing the assessment of land revenue for 20 or 30 years, it retained the power of imposing some additional rates for local expenditure. In the Bombay Act of 1865,* a notice to this effect has been made permanent by law. But this notice, so far from indicating that such rates are to be considered as part of the land revenue, is, on the contrary, a distinct indication that they are to be considered separate. The notice was issued because the Government was warned by the misunderstanding which had arisen in Bengal, and because it knew that precisely the same misunderstanding might arise under any settlement—the misunderstanding, namely, that during the term for which such settlement might be made the Government absolutely surrendered all power of additional taxation upon the land. But, although, under these circumstances, it was expedient to prevent such misunderstanding in future by a warning explanation to all with whom new settlements might be made, Her Majesty's Government do not admit that, where no such notice has been given, no rates can be levied in addition to the assessment. This, indeed, would involve a result in direct antagonism with the principle laid down in this despatch, and sanctioned in the case of the income tax. That principle is, that any extra taxation or rating levied from the agricultural classes over and above the land revenue, must be imposed as equally as possible upon all holders of property accessible to the impost. But if those holders of landed property are to be free from the tax to whom notice was not given at the time of settlement, the rates cannot be imposed equally, but, on the contrary, there must be an extensive system of exemptions. And those exemptions must especially include the holders of inams, of alienated villages, and all permanent tenures either rent-free or at small fixed quit-rents. The guarantee under which these persons hold their lands, free from any increase of the land assessment, is a guarantee quite as binding as the promise given to any holder in Bengal. But the practical injustice of exempting inamdars, or the owners of alienated villages, is as apparent as the departure it involves from the principle of making rates equal and general in their incidence. It must always be remembered, in matters of taxation, that when a given work is to be done, and a given amount of expenditure is required to do it, the exemption of any class is simply an aggravation of the burden on all other classes who are not exempt. And in this case those would be the exempted classes who have been otherwise most favored by the State, and those would be the classes bearing an aggravated burden who already contribute most to the public expenditure. Moreover, the holders of property thus exempted would derive equal, or indeed greater, benefit from the rates than the holders of property, who alone would be called upon to pay them. On these grounds, Her Majesty's Government feel that, in rejecting any claim to exemption from rates on the part of those who did not expect to pay them at the time of the land settlements, or on the part of those who hold under permanent tenures whether of one kind or another, they are not adopting any more verbal plea in order to justify a foregone conclusion which otherwise might be difficult of defence. They are satisfied, on the contrary, that they are rejecting a claim founded solely on a mistaken interpretation of the mere wording of a particular document, and which, if admitted, would lead to results at once anomalous and unjust.

* Act I. of 1865, section 29, clause 1.

15. It is the more important that a final decision on this matter should be arrived at, because it must be admitted that the misunderstanding on which such claims to exemption are founded is a misunderstanding which has been long prevalent, and has imparted a character of doubt and hesitation to the language and to the acts of the Government, both in India and at Home. There has been, on the one hand, a feeling and a conviction of the essential distinction between the ordinary land revenue and the rates which it was desired to levy, whilst, on the other hand, there has been a difficulty in defining that distinction, and a fear lest it should be found to be incapable of explanation to the people. Hence there has been a variety of suggestions for evading the difficulty, by raising the required amount of money through a house tax, or a license tax, or some other tax which could not be confounded with the land revenue, and respecting which, therefore, there could be no doubt of the right of the Government to impose it. But all these suggestions have, for various sufficient reasons, been rejected. The despatch of Sir J. Lawrence, of 22nd February 1867 (No. 9, Revenue Department), exhibits the embarrassment felt by the Government of India in this condition of affairs, and its anxiety lest rates on landed property should appear to the people to be a breach of faith. It is injurious alike to the Government and to the people that this condition of things should continue. The Government has nothing to conceal, and the people have nothing to fear or lose in the re-affirmation of the same principle as regards rating which has already been affirmed as regards the income tax.

16. An important step in the practical decision of this question has been taken in the passing of the Bombay Act No. III. of 1869. The special object of that Act is to raise "funds for expenditure on objects of local public utility and improvement," and for this purpose it imposes rates upon all holders of land, without making any distinction between those who received and those who did not receive a notice at the time of settlement. No exemption of any class of landholder is admitted. On the contrary, the holders of rent-free, of alienated villages, and of other permanent tenures are expressly subjected to the rates.

17. In view, therefore, of these various facts and considerations, Her Majesty's Government have now to intimate to your Excellency the conclusion to which they have come, after a careful consideration of a controversy which has now been going on for a long course of years. This conclusion is that rating for local expenditure is to be regarded, as it has hitherto been regarded in all the Provinces of the Empire, as taxation separate and distinct from the ordinary land revenue; that the levying of such rates upon the holders of land, irrespective of the amount of their land assessment, involves no breach of faith on the part of the Government, whether as regards holders of permanent or of temporary tenures; and that, where such rates are levied at all, they ought, as far as may be possible, to be levied equally, without distinction and without exemption, upon all the holders of property accessible to the rate.

18. So far I have been dealing only with the right of the Government to levy rates, and with the argument that this right had been parted with for ever under the terms of the permanent settlement in Bengal. I now proceed to consider the further question, which ought to be kept entirely separate, namely, the expediency and policy of exercising the legitimate power of the Government in imposing such rates in Bengal. Many arguments, which are entirely irrelevant in the discussion of right, become arguments of first importance on the question of policy. (1) The proportion which the existing land tax bears to the whole resources of the people on whom we propose to place new taxes; (2) the mode of levying them so as to reach fairly the different interests in the property to be assessed; (3) the machinery through which the levy is to be made; (4) the persons to whom the expenditure is to be entrusted; and (5) the special purposes to which rates are to be applied—all these are most important elements in the question of policy, perhaps even of justice. They cannot therefore be too carefully considered.

19. Adverting then to these matters in the order in which I have now enumerated them:—(1) it cannot be maintained that the people of Bengal are less able to afford such rates than the people of other Provinces of India. In so far as the permanent settlement makes any difference in this case, it is a difference

in their favor with respect to the other demands made upon them by the State. A large portion of the produce of the soil which, even at the most moderate assessment made elsewhere in India, would have been appropriated by the State, has been left in the hands of the various classes connected with agriculture, and has contributed to increase the general wealth and resources of the Province. The case, on this point, for the Government cannot be better stated than in paragraph 36 of the Lieutenant-Governor's letter to your Government, dated April 30, 1869:—"Owing to the operation of the permanent settlement, Bengal contains, scattered throughout the different classes of its population, many persons who have acquired more or less of an independence from the profits of the land surrendered by the Government in that measure." It is true that in the greater fruitfulness of indirect taxation and of some direct taxes in Bengal, as compared with other Provinces, the Government recovers some portion of the revenue which it has sacrificed in the form of land assessment. But this very fact testifies to the greater wealth of the people, and is a conclusive proof that they can bear, at least as well as the people of other Provinces, such special taxes as may be required for drainage, roads, and schools.

20. On the next point, (2) the mode of levying rates so as to reach fairly the different interests in the property to be assessed, I understand you to be fully impressed with the justice of providing that they should be levied as equally as possible, not only on all kinds of rateable property, but as equally as possible also upon the various classes who have various interests in that property. I observe that you contemplate the extension of the cess to towns and villages (paragraph 24). There is indeed no reason why the burden either of roads or of education should be thrown exclusively upon the agricultural classes, where other classes are equally interested in the expenditure and have property of a kind which can be made accessible to rates. How all this can best be done is a question which must be locally decided. The knowledge and ability possessed by the Lieutenant-Governor of Bengal, which are eminently displayed in this correspondence, give me confidence that, when the decision of Her Majesty's Government is announced, the measures consequent upon that decision will be directed with a careful regard to all the peculiar circumstances of the Province which is under his administration.

21. As regards (3) the machinery through which the levy of rates is to be made, and (4) the persons to whom the expenditure of them is to be entrusted,—it would indeed be most desirable if the local character of these rates could be emphatically marked by committing both the assessing of them and the application of them to local bodies. If the people were farther advanced in the knowledge and appreciation of those advantages which we desire to confer upon them, there would be no need of interposing the authority of the Imperial Government in regard to such matters as the making and maintenance of roads, of schools, and of sanitary improvements. In this case we might entrust the initiative in all such things to the people themselves. But, speaking generally, it may be said that the people have, as yet, neither the knowledge, nor the desire, nor the organization which could alone render it possible to rely exclusively upon their voluntary action. Nevertheless, when the authority of the Supreme Government has been exerted to prescribe as an obligation the performance of certain duties, it may be possible, and if possible it will certainly be desirable, to carry the people along with us through their natural native leaders, both in the assessment and in the expenditure of local rates. The importance of doing so has been acknowledged in the measures adopted for regulating the management of similar rates in other Provinces of India, and it would be, in the belief and hope of Her Majesty's Government, an undeserved reproach to the many wealthy and intelligent Native gentlemen of Bengal, to suppose that a similar course may not be successfully pursued as regards the people of that Province.

22. Closely connected with the local character which may belong to rates arising out of the mode of assessment and of administration, comes (5) the local character which depends on the purposes to which they are to be exclusively applied. I have already pointed out that the purposes to which a tax may be applied cannot be considered as affecting the abstract right of the Government to

exact it. But assuming this right, everything as regards the policy, and even the justice, of the rates now in question turns upon the manner in which they are to be expended. It is, of course, essential that the Government of India should be itself satisfied that it is breaking no faith in any measure it may take; but next to the necessity of this assurance is the necessity, or at least the great importance, of making the same conclusion plain to the apprehensions of the people. For this purpose it is, above all things, requisite that the benefits to be derived from the rates should be brought home to their doors,—that these benefits should be palpable, direct, immediate.

23. The making and improving of wells, tanks, and other works of irrigation affecting comparatively small areas of land, are the operations which probably best comply with these conditions. But roads are a first requisite in the improvement of every country, and, although as yet they may not be equally valued by the people, it is the duty of the Government to think for them in this matter, and the benefits they must derive will yearly become more apparent to themselves. It is due, probably, to these considerations that the Lieutenant-Governor of Bengal has waived his objection to local rating in Bengal for making and maintaining roads (admitting indeed that for this purpose a cess upon landed property is necessary), although, as regards the argument founded on the Permanent Settlement, no clear distinction has been drawn between the right of the Government to levy rates for roads, and its right to levy rates for education. Her Majesty's Government can have no doubt that, as elsewhere, so in Bengal, the expenditure required for the education of the people ought to be mainly defrayed out of local resources. This, however, is precisely the application of rates which the present condition of the people may render them least able to appreciate. I approve, therefore, of your Excellency proceeding with great caution in this matter. The circumstances which have just compelled you, for the general purposes of the empire, to increase the tax upon incomes, would appear to render such caution more necessary at the present moment. I do not construe the concluding words of the 6th paragraph of your despatch as suggesting that rates nominally levied for one purpose should afterwards be applied to another, because I am sure that your Excellency must be as fully alive as Her Majesty's Government to the necessity of maintaining perfect openness in our dealings with the people of India, especially as regards imposts which are comparatively new, and which seem to be so much contested. I do not doubt, therefore, that, in the paragraph referred to, you intended only to suggest that, until the system, machinery, and incidence of local rating in Bengal has been satisfactorily established, so much only should, in the first instance, be raised as is required for roads. Her Majesty's Government approves of this precaution, and they are of opinion that any addition to the cess should be duly and separately notified to the people, with a full explanation of the special purposes to which it is to be applied.

24. I have now communicated to your Excellency the views of Her Majesty's Government on the matter which you have referred for their decision. Of the great importance of the subject in a financial point of view I have already spoken. If it were indeed true that in the land revenue raised from the agricultural classes the Government of India took so much from the resources of the people as to leave them unable to bear any additional burdens, then, indeed, it would be as impolitic to impose "local rates" as to impose any new imperial tax. In this point of view, it matters nothing whether the land revenue be in the nature of a "rent" or in the nature of a "tax." So far as regards the ability of a people to bear fresh burdens, it is the same thing whether they be over-rented or over-taxed. But Her Majesty's Government are satisfied that this is not the condition of things with which we have to deal. It is notorious that the direction in which the Government of India has been proceeding in its land assessments has been the direction of making those assessments more moderate, and of eliminating altogether the element of uncertainty,—of arbitrary variation,—which, more than anything else, impeded the progress of agricultural improvement. The whole discussion, which is now before me, has arisen out of the fact that in Bengal the Government went so far in giving effect to this policy as to declare the land assessment to be "fixed for ever." The same principle is involved, and the same policy is expressed

in the long and definite periods of time for which, in other parts of India, the assessments are now equally fixed, and during which they cannot be re-adjusted in favor of the State. This policy is a wise one, even though the treasury should appear in the first instance to be a loser by it. The true wealth of a wise and just Government lies in the growing wealth of its people; and the fiscal system which most encourages the accumulation and enjoyment of capital in private hands must in the long run be the most profitable to the State. But there is one condition attaching to this argument, without which it ceases to be applicable to a people situated as the people of India now are. The growing wealth of the country must be made accessible to such demands as arise from time to time out of the duty and the necessity of our applying to its condition the knowledge which belongs to a more advanced civilization than its own. We are spending the imperial revenues of India conscientiously for the good of its people. If there are some great improvements in their condition which we cannot afford to undertake, we must not be precluded from throwing the cost of such improvements upon those growing resources of which we heartily desire to see that people in the enjoyment, but which are due in a great measure to the government we provide.

25. There is yet one other aspect in which the question of local rating for special purposes must be regarded,—an aspect in which it assumes an interest and importance distinct altogether from its bearing on finance. Local rating, although it may be imposed in the first instance by imperial authority, must become a powerful means of further educating the people in an intelligent management of their own affairs. I approve entirely of the anxiety shown by the Government of Bombay in its first action in this matter, and expressed also by the Supreme Government under Sir J. Lawrence, that, as far as possible, the assent and concurrence of the rate-payers should be secured, both in the levy and in the management of the rates. I commend this wise policy to your careful consideration, in communication with the Lieutenant-Governor of Bengal and the subordinate branches of his administration.

I have the honor to be,

MY LORD,

Your Lordship's most obedient, humble Servant,

ARGYLL.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

IRRIGATION OPERATIONS OF FUSL KHURREEF IN THE NORTH-WESTERN PROVINCES UP TO 30th APRIL 1870.

CANAL DIVISIONS.	Water distributed during April 1870: Depth in Canal at Regulating Gauge. Full supply, feet.	Actual throughout, feet.	Gross Consumption, cubic feet, per second. Estimated full discharge.	Actual average throughout.
Ganges Canal. Northern ..	9·00	7·77		277
Meerut ..	6·80	6·49		1,317
Boolundshuhur ..	5·75			
Futtehgurh ..	6·50	5·79	5,585	361
Allygurh ..	6·00	5·20		766
Etawah ..	4·80	2·50		593
Cawnpore ..	6·00	4·40		792
			Total ..	4,106
Eastern Jumna Canal ..	..	3·91	..	862
Doon Canals ..	..	..	..	89
Rohilkhund Canals ..	..	..	..	286
Total ..	..	..	..	5,343

Navigation Return, Ganges Canal. Nature of Traffic.	Up. Mds.	Up. No.	Down. Mds.	Down. No.	Total Up and Down. Mds.	Total Up and Down. No.
Grains—						
Wheat ..	..	..	400	..	400	..
Moong ..	1,391	..	..	..	1,391	..
Mussee ..	116	..	..	..	116	..
Jowar ..	375	..	..	..	375	..
Rice ..	957	..	..	..	957	..
Gram ..	3,324	..	..	..	3,324	..
Muckha ..	300	..	..	..	300	..
Urhur ..	950	..	..	..	950	..
Kootoo ..	290	..	..	..	290	..
Total ..	7,613	..	400	..	8,013	..
Cotton ..	..	..	11,117	..	11,117	..
Oil-seeds ..	6	..	1,590	..	1,596	..
Salts ..	180	..	1,522	..	1,702	..
Metals ..	5,482	..	2,067	..	7,549	..
Building Materials ..	260	..	13,465	..	13,725	..
Miscellaneous Goods ..	3,094	..	3,198	..	6,292	..
Firewood ..	..	..	15,577	..	15,577	..
Bamboos ..	..	..	..	406,352	..	406,352
Bullocs ..	..	..	..	8,620	..	8,620
Kurrees ..	..	1,224	..	472	..	1,696
Logs ..	..	3	..	119	..	122
Miscellaneous Timber ..	..	395	..	349	..	744
Passengers ..	..	..	..	522	..	522
Total ..	17,145	1,632	48,936	416,434	66,081	418,066

Land Irrigated (approximate). Zillah.	Acres.
Saharunpore ..	6,868
Moozuffernuggur ..	16,012
Meerut ..	25,929
Boolundshuhur ..	9,207
Allygurh ..	10,480
Mutira ..	1,875
Agra ..	94
Etah ..	1,938
Mynpoorie ..	2,307
Futtehgurh ..	*
Etawah ..	5,334
Cawnpore ..	2,233
Dehra Doon ..	984
Terai ..	102
Bareilly ..	1,915
Jhansie ..	61
Total ..	85,339

Rain-fall. Total from 1st to 30th April 1870.	Average of ten previous years for the same period.
0·4	0·5
0·3	0·4
1·3	0·5
0·3	0·4
..	0·3
1·1	0·2
0·4	0·1
..	0·1
0·2	0·1
..	0·09
0·5	0·1
..	0·1
2·3	0·8
0·3	0·3†
..	0·3
..	0·1
..	..

REMARKS.

The mean volume of the Ganges Canal passing the Roorkee gauge during the month, was 4,535 cubic feet.

The volumes discharged by the canal were as follows :—

Tail, Etawah Branch ..	38 cubic feet.
Escapes ,, ,, ..	155 ,, ,,
Tail, Cawnpore ,, ..	236 ,, ,,
Escapes ,, ,, ..	No returns.
Total ..	429 cubic feet.

The Cawnpore and Etawah Branches have alternate weeks of high and low supply. The gauge readings show the mean of the month.

It has been impossible to estimate the supply of Meerut and Boolundshuhur Divisions, as owing to a necessary change of management, the Dasnah gauge has become the ruling gauge for Boolundshuhur, and at present there are no authentic discharges for various readings of this gauge.

The chief irrigation of the month was sugar-cane, and indigo "palev," and towards the end of the month early rice.

On the Eastern Jumna Canal the supply was quite equal to the demand; sugar-cane, indigo, and early rice being the crops irrigated. Rain fell in the Saharunpore and Moozuffernuggur Districts on the 29th and 30th of the month.

* No returns. † Average for past six years.

ALLAHABAD;
The 23rd May 1870.

W. G. ROSS, *Lieut., R.E.,*
Asst. to Chief Engineer, Irrigation Works, N.W.P.

COMPARATIVE ABSTRACT OF TRAFFIC ON INDIAN RAILWAYS FOR THE QUARTER ENDING 31st MARCH 1870.

	East Indian.				Eastern Bengal.		Calcutta and South-Eastern (State) Railway.		Oudh and Rohilkhand.		Punjab.		Delhi.		Madras.				Great Southern of India.		Conjeveram Tramway.		Great Indian Peninsula.		Bombay, Baroda and Central India.		Sindh.		Total of all Lines.	
	Main Line.		Jubbulpore Line.												South-West Line.		North-West Line.													
	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£		£	£	£	£	£	£	£	£	£	£	£
Total earnings	718,404	709,439	36,986	30,924	41,869	43,006	2,023	2,238	6,572	5,789	27,523	29,540	58,748	30,726	97,250	94,823	30,491	23,086	17,330	16,346	767	1,024	510,207	499,958	142,436	130,409	19,779	16,804	1,710,385	1,634,103
Mean mileage open	1,131	1,131	223	223	113	113	28	28	42	42	246	246	284	174	492	492	215	185	168	168	19	19	1,063	874	312	307	106	107	4,442	4,109
Average receipt per week ...	55,262	54,572	2,845	2,379	3,221	3,308	156	172	505	445	2,117	2,272	4,519	2,363	7,481	7,294	2,345	1,776	1,333	1,257	59	79	39,247	38,458	10,957	10,031	1,521	1,292	131,568	125,700
Average receipt per week per mile open	48·8	48·2	12·8	10·7	28·5	29·2	5·6	6·1	12·0	10·6	8·6	9·2	15·9	13·5	15·2	14·8	10·9	9·6	7·9	7·5	3·1	4·2	36·9	44·0	35·1	32·6	14·3	12·0	29·6	30·6

GOVERNMENT OF INDIA.

LEGISLATIVE DEPARTMENT.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Tuesday, the 7th June 1870.
The Council adjourned to Tuesday, the 14th June 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

SIMLA,
The 7th June 1870.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Tuesday, the 14th June 1870,
The Council adjourned to Tuesday, the 21st June 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

SIMLA,
The 14th June 1870.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Tuesday, the 21st June 1870,

PRESENT;

His Excellency the VICEROY and GOVERNOR GENERAL of India, K.P., G.C.S.I., *Presiding*.
His Excellency the COMMANDER-IN-CHIEF, G.C.B., G.C.S.I.
The Hon'ble JOHN STRACHEY.
The Hon'ble SIR RICHARD TEMPLE, K.C.S.I.
The Hon'ble J. FITZJAMES STEPHEN, Q.C.
The Hon'ble B. H. ELLIS,
Major-General the Hon'ble H. W. NORMAN, C.B,
The Hon'ble F. R. COCKERELL,

MADRAS DISTRICT MUNSIFS' BILL,

The Hon'ble MR. COCKERELL moved for leave to introduce a Bill to consolidate and amend the laws relating to District Munsifs in the Madras

Presidency. He said that the primary object of the proposal to legislate in this matter was the extension of the pecuniary jurisdiction of the District Munsifs from one thousand rupees, to which amount it was limited under the existing law, to two thousand five hundred rupees. The pecuniary limit of the jurisdiction exercised by the corresponding class of Civil Courts was, in the Bengal Presidency, one thousand, and in Bombay, five thousand rupees.

The proposed increase was not proportionately greater than that recently accorded to the Bengal Munsifs by Act XVI of 1868.

It was advocated by the High Court and approved generally by the Judges of the principal Civil Courts in the Madras Presidency.

Moreover, looking to the fact that the pecuniary jurisdiction of the District Munsifs of Madras had undergone no change since 1833, and that, during the period that had since elapsed, there, as elsewhere, the character of this class of Courts had vastly improved, the propriety of the extension now contemplated could not be doubted.

It was also proposed to consolidate the law relating to District Munsifs, now spread over several local enactments, and this part of the scheme had necessitated the reference to this Council of what was in itself, as the title of the Bill imported, a purely local measure; for the process of consolidation involved the re-casting of some of the provisions of existing enactments affecting the jurisdiction of the High Court, and thus placed the proposed legislation beyond the competency of the local legislature.

The Bill which had been prepared by the Madras Government, dealt solely with the law relating to District Munsifs. As it was necessary to refer the proposed legislation to this Council, he (MR. COCKERELL) thought that the scope of the Bill might have been advantageously enlarged by extending the work of consolidation to the entire law relating to the constitution and jurisdiction of all the Civil Courts of the Madras Presidency, subordinate to the High Court.

A consolidated enactment of this kind, in reference to the Civil Courts of the Bombay Presidency, was passed by this Council last year. The expediency of applying a similar measure to the Madras Presidency, now that the opportunity for it had arisen, appeared to be so obvious as to need no argument. If the Bill was eventually referred to a Committee, he (MR. COCKERELL) would certainly advocate its extension in the direction which he had just suggested.

The Motion was put and agreed to.

CUSTOMS DUTIES EXEMPTION BILL.

The Hon'ble SIR R. TEMPLE moved for leave to introduce a Bill to enable the Government of India to exempt goods from customs duties. He said that large quantities of piece goods and other merchandize were imported into British India and soon after exported to foreign territory.

In order to encourage the use of our ports as *entrepôts*, and for other reasons, it was convenient that the Government of India should have the power to exempt wholly or in part from export duty goods which had paid import duty.

But to authorize such exemptions in the face of the Indian Customs Duties' Act, and of the declaration in section one hundred and thirty-seven of the Consolidated Customs' Act (VI of 1863), he (SIR R. TEMPLE) was advised that legislation was necessary.

The Motion was put and agreed to.

BANK OF BENGAL DIRECTORS' BILL.

The Hon'ble SIR R. TEMPLE also moved for leave to introduce a Bill to enable the Directors of the Bank of Bengal to act by a quorum. He said that the Act for regulating the Bank of Bengal, No. IV of 1862, declared that the business of the Bank should be managed by nine Directors, but did not expressly authorize such business to be managed by a less number. A doubt had accordingly been raised as to whether the nine Directors could legally act by a quorum. The object of this Bill was to remove that doubt, and to validate acts which might be deemed invalid by reason of their having been done by less than the whole number of Directors.

The Motion was put and agreed to.

COURT FEES ACT AMENDMENT BILL.

The Hon'ble MR. COCKERELL moved for leave to introduce a Bill to amend two clerical errors in the Court Fees Act.

He said that the first and most important of these errors occurred in section fifteen, the words "plaint or memorandum of appeal" having been inserted in the seventh line in place of "application."

That the latter word was intended to be used was clear from the context, for the word "other" in the following line of the same section was only intelligible on the hypothesis that the clause had primary reference to some special "application." So obvious was this, that the clause might perhaps have been safely left as it stood to the construction which the Courts would put upon it, but for the circumstance that a literal acceptation of the words erroneously inserted would entail a not inconsiderable loss of revenue.

The provision of this fifteenth section found no place in previous enactments relating to Court Fees.

To discourage what was alleged to be a growing practice amongst the legal practitioners in the Civil Courts, viz., the presentation of applications for a review of judgment on frivolous or insufficient grounds, a special *ad valorem* fee was imposed on all applications for a review of judgment in lieu of the fixed fee chargeable on general applications to the Civil Courts, and which formerly obtained in the case of applications for review.

The provision of section fifteen was devised to prevent the enhanced fee working harshly in the case of well-grounded applications for review. It was intended thereby to recoup to the successful applicant the amount paid by him in respect of his application for review of judgment in excess of the fee chargeable on an ordinary application. The effect of the section as it stood, however, was to give back to such applicant, not the excess fee paid on the application, but nearly the fee paid on the institution of the plaint or appeal in relation to which his application for a review of judgment was successful, or about double the amount to which he was entitled.

The other error was to be found in Schedule I, No. 2, where the words "or memorandum of appeal" had been accidentally inserted. There was no appeal in suits for possession under the Limitation Act (XIV of 1859), such appeal being barred by Act XXIII of 1861, section 26. The words referred to, therefore, were mere surplusage, but they suggested an apparent inconsistency with other enactments, and it was therefore desirable that this opportunity should be taken to excise them.

The Hon'ble MR. STEPHEN regretted that it should be necessary to put so trifling an Act on the Statute-Book. He thought the Executive Government should be empowered to correct such clerical errors by Notification in the *Gazette of India*.

The Motion was put and agreed to.

OUDH TALUQDARS' RELIEF BILL.

The Hon'ble MR. STRACHEY introduced a Bill to relieve from incumbrances the estates of taluqdárs in Oudh, and moved that it be referred to a Select Committee with instructions to report in a month. He said that

this Bill was introduced in fulfilment of the intention of the late Viceroy, and had been framed on the recommendation of the Chief Commissioner of Oudh, and at the request of the taluqdárs themselves. Many of those taluqdárs were deeply in debt, and their estates were subjected to incumbrances so heavy, that they could not perform their proper functions as landholders. The Government considered that, for political reasons, it was expedient to take measures to protect those estates and to prevent their falling into the hands of money-lenders. The Bill resembled an Act which was passed in 1862 by the Bombay legislature, and which had been worked with much success. The Bill proposed to empower the Chief Commissioner, on the application of any distressed taluqdár, and with the previous consent of the Government of India, to vest the management of the taluqdár's estate in a Government officer. Suits against the taluqdár would thereupon be barred, his person would be freed from arrest, and his immoveable property from attachment, and, during the continuance of the management, his right to encumber or alienate would cease. The manager would receive the rents and profits and pay thereout the Government revenue such annual sum as might be necessary to maintain the taluqdár and his family, and the costs of necessary repairs and improvements. The residue would be applied in defraying the costs of management and in settling the taluqdár's debts and liabilities. Provision was then made for ascertaining those debts and liabilities, and, on their discharge, the taluqdár would be restored to the possession of his estate. The rest of the Bill contained the clauses necessary to give effect to the foregoing provisions.

The Bill referred only to the taluqdárs of Oudh, but MR. STRACHEY thought that it deserved consideration whether it might not be expedient to insert a clause authorizing the Government, under special circumstances, to make the Act applicable to the encumbered estates of great landholders in other parts of the country.

His Excellency THE PRESIDENT asked whether it was sufficiently clear that, on the appointment of the manager, the management of the whole of the taluqdár's land would vest in him?

The Hon'ble MR. STEPHEN said that the second clause of section three provided that the Chief Commissioner might by order vest in the manager "the management of the immoveable property of or to which the taluqdár is then possessed or entitled in his own right," and he (MR. STEPHEN) thought that this clearly meant the whole of the taluqdár's immoveable property; but if there was any doubt the matter might be cleared up by the insertion of a word or two in Committee.

The Motion was put and agreed to.

The following Select Committee was named:—

On the Bill to relieve from incumbrances the estates of taluqdárs in Oudh:—The Hon'ble Messrs. Stephen, Ellis, and Cockerell, and the Mover.

The Council then adjourned to the 28th June 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

SIMLA;
The 21st June 1870.

No. 25 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, JULY 2, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

HOME DEPARTMENT.

INTRODUCTION OF THE IPECACUANHA PLANT IN INDIA.

From J. MURRAY, ESQ., M.D., Inspector General of Hospitals, Upper Provinces, to the Private Secretary to the Viceroy and Governor General of India, Simla,—No. 277, dated Simla, the 5th October 1868.

THE success which has attended the introduction of the cultivation of cinchona in India leads to the desire for the introduction of other valuable medicines, the product of similar climates to that in which cinchona is found.

2. Ipecacuanha is the most valuable medicine in the cure of dysentery. It was originally introduced in Europe in 1684 as a specific against dysentery, and has been used in India since 1830. It is the medicine in which I have placed most confidence since 1833 in dysentery, and in many children's diseases, where calomel was formerly used, and in the earliest stages of acute inflammation of the liver.

It is equally valuable in the treatment of the diseases of Europeans and Natives, and there is no indigenous substitute of equal power grown in India.

3. Ipecacuanha is expensive, but it is liberally supplied to the hospitals of the European and Native troops, to the jails, and also in a more limited manner to the charitable dispensaries.

4. The exhibition of the remedy of late years in very large doses has been found of the greatest advantage in dysentery and hepatitis, and its more general use is to be anticipated, but a deficiency of the supply may be anticipated, or at least an increase in the price, as it is stated by Pereira* "that as no care is taken in the cultivation of the plant in Brazil, it has become scarce around the principal towns."

* Pereira's Materia Medica, vol. 2, page 56.

5. The plant grows wild in low shady places in a hilly tropical climate in Brazil. It belongs to the same family as cinchona and coffee. These plants are found to flourish in India, and there can be no doubt but that a suitable habitat exists in many parts of India for the allied plant—ipecacuanha.

6. I would beg to submit to the consideration of Government, whether it would not be desirable to introduce the cultivation of ipecacuanha in an analogous manner to that of cinchona. It would lessen the expense of the supply now required by Government, and it would render a most valuable remedy available to the Natives all over India in the same manner as quinine, it is hoped, soon will be, whose expenditure has hitherto been limited by the expense.

Memorandum Surgeon-Major by T. FARQUHAR, M.D., on Ipecacuanha,—dated Simla, the 6th October 1868.

IT is hardly necessary to say that one of the severest and most fatal diseases met with in India, as in most tropical climates, is undoubtedly dysentery, the successful treatment of which was, until lately, one of the most difficult tasks set before medical men in the East.

The powdered root of ipecacuanha, a small shrub grown in Brazil, and imported *viâ* Europe into India by Government, has long been used by English Medical Officers in the treatment of dysentery in Civil and Military hospitals here.

Its full value, however, has only of late years been understood; for, though originally (200 years ago) given in large doses of 30 or 60 grains, it was used in very much smaller doses, till, in 1858, Assistant Surgeon Docker, a Medical Officer of the British Army serving in Madras, re-introduced the use of 30 grain or half drachm doses.

This has caused quite a revolution in the treatment of dysentery, which, when of the ordinary form, and seen early in the attack, can be cured with as much certainty as ague can by quinine.

The terribleness of the disease for which ipecacuanha is so useful in India may be imagined from the fact that, during the last 10 years, 31,804 English soldiers have been attacked with this disease in Bengal, of whom 2,655 died; while in England, during the six years ending in 1864, only 739 cases occurred in an army double the size, and only 19 deaths.

But the statistic that speaks in favor of ipecacuanha is the decreased death-rate since its use in its most efficient form, viz., in large doses in India.

From Tables prepared by Dr. H. Macpherson, Deputy Inspector of Hospitals, on the vital statistics of the European army for eight years ending 1853-54, there were 21,221 cases of this disease (dysentery) in the then comparatively smaller army in Bengal, with 2,198 deaths.

This gives a proportion of about 103 deaths per 1,000 treated, that is to say, of more than one out of every 10 men attacked died. Again, in the first half of the past 10 years, the men died at the reduced rate of 93 per 1,000, or less than one in 10. This last was while a knowledge of the use of ipecacuanha was gaining ground among the Medical Officers of the English army. When, however, the remedy came into much more extended use during the last five years of the decade, the death-rate was reduced to 57 per 1,000, that is, one man in about 20 only died when attacked with dysentery,—a most gratifying improvement on the former death-rate of more than one in 10.

In acute dysentery 91·8 per 1,000.
In chronic dysentery 172 per 1,000;
or about one in six.

DEATHS FROM DYSENTERY.

Year.	*No. of deaths.*
1858	1,188
1859	562
1860	229
1861	165
1862	114
1863	121
1864	66
1865	83
1866	59
1867	68

No doubt, part of this improvement is to be attributed to the invaliding of sick soldiers to England for change of air, as the highest death-rate in former years was from the *chronic* form of the disease. The rapidity of cure effected by the "ipecacuanha" prevents, however, the acute disease from running into the chronic form, which is now comparatively rare.

With Natives the success of these large doses, in ordinary uncomplicated dysentery, is equally certain and complete, and they too suffer severely from the disease from one end of the Empire to the other.

Those of them cared for by Government, as the Native army and prisoners, are freely supplied with ipecacuanha, but, except at the Government Dispensaries, the mass of the population has no opportunity of benefiting by its use.

It would therefore be a most valuable boon to the country if a number of plants were imported and its cultivation spread, as has been done with cinchona. It is quite a jungle plant in Brazil, and may be expected to be the same in India, so that little expense need probably be incurred in its propagation; and when it finds its way into the hands of the Native physicians and druggists, its market value will secure its being sufficiently cared for.

Demi-official from Surgeon-Major P. W. Ross, Surgeon to the Commander-in-Chief, to Surgeon-Major T. FARQUHAR, M. D.,—dated Simla, the 5th October 1868.

CONSIDERING that quinine and ipecacuanha are both indigenous to South America, and that the cinchona tree has been introduced into India with much success, it seems extraordinary that it should not have occurred to any one before to have introduced the ipecacuanha plant also.

The great saving of life under dysentery attacks in recent years must show the presence of some active remedy in the treatment of the disease. Such a remedy is the administration of ipecacuanha in large doses. From my knowledge I should say that even now the remedy is not used in India as efficiently and completely as it might be, especially by officers new to the treatment of the complaint in this country; but its use by those who have studied its action has manifestly affected the average of the annual death-rate.

Professor Maclean, in a recent article on dysentery, says, that "mortality among Europeans from dysentery in Bengal, during the 42 years from 1812 to 1853-54, amounted to 88·2 per 1,000. During 1860, when large doses of ipecacuanha were given to the almost exclusion of other methods of cure, the mortality was 28·87 per mille." Again—

"In the Madras Presidency, under the old treatment, the mortality from the disease during 17 years was 71 per 1,000 treated; but when ipecacuanha was largely used, it fell to 13·5 per mille."

Dr. Ewart, in the 16th No. of the Indian Annals of Medicine, calculates that the decrease of mortality attributable to the substitution of large doses of ipecacuanha, in the treatment of tropical dysentery, amounts to no less than 46·60 per 1,000 to treated.

The 3rd Annual Sanitary Report for Bengal (1866), reviewing the recent history of dysentery, states, "the death-rate to cases treated has been reduced to less one-half of what it was. In 1859 it was 8·60 per cent.; in 1866 it had fallen to 4·19" (41·90 per mille).

I first learnt to use the remedy in large doses, and properly guarded so as to ensure its retention on the stomach, from a report of the Surgeon of the 7th Fusiliers at the Mauritius, written about 1855, and since 1858, I may say I have had large experience of its efficacy in the treatment of British officers, soldiers, women and children.

I consider ipecacuanha, in the treatment of dysentery as it occurs in the North-Western Provinces and in the Punjab, to be quite as much a specific as quinine is for the treatment of all malarious attacks; and from its being the agent for combating and subduing more rapid and mortal complaints than are caused by malaria, it may be said to be of more importance than quinine in the diminution of mortality. When it does fail to act thus specifically, it is either from there being organic complications, which must of themselves in the end prove mortal, or that the remedy has been administered without proper knowledge or precautions.

The use of ipecacuanha can fortunately never be so extended as that of quinine, for there are fewer occasions in which its application is called for; but I think it is nevertheless quite as important that its cultivation should be introduced into India.

Telegram from Home Secretary, Simla, to Secretary to Government, Madras,—dated the 13th October 1868.

HAS cultivation of ipecacuanha ever been tried at Ootacamund, if so, with what success?

No. 4122.—Copy by Post.

Telegram from Commissioner, Ootacamund, to Home Secretary, Simla,—dated the 17th October 1868.

THE Superintendent of Government Botanical Gardens here says the ipecacuanha has been tried, and the plants are growing well, but their introduction has been too recent to test the value of the medicine. I see that the bastard ipecacuanha *(asclepias curassavica)* grows in private gardens.

No. 4245, dated Simla, the 23rd October 1868.

Endorsed by the Home Department.

COPY, together with the papers noted in the margin, forwarded to the Government of Bengal with a request that Dr. Anderson, the Superintendent of the Botanical Gardens, may be asked his opinion as to the propriety of taking measures for encouraging the cultivation of ipecacuanha, and the nature of the measures which should be adopted.

Copy of a letter from Inspector General of Hospitals, Upper Provinces, to the Private Secretary to the Viceroy, No. 277, dated 5th October 1868.
Copy of a memorandum by Dr. Farquhar, dated 6th October 1868.
Copy of demi-official letter from Dr. Ross, to Dr. Farquhar, dated 5th October 1868.
Copy of telegram to Government, Madras, dated 13th October 1868.

From P. DICKENS, ESQ., Officiating Under Secretary to the Government of Bengal, to T. ANDERSON, ESQ., M.D., Superintendent of the Botanical Gardens, and in charge of Cinchona Cultivation in Bengal,—No. 5944, dated the 19th December 1868.

I AM directed to acknowledge the receipt of your letter No. 135, dated 8th instant, and in reply to state that the Lieutenant-Governor considers that the successful introduction of the ipecacuanha plant would be a valuable benefit. I am therefore to request that you will take every means in your power to develope it as suggested in paragraph 6 of your letter.

No. 5944.

COPY of the above letter, and of the one to which it is a reply, forwarded to the Government of India in the Home Department for information, with reference to endorsement No. 4245, dated 23rd October last, from that Department.

From T. ANDERSON, ESQ., M.D., Superintendent, Botanical Gardens, to the Under Secretary to the Government of Bengal,—No. 135, dated the 8th December 1868.

IN reply to your endorsement No. 5221, dated the 31st October 1868, I have the honor to state that it appears to me advisable that the cultivation of the ipecacuanha plant should be encouraged in India. The memoranda by Drs. Murray,

Farquhar, and Ross, which form the correspondence sent to me for perusal, prove how valuable ipecacuanha is in the treatment of the most prevalent and fatal of the diseases of tropical climates. Last year (1867) I received information from London that the drug is rising in value in the London market, where its wholesale price is nine shillings per pound. The drug (the root) is collected from plants growing wild in the Brazilian forests, and is nowhere cultivated as an article of trade. Thus the already high price is likely to increase. The plant is also becoming scarce from indiscriminate destruction, and by the greatly-increased consumption of the medicine which has occurred within the last four years. My attention had been directed to the introduction of the ipecacuanha plant into the Botanical Gardens of Calcutta for some years, but I was unable to procure any plants until April 1866, when one plant was sent to me by the overland route by Dr. Hooker, Director of the Royal Gardens, Kew. I am indebted to the care bestowed on the plant by Dr. George King, Assistant Surgeon of the Bengal Medical Service, during the voyage to India, for its having arrived in Calcutta in good health.

2. The ipecacuanha plant is so well known that it is not necessary to give a full account of it. For the purpose of this report, it will probably be sufficient to say that the plant belongs to the same sub-group of the natural order of plants called *rubiaceæ*, in which the coffee tree is placed by botanists. In habit the plant is, however, very different from the coffee. It grows in a diffuse semi-decumbent manner. It is found in moist shady valleys of the mountains of Brazil, and extends from 8° to 20° South latitude. The only part of the plant used in medicine is the annulated root. The appearance of the plants in the Botanical Gardens agree with this description, and the plant evidently loves shade and moisture with considerable heat, and, like most mountain plants, dislikes stagnant moisture in the soil in which it grows.

3. The plant of ipecacuanha originally introduced into the Botanical Gardens in 1866 is dead, but I now possess nine plants in this garden, which have been artificially propagated from the original one, besides five growing at the cinchona plantations at Darjeeling, to which place I sent one plant last year. I have thus **14 plants of ipecacuanha.**

4. I am confident that the cultivation of this valuable plant could be carried on as successfully as that of cinchona, provided suitable places are selected for the experiment. Until now, the plants in the Botanical Gardens and in the cinchona nursery at Darjeeling have been grown under the shelter of glass-frames, which are used here for the protection of the most delicate exotics, and at Darjeeling for the propagation of the cinchonas. I am unable therefore to say from experiment what climate will be suitable for the cultivation of the ipecacuanha plant; but it is probable that the successful cultivation of the plant in the open air in India will be attained in the valleys of the mountain ranges possessing a climate in which coffee, tea, and the most tropical species of cinchona flourish. The measures to be adopted to introduce the cultivation of the ipecacuanha plant are now that we possess the plant comparatively simple. The cultivation must pass through the same stages as that of cinchona. The aim of those to whom the cultivation is entrusted should be to increase the present stock as quickly as possible, and to enable them to do so all the appliances of horticulture should be used. After two hundred plants have been secured, experiments on a small scale can be made on the power of the plants to resist the adverse climatological conditions of the situation selected on purely theoretical grounds for the cultivation.

5. The ipecacuanha plant belongs to an order of plants in which a dimorphic condition of the flowers prevail, and as all the plants I possess are the produce of one plant, their flowers illustrate the floral characters of only one of those two forms. Unfortunately, this is the form with long stamens and a short style in which the power of producing seed even with a cross from the other form is least developed, and which, by itself, is very unfertile. The plant originally introduced flowered here, but bore no seeds. Plants possessing the other condition of the

essential organs of the flower will be obtained from the plants of ipecacuanha now in India by sowing every seed there may be procured from them. Some of these seeds will produce plants having the other character of the flower, and from the spontaneous crossing of these two forms of flowers, the highest state of fertility of the species will be the result. Until then the propagation must be carried on by cuttings, layers, and buds, according to the methods by which the enormous increase of cinchonas has already been obtained.

6. The cultivation of the ipecacuanha can be carried on at the cinchona nursery in Sikhim. (I do not say Darjeeling, for the plantations are 15 miles from Darjeeling, and at 2,000 feet above the sea in a narrow tropical valley.) At least for the next two years, the experiment will cost nothing, as the same agency by which I carry on the cultivation of cinchona will suffice for the propagation of the ipecacuanha plants. All that is required is the permission of Government to my using my best endeavours, with the means at my disposal, to inaugurate the cultivation of ipecacuanha in Bengal.

7. If this is accorded to me, I shall divide the plants I now possess between the Botanical Gardens in Calcutta and the cinchona plantations in Sikhim, with the view of the propagation of the plants being carried on vigorously in both places. The progress of the experiment would be referred to in my annual reports of the Botanical Gardens and the cinchona cultivation in Bengal.

8. The original enclosures returned.

From R. A. DALYELL, Esq., Acting Secretary to the Government of Madras, to A. P. HOWELL, Esq., Officiating Secretary to the Government of India,—No. 3193, dated the 22nd December 1868.

Progs. of Govt., 20th Oct. 1868, Nos. 309-310.
" " 22nd Dec. " " 367-368.

WITH reference to your telegram dated 13th October 1868, and that sent in reply by the Commissioner for the Neilgherries on the 17th idem, I am directed to forward, for the information of the Government of India, the accompanying papers respecting the cultivation of ipecacuanha on the hills.

Extract from the Proceedings of the Madras Government, Revenue Department, dated the 20th October 1868.

READ the following letter from the Commissioner for the Neilgherries, to the Secretary to Government, Fort St. George, Revenue Department,—No. 9, dated Ootacamund, the 17th October 1868.

YOUR telegram to inform the Home Secretary, Simla, whether the cultivation of ipecacuanha had been tried on the hills, and with what success, was received on the evening of the 15th.

2. I called upon Colonel Hadfield, Captain Beddome, Messrs. Ouchterloney, Broughton, and McIvor for information, and this day despatched the following telegram to Simla:—"The Superintendent of Government Botanical Gardens here says the ipecacuanha has been tried, and the plants are growing well, but their introduction has been too recent to test the value of the medicine. I see that the bastard ipecacuanha (*asclepias curassavica*) grows in private gardens."

3. Colonel Hadfield sent me a plant which he thought was the ipecacuanha plant, but which Captain Beddome pronounced to be the bastard or wild ipecacuanha (*asclepias curassavica*), and which he says is used as ipecacuanha, and grows in gardens up here, but grows better in the plains. He added that two other wild plants, namely, *Iylophora Vomitoria*, *Henridesmus Indicus*, answer the purposes of ipecacuanha, and grow well on the plains, but not here.

4. To Captain Beddome's knowledge the true ipecacuanha plant has never been introduced up here. He could not give me its botanical name, but said that it was a South American plant, and may possibly be one of the medicinal plants which Mr. McIvor or Mr. Broughton lately brought out.

5. Mr. Broughton is away somewhere. The Superintendent of Government Gardens (Mr. McIvor) gave me the information mentioned in my telegram to the Home Secretary.

Order thereon No. 2667.

THE Superintendent of the Cinchona Plantations will be requested to supply further particulars in regard to the plants stated to be growing in the Botanical Gardens. He should state whence they were obtained, how long they have been planted, &c.

(True extract.)

R. A. DALYELL,

Acting Secy. to the Govt., Madras.

To the Superintendent, Government Cinchona Plantations.
" Commissioner of the Neilgherries.

Extract from the Proceedings of the Government of Madras, Revenue Department, dated the 22nd December 1868.

READ again Proceedings of Government, 20th October 1868, No. 2667.

Read also the following letter from the Superintendent of the Government Cinchona Plantations, to the Acting Secretary to Government, Fort St. George, Revenue Department,—No. 200, dated Ootacamund, the 30th November 1868.

WITH reference to the order of Government, No. 2667, under date 20th October 1868, I have the honor to state that on the occasion of my visit to England, I procured from Dr. Hooker, of the Royal Gardens, Kew, two plants of the *cephaelis* ipecacuanha, and planted them in the gardens on my return in December last. Previously I obtained one plant, brought out by Mr. Broughton from Kew.

2. I think there can be no doubt that the plants we have got yields the true ipecacuanha of commerce.

3. These three plants have now been increased to nine, and in a few months I hope they will have attained such growth as to yield sufficient roots to test the quality of their produce.

Order thereon No. 3192.

ORDERED, that the foregoing papers be forwarded to the Government of India with reference to the telegram from the Home Secretary, dated 13th October 1868.

2. The Right Hon'ble the Governor in Council will be glad to receive a further report from Mr. McIvor in due course.

(True extract.)

R. A. DALYELL,

Acting Secy. to the Govt., Madras.

To the Commissioner for the Neilgherries.
" Superintendent of Government Cinchona Plantations.
" Board of Revenue, with G. O., 20th October 1868, No. 2667.

NO ORDERS.

From W. S. ATKINSON, ESQ., M. A., Acting Superintendent, Botanical Gardens, to the Assistant Secretary to the Government of Bengal,—No. 9, dated Botanical Gardens, the 24th April 1869.

WITH reference to your endorsement No. 1470, dated the 3rd instant, I have the honor to inform you that Dr. Anderson, who is now on his way to England, has in view the introduction of more plants of ipecacuanha for cultivation in India, and will, I know, endeavour to secure all available plants from the Botanical Gardens in Europe.

I may also state that Dr. Hooker, at the Royal Gardens, Kew, has been already communicated with on this matter, and will no doubt send any spare plants he has there under careful supervision. Seeds unfortunately cannot be had in Europe, all the plants in cultivation having as yet proved sterile, and they could only be secured by persons who have access to the native habitats of the plant.

It might be desirable that copies of this correspondence should be forwarded to Dr. Anderson, with an intimation that the Lieutenant-Governor of Bengal approves of the endeavours he is making for the promotion of the cultivation of ipecacuanha in India.

No. 1801, dated Fort William, the 7th May 1869.
Endorsed by the Government of Bengal.

COPY forwarded to the Secretary to the Government of India, Home Department, for information, in reply to his endorsement No. 1559, dated the 24th March 1869, and in continuation of my letter No. 1537, dated the 24th ultimo. A copy of the correspondence on the subject has been forwarded to Dr. Anderson in England, as suggested by Mr. Atkinson.

Nos. 2520—28, dated Simla, the 2nd June 1869.
Endorsed by the Home Department.

COPY forwarded to the Governments of Madras, Bombay, the North-Western Provinces, and the Punjab, to the Chief Commissioners of Oudh, the Central Provinces, British Burmah, and Coorg, and to the Resident at Hyderabad, for information, in continuation of No. 341—349, dated the 19th January last.

From the Government of India, Home Department, to His Grace the Right Hon'ble the DUKE of ARGYLL, K.T., Her Majesty's Secretary of State for India,—No. 12, dated Fort William, the 25th January 1870.

WE transmit for your information a copy of the papers noted in the annexed list, on the subject of the experimental cultivation of the ipecacuanha plant in India.

2. The only places in India where the plant has actually been grown are Ootacamund, the Calcutta Botanical Garden, and the Cinchona Plantation near Darjeeling; but there are other localities where, as your Grace will perceive from the enclosed correspondence, the experiment may, in all probability, be successfully tried. The stock of plants in India, however, is very limited, and we are desirous of procuring a sufficient supply both of plants and seeds for trial simultaneously at different places. Dr. Anderson, Superintendent of the Botanical Garden, Calcutta, now on leave in England, is known to have taken considerable interest in the cultivation, and to have had in view the collection of plants from the Botanical Gardens in Europe for transmission to India. We shall feel obliged by your Grace asking Dr. Anderson to submit a definite plan for procuring plants and seeds in sufficient quantities for experimental cultivation in different localities in India. We would also be glad to have his opinion as to the proper localities where the cultivation may be tried. And, lastly, we would suggest that if the Botanical Gardens of Europe cannot supply a sufficient number of plants, or if the difficulty about sterility, mentioned in the enclosure of the communication from the Government of Bengal, No. 1801, dated 7th May 1869, cannot otherwise be got over,

Her Majesty's Representative at the Court of Brazil, or the Consul at Rio Janeiro, might be invited to assist in the attainment of our object.

3. We would add that if Dr. Anderson is likely to be detained in England, he could probably make some arrangement under which some officer returning to India could take care of the plants during the voyage.

From Her Majesty's Secretary of State for India, to His Excellency the Right Hon'ble the Governor General of India in Council,—No. 27, dated India Office, London, the 20th April 1870.

I HAVE considered in Council the despatch from your Excellency in Council, numbered 12, Public, and dated the 25th of January, urging upon me the importance of introducing the ipecacuanha plant into India, and suggesting that Dr. Anderson, the Superintendent of the Botanical Gardens at Calcutta, now in this country, should be asked to submit proposals as to the best means for obtaining the object in view.

2. On the application of the Government of Bombay last year, I had already recognized the importance of introducing this valuable medicine; and the two plants received at Bombay having died, I had already taken steps for procuring others for transmission in July next.

3. I transmit to you the correspondence which has been held with Dr. Anderson on this subject, and I trust that, even should the other attempts fail, Dr. Anderson will still have a sufficient number of strong plants to send or to take back with him to India to secure the introduction and establishment of the plant.

4. It seemed to me that an application through the diplomatic agents of Her Majesty was not likely to be so successful as an application through commercial or scientific gentlemen. You will see from the accompanying memorandum by Mr. C. R. Markham, of which I transmit 15 copies, that he has written to Messrs. Miers and Co., of Rio, to Mr. Bramah, and to Dr. Otho Wucherer, to obtain roots of the plant.

5. The accompanying correspondence with Dr. Cleghorn and Dr. Balfour will show you that I have also enlisted the kind assistance of the Royal Botanical Gardens at Edinburgh besides the aid promised at Kew. I forward also herewith 70 copies of the memorandum on the propagation of the ipecacuanha plant prepared by Mr. McNab, of the Royal Botanical Gardens at Edinburgh. Dr. Christison and Dr. Balfour have likewise applied to Dr. Gunning, a medical practitioner at Rio, to assist them in obtaining plants and seeds.

6. I add to these documents the letters which have passed between Dr. Hooker and this Office on the supply of plants for Bombay.

7. You will learn from my despatch* to that Government of this day's date, that the plants destined for them will be retained at Kew, and two healthy plants will be sent to them from the Botanical Gardens at Calcutta.

* (Revenue) Forests, No. 4.

From H. MERIVALE, ESQ., C. B., Under Secretary of State for India, to the Superintendent of the Botanical Gardens, Calcutta,—dated India Office, London, the 3rd March 1870.

I AM directed by his Grace the Secretary of State for India in Council to transmit to you a copy of despatch which has been received from His Excellency the Governor General of India in Council, dated 25th of January, No. 12, Public, with

its enclosures, on the question of the introduction of the genuine ipecacuanha plant into India.

You will perceive that His Excellency has requested the Duke of Argyll to call upon you for a definite plan for procuring plants and seeds in sufficient quantities for experimental cultivation in different localities of India. His Grace will be glad therefore to receive from you any suggestions as to the best method of executing the wishes of the Government of India.

I am at the same time to acquaint you that, in consequence of a similar application from the Government of Bombay, this Department has been in communication with Dr. Hooker of Kew, and Dr. Balfour of Edinburgh, as to the best means of obtaining ipecacuanha plants for transmission to India.

In a letter received from Dr. Balfour, it has been suggested by Mr. McNab, who has successfully propagated some plants in the Royal Gardens at Edinburgh, that the readiest and surest method of obtaining plants would be by the transmission of rhizomes packed in sphagnum moss.

There would be no objection to try this plan, as well as the transmission of plant in Wardian cases, and also of seeds securely packed. Some might also be sown in the cases before they are closed up, provided that an agency, which could be relied on to obtain the genuine plant, might be secured in the Brazils. With regard to this point, I am desired to inform you that Mr. John Bramley Moore, whose firm is connected with the trade of that country, has expressed to a Member of the Council his willingness to assist the Secretary of State in procuring plants and roots, and does not apprehend that there will be any difficulty in so doing. You are at liberty, therefore, to place yourself in communication with Mr. John Bramley Moore, 10, King Street, St. James's.

Memorandum by DR. T. ANDERSON, *Superintendent of the Botanical Gardens, Calcutta, on Ipecacuanha,—dated Herbarium, Royal Gardens, Kew, the 28th March* 1870.

IN reply to your letter dated the 3rd of March 1870, enclosing a copy of a despatch from His Excellency the Governor General of India on the introduction of the true ipecacuanha plant *(cephaelis ipecacuanha)* into India, I have the honor to submit the following report. The steps I have taken to secure a supply of plants from Europe which I may take to India on my return, or may be able to send out in charge of persons who may offer to attend to the plants during the voyage, will show what appears to me to be the best method of obtaining a good stock of plants of ipecacuanha, and will, at the same time, inform the Government of India of the progress that has been made to forward their views.

In the end of last June I received a letter from the Government of Bengal, with copies of the correspondence that had taken place on this subject after my departure from India, and with a request that I would endeavour to further the wishes of Government as expressed in that correspondence.

Acting on that letter, I determined to obtain as many plants of *cephaelis ipecacuanha* as possible from botanical and private gardens in Britain and Europe. I communicated first with Dr. Balfour, Professor of Botany in the University of Edinburgh, and both he and Mr. McNab, the Curator of the Botanical Gardens there, promised to propagate as many cuttings of ipecacuanha for transmission to India as could safely be taken from the two old plants in the Edinburgh Garden. It was when examining these old plants, in order that the best method of propagating might be determined on, that it occurred to Mr. McNab that the numerous root-like tubers might be taken advantage of as a means of rapidly increasing the plants. I saw the first crop of these rhizomes taken off without causing the slightest injury to the plant, and before I left Edinburgh I had the satisfaction of seeing that many of these rhizomes had struck root, and sent up a strong shoot. I heard lately that a considerable number of young plants had been obtained in the Edinburgh Botanical Gardens by means of this root division, and that many more would be procured as the roots are reproduced, all of which are intended for India. I may mention that the two old plants of *cephaelis ipecacuanha* have been many years in Edinburgh, and they are by far the largest and finest I have seen. In addition to these young plants promised by Dr. Balfour from the Edinburgh Botanical Gardens, I procured from Messrs. Lawson and Sons, of Edinburgh, four large plants of *cephaelis ipecacuanha*, and which I have left in their charge for propagation. Messrs. Lawson and Sons possess extensive propagating pits for tropical plants, which are managed by a very successful and intelligent gardener, who takes a great interest in the increase of the ipecacuanha.

There are seven young plants of *cephaelis ipecacuanha* in the Royal Gardens, Kew, and the greater proportion of these and all the cuttings that can be obtained from them will be available for transmission to India, along with the stock I may obtain from other sources. I have also procured another large plant of ipecacuanha in London, from which cuttings will be made, both of the roots and stems, during the remainder of my leave in England. I have heard of a few more large plants in nurseries and private gardens, some of which I shall be able to purchase or obtain in exchange for seeds or plants from the Calcutta Botanic Gardens. Cuttings will be got from those in private gardens, and will be rooted and grown in Kew.

I estimate that I shall be able to take out to India, in January 1871, not less than 50 plants of the true ipecacuanha, all of which will have been obtained in Europe principally in exchange for rare plants and seeds from the Botanical Gardens, Calcutta. In the correspondence sent to me along with the copy of the despatch of the Government of India, I observe that it is assumed that only one form of the flower (they are dimorphic as regards the relative length of stamens and pistils) exists in Europe, and therefore all the plants procured from Europe will prove to be sterile. I hope this is an error, and I believe it is, because it is supposed in India that only one plant was introduced from Brazil, from which all those in Europe have been artificially propagated, whereas the ipecacuanha plants were brought into Europe on two distinct occasions, first, I think, in 1832 or 1833, and again some years afterwards, and there is every reason to believe that each importation consisted of several plants.

The plants flower regularly in stoves in England, but no one has recorded the condition of their flowers. I shall endeavour to obtain information regarding the nature of flowers as the plants I have procured come into blossom, so as to distinguish and mark plants having different forms of flowers. I had also acted on the suggestion first made by Mr. McNab, that living roots packed in sphagnum might survive the voyage from Brazil. I discussed this proposal with Mr. McNab in Edinburgh in October, when we examined the fresh roots cut from his large plants. I had, at the end of June, mentioned the introduction of the ipecacuanha into India to Dr. Christison, Professor of Materia Medica in the University of Edinburgh, and he then wrote to a friend* in Rio de Janeiro, who had long resided there as a medical practitioner, and requested him to obtain information of the habitat of the plant, and, if possible, procure living plants and seeds for me. Drs. Balfour and Christison have since then addressed this gentleman a second time, and have described to him the method of packing the roots recommended by Mr. McNab. In December, I requested Messrs. Veitch and Sons, of the Exotic Nursery, Chelsea, to procure living plants in Wardian cases, roots in moss, and seeds of the true ipecacuanha from Rio de Janeiro. Messrs. Veitch and Sons

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* Dr. Gunning.

at once wrote to their agent in Brazil, and he has replied that he will have no difficulty in sending plants and seeds to England. In consequence, last week, I entered into an agreement with Messrs. Veitch and Sons to supply me with a good stock of the *cephaelis ipecacuanha* from Brazil. The importation is to consist of live roots packed in moss, and some planted in soil in Wardian cases, and live plants and seeds are also to be sent if they can be obtained. The cost of this importation is not to exceed £25 sterling, including charges for collecting in Brazil and transit to England.

In accordance with the permission given me to communicate with Mr. John Bramley Moore, who has expressed his willingness to assist in procuring roots and plants of ipecacuanha from Brazil, I have called upon that gentleman, but have not had yet an interview with him.

There can be no doubt, I think, that the attempts to introduce the true ipecacuanha from Brazil into India, will succeed only by establishing a nursery in England where roots and plants should remain until they become large and healthy enough to be sent to India. I do not think so small rhizomes as those of the ipecacuanha could survive the long and trying voyage from Brazil to India, even by the shortest overland route, however well they may be packed. Plants received at Calcutta from England, and packed in sphagnum, generally reach in bad order, from fermentation having taken place from the great heat the plants have been exposed to probably in the Red Sea.

It is most likely that a considerable percentage of ipecacuanha roots in sphagnum, and plants in Wardian cases, will arrive alive in England from Brazil, but not possessing sufficient vitality to enable them to withstand the risks they would be exposed to during the very trying voyage to Calcutta. Seeds, too, may retain their vitality until they reach England, but not much longer; for, like the seeds of most species of the *coffeæ*, to which tribe *cephaelis* belongs, they soon lose their germinating power. I therefore recommend that Dr. Hooker should be requested to allow all transmissions of ipecacuanha plants, roots, and seeds to be received at the Royal Gardens, Kew, and to be kept there until they have properly recovered from the effects of the voyage, or until the seeds have germinated. As I am occupied at Kew assisting in the publication of the "Flora of British India," I shall be able to observe the state of the plants, and to arrange with Dr. Hooker for despatch of the plants to India as opportunities may occur. If any of the roots packed in moss are found to be in very good order, a few of the best may be selected, repacked, and forwarded to India by the overland route. If a large quantity of seed is obtained, part of it also might be sent to India, the remainder being sown at Kew.

I may mention that this plan is approved by Dr. Hooker, who also agrees with me in thinking that roots or plants of ipecacuanha sent direct to India from Brazil could not survive so long a voyage.

With reference to the plants of ipecacuanha now in England which I have secured for transmission to India, I think they should not be exposed to the risks of so long a voyage, unless some one conversant with the management of plants can be found to take care of them. Should no one be found willing to do so, no time will be lost by keeping them in England till my return to India in January next, as their multiplication by cuttings and root divisions can be carried on most successfully in this country, and it has been arranged that this should be done. If, however, any officer returning to India who understands the treatment of plants can be found to undertake the care of a small Wardian case of ipecacuanha plants, one or two despatches might be made to Calcutta or Madras before next January. I strongly recommend that the experiment of cultivating the ipecacuanha plant should be entrusted, in the first case, to the Superintendent of the Calcutta Botanical Gardens, and to Mr. M'Ivor at Ootacamund, instead of sending them to other places where there are no horticultural appliances, and where the plants cannot recover from the damage they inevitably receive on the voyage in spite of all the care that may be taken of them.

The plants have thriven at Calcutta and at the lowest levels of the Cinchona Plantations in Sikkim, and also at Ootacamund. There were 20 plants at Calcutta and Darjeeling last November—all the produce of one plant I received in 1866—and 13 at Ootacamund on the 9th of November last, the produce of three plants obtained by Mr. M'Ivor from Kew in 1866-67. These four original plants are the only ones from which cuttings have been made in India, all others having perished on the voyage or soon after reaching the country.

Localities in India adapted to the growth of the ipecacuanha plant will be found in Districts possessing no well-marked or very long, dry, cold season, as the plant cannot withstand cold or drought. Sikkim is the most Western Province of the Himalaya in which the plant will grow. The plains of North-West India are also too hot and dry, and I do not think the plant will withstand the cold or the dry season of Lower Bengal without shelter. Assam, Cachar, Chittagong, the moist parts of Burmah, and the Tenasserim Provinces are Districts in the East in which the cultivation would succeed. The Western Ghâts, from latitude 20° N. Southwards, and the tropical vallies of the Nilgherries, Anamallay, and Pulney Hills, and the Wynaad, in the Bombay and Madras Presidencies, will also be found suitable.

I have just read the memorandum on the ipecacuanha by Mr. Markham, which contains almost all that is known on the subject, and I can add very little to the information therein given.

The account of the plant by Sir William Hooker in the "Botanical Magazine," and quoted by Mr. Markham, is drawn from St. Hilaire's *Plantes usuelles des Brassilies*, published in 1824, and there is no description of it in that author's *Histoire des Plants les plus Remarquables de Bresil et du Paraguay*. In that work he also describes another spurious sort of ipecacuanha, besides those referred to by Mr. Markham. It is yielded by the *Ionidium poaya*, of the natural order *Violaceæ*, an order distinguished by the emetic properties of its plants.

P. S.—I have just been informed by Dr. Hooker that he thinks he sent two more plants to Madras, in addition to the one taken out by Mr. Broughton, the Quinologist at Ootacamund, and the two given to Mr. M'Ivor, thus making five sent from Kew to Madras.

I think I have observed a notice of these plants in the proceedings of the Agri-Horticultural Society of Madras, and that the plants were kept in Madras. It might be as well to inquire about those plants, as no notice of them occurs in the correspondence that has taken place on this subject.

I think it would be very useful to have a translation made of extracts from St. Hilaire's *Plantes usuelles*, and also from Weddell's Memoir in the *Annales des Sciences Naturelles*, and if the Secretary of State approves of this suggestion, I can have the translation made and transmitted to the India Office to be printed.

From H. MERIVALE, ESQ., Under Secretary of State for India, to DR. T. ANDERSON, Superintendent of the Botanical Gardens, Calcutta,—dated India Office, London, the 13th April 1870.

I AM directed by his Grace the Secretary of State for India in Council to acknowledge the receipt of your letter of the 28th ultimo, stating, in reply to the letter from this Office of the 3rd ultimo, the measures which you have already taken, and those which you recommend should be taken for procuring a supply of plants in order to introduce the ipecacuanha into India.

2. In reply, I am desired to thank you for your interesting letter on this subject, which his Grace will have printed and sent to the Government of India with the other papers on this subject.

3. The Duke of Argyll approves of the measures which you have taken and of those which you suggest in your letter. It seems clear from your opinion and

that of Dr. Hooker, that it is desirable, as Dr. Hooker is able and kindly willing to arrange for receiving and propagating the plants at Kew, that they should be sent thither and be under your superintendence to be drafted off where any are fit to be transplanted, and, if a favorable opportunity should occur, sent to Calcutta or the Nilgherries where some few plants have been successfully propagated. His Grace consents also that the two plants now reserved at Kew for Bombay should be made over to you, on the understanding that you will supply two good plants from Calcutta and transmit them to that Presidency in July next, and His Excellency the Governor in Council at Bombay will be informed to this effect.

4. You are also at liberty to correspond officially with Dr. Balfour of the Royal Botanical Gardens at Edinburgh on this matter, and he will be requested to communicate with you in regard to the plants which he has reserved for transmission to India.

5. Your arrangement with Messrs. Keitch is sanctioned, and the Secretary of State will be obliged to you if you will, as you propose, procure translations of the extracts from the works suggested by you and forward them to this Office to be printed.

Memorandum on Ipecacuanha, by C. R. MARKHAM, ESQ.,—*dated* 10*th March* 1870.

Ipecacuanha. Discovery of its use.

THE native tribes of Brazil have always known the efficacy of the little root of the best sort of ipecacuanha in various diseases. Their ancestors, in very remote times, learned its use from the *irara*, a kind of martin, which, when it had made a beast of itself on brackish water, always ran to chew the roots, to excite vomiting. The common native name is *Poaya de mato* and *Cipo*. In the Province of Minas Geraes it is called *ipecacuanha*. The meaning of this name is uncertain, but it is composed of Guarani words. According to one derivation, it is formed of *ipe* (bark) *caa* (plant), *cua* (scented), *nha* (striped), *i. e.*, "the bark of a scented and striped plant."* Burton gives *ipé caá goéne*, "the little plant by the road side."† The "Medical Botany" has *ipi* (Peruvian for a root), and *Cacuanha*, a District; but *ipi* is not the Peruvian for a root, and there is no such District as *Cacuanha*.

Meaning of the word

First mention.

The first mention of ipecacuanha, as of most things, is to be found in "Purchas his Pilgrimes." Purchas begged, borrowed, or stole every journal of travels he could get hold of. A certain Captain Frank Cook, of Dartmouth, appears to have taken a journal from a "Portugal" in 1601, much against the owner's will, and to have lent it to Purchas. It was signed "Manoel Tristan, Enfermero do Colegio de Baya," and contained the first known account of the root. In this journal it is called *Igpecaya*, or *Pigaya*, and is thus described:—"It is said to be profitable for the bloody flux. The stalk is a quarter long, and the roots of another or more. It hath only four or five leaves, and smelleth much wheresoever it is, and the smell is strong and terrible." In 1689 the plant was described by Piso, in his "Natural History of Brazil," p. 101.

Use in dysentery.

Helvetius received a great reward from Louis XIV. for his successful treatment of dysentery with ipecacuanha, and he wrote a treatise on its use.

First described.

Professor Brotero, of Coimbra, first described the plant (which he called *Callicocca Ipecacuanha*) from specimens brought from Brazil by Bernardo Gomez. His description is published in Vol. VI., p. 137 of the "Transactions of the Linnæan Society for 1801," and the paper is illustrated by a drawing of two stems, with the leaves, from one root.

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* Probably the correct derivation.—*Ipe* is bark, and *caa*, a tree or plant. † Wrong.

Emetic discovered. Present name given.

The great French chemist, Pelletier, discovered the active principle in the root in 1817, which he called emetine; and in 1818 M. Richard again described the plant, calling it *cephaëlis ipecacuanha*, a name which has been generally adopted.

Various descriptions.

The ipecacuanha plant is described in Stephenson and Churchill's "Medical Botany" (1834), with a coloured plate, copied from the one in the Linnæan Transactions, but only giving one stem. It is also figured in Curtis's "Botanical Magazine," 1844, Vol. LXX, p., 4063; and there is a full account of it, with good drawings of the roots, in Pereira's "Materia Medica," 4th edition, 1854, Vol. II., Part II. A plant presented by M. Makoy, of Liege, flowered at Kew in June 1843.

Habitat.

The *cephaëlis ipecacuanha* is met with in Brazil from about latitude 8° to 22o S., in the forests of the Serra do Espinhaco* or mountains extending from the capitania of Bahia, through the Province of Minas Geraes, to the Northern part of Sao Paolo. The forests in Minas Geraes are divided into four classes,—the *Matos Virgens*, or virgin tropical forests; the *Catingas*, or woods composed of smaller deciduous trees; the *Carrascos*, at still greater heights, consisting of shrubs; and the *Capoeiras*, or scrub growth on land once cultivated. The *Matos Virgens* clothe the eastern slopes of the Serra do Espinhaco and the Organ Mountains to the westward of Serra do Espinhaco, in Minas Geraes, the country is flatter, consisting of pasture land and much *Catinga* forest; and still further West is the *Sertao*, or desert country in the basin of the San Francisco and its affluents. The ipecacuanha is found, I believe, both in the *Matos Virgens* and the *Catinga*, in moist, shady situations.

Growth.

Cephaëlis ipecacuanha is a little shrub, consisting of a perennial root, three to six inches long, and a short stem with a few leaves at the end.

Root.

The root is bent and contorted, having a knotty appearance like a number of rings of unequal size strung on a thread, of a pale brown colour when fresh.

Stem.

The stem is creeping at the base, then erect, and rising five to nine inches. After the first year or two, the stem throws out crooked knotty runners, which take root irregularly at the knots, and produce new stems.

Leaves.

There are four to eight leaves at the end of the stem. They are almost sessile, oblongovate, opposite and entire, three or four inches long by one or two broad, rough and deep-green above, pale and finely pubescent beneath. The petioles, at the base of the pairs of leaves, are short and hairy, and there are a pair of interpetiolar stipules deeply cleft into segments.

Flower.

The flowets are aggregated into a solitary head, a little drooping, set on a round downy stalk, terminating the stem. The green bracts are pubescent entire, and sessile. The florets sessile and 15 to 24 in number. Calyx, five-toothed, and very short. Corolla sympetalous, white, and five-lobed. Anthers enclosed; stigma, bifid, and usually exserted; stamens, five.

Berry.

The berry is obovate oblong, and crowned with the remains of the calyx. Soft and fleshy, being reddish purple at first, and becoming black and wrinkled. It has two smooth oval seeds.

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* Backbone Mountains.

Trade.

The ipecacuanha roots are gathered at all seasons, but more frequently from January to March, by the Negroes in the neighbouring estates, and also by the Coroado Indians in Minas Geraes. They cut the roots from the stems, dry them in the sun, and pack them in bundles. The berries are ripe in May. The bundles of roots are disposed of to traders, who bring them down to the coast, and they are shipped from Rio and Bahia in bales, bags, barrels, and *serons*.* It is called *annulated ipecacuanha* in commerce.

Cultivation.

Koster, who wrote in 1817, tells us that the ipecacuanha plant is easily cultivated. He had himself made the experiment, but he adds that it requires shade, or at least that it must not be completely exposed to the sun.

Yield of emetine.

Pelletier found that the *cephaëlis ipecacuanha* contained 16 per cent. of emetine in its roots, but Professor Attfield recently obtained only 10·5 per cent. of pure emetine.

Silence of travellers.

It is remarkable how very little is said of ipecacuanha by travellers who have written on Brazil. Nieuhoff, St. Hilaire (in his eight volumes of travels), Castelnau, Henderson, Gardner, Scully, Kidder, Fletcher, and Burton scarcely mention it. Spix and Martius give a few particulars, as also does Koster; and I understand that there is an account of it in St. Hilaire's "Histoire des plantes les plus remarquables de Brésil et du Paraguay." But this work (distinct from his travels) is neither in the Linnæan, Geographical, nor Athenæum libraries.

Second kind.

The second best kind of so-called ipecacuanha is obtained from the root of *Psychotria emetica*, a cinchonaceous shrub growing in Peru, and also in New Granada along the banks of the Magdalena. It is known in commerce as striated ipecacuanha, the root being longitudinally striated, with deep circular intersections at intervals. It is of a blackish brown colour. Pelletier found nine per cent. of emetine in this root; but the results of a recent analysis by Professor Attfield have not been so satisfactory. Last autumn, Messrs. Meier imported about 700 lbs. of the striated ipecacuanha from Bogota by way of Carthagena, and sent a specimen to Professor Attfield for assay. He only found 2·75 per cent. of pure emetine, and expressed a strong opinion that the importation of this root should be discouraged, as being of no direct value. I hear, however, that the cultivation of the *Psychotria emetica* has been successfully introduced into Algeria by M. Hardy.

Third kind.

The third kind met with in commerce is the undulated ipecacuanha, the root of the *Richardsonia scabra* of DeCandolle. It is a perennial shrub, found in Peru and Brazil, with a root having a jointed appearance, with semi-circular grooves, and of a greyish white colour. Pelletier obtained six per cent. of emetine from this root; but an analysis at the present day would probably give a much smaller percentage.

Measures for obtaining roots, &c.

It is quite clear that the *Psychotria* and *Richardsonia* should be entirely ignored, and that attention should be exclusively directed to the best sort—the *cephaëlis* of Minas Geraes. It appears, however, that there are already about 20 plants of this kind in India, from which a good gardener, after a time, could propagate very rapidly. It is therefore unnecessary to go to any great expense in obtaining more from Brazil. Yet if, as is asserted, the roots packed in damp moss will bear a voyage and afterwards strike, supplies might be obtained at trifling expense. It would be merely necessary to instruct traders to see that a portion of the harvest of roots was not dried in the sun, but packed in damp moss and so brought down to the port of shipment. I should myself be inclined to doubt the roots surviving a voyage, unless they were in charge of a competent person. The seeds are very

* Hides.

perishable, but if they were gathered when quite ripe, and properly packed and attended to, a percentage would probably germinate. If a gardener was sent out to bring down plants in damp moss, and establish them at Rio or Bahia in Wardian cases to be sent to India, the most ordinary skill and care would ensure success. But this course would entail an expense which, as there are already plants of the right kind in India, would be quite unnecessary.

Information required.

The acquisition of more accurate and detailed information respecting the soil, climate, and exposure best suited to the plant would of course be useful.

Steps that have been taken.

I have written to Messrs. Miers of Rio requesting them to take steps with reference to obtaining roots packed in damp moss for transmission to England, and also to Mr. Bramah, who will get them through a firm at Rio. I have also addressed Dr. Otho Wucherer, a scientific German, living at Bahia, asking him what steps he would take for procuring roots in a proper state, and ripe seeds; and also requesting him to furnish me, if possible, with more detailed information respecting the habit of the plant than is to be found in any accessible work. Captain Reeks, a Commander, and Mr. Wade, a Surgeon, in the Royal Mail Steam Company's Service on the Brazilian line, will be requested to take special care of any roots or seeds that may be entrusted to them.

Additional Memorandum by C. R. MARKHAM, ESQ.,—*dated* 11*th March* 1870.

SINCE I wrote the above, I have heard from Mr. Daniel Hanbury, a high authority on all questions relating to medicinal plants. He does not think it worth while to send to Brazil for roots of the *cephaëlis ipecacuanha*, if there are plants already in India. He says,—"The places in which the ipecacuanha plant is found are remote from the coast, and long and tedious delays would probably intervene between the collecting and the shipment of any roots that might be obtained. For these reasons I doubt extremely whether roots packed in wet moss would retain their vitality until they reached England. Moreover, I should think that the heat of a tropical climate would inevitably cause specimens so packed to become rotten. If there are growing plants in India, could not a Mr. M'Ivor be found to exercise his skill in multiplying them?"

I find that the region where the ipecacuanha has been found wild is not confined to the forests of Minas Geraes, but extends westward across Brazil to the confines of Bolivia, and the plant grows in special quantities in the upper valley of the Paraguay, in the Province of Matto Grosso. Indeed, Mr. Bramah tells me that, at the present day, nearly all the exported ipecacuanha comes from Matto Grosso. This locality was visited by Dr. Weddell, who published a "Note sur le Cephaëlis Ipecacuanha, son mode de Vegetation dans le Province de Matto Grosso," in the "Annales des Sciences Naturelles, 3rd Series, 1849, Vol. XI., pages 193 to 202."

Dr. Weddell says that the plant was first discovered in Matto Grosso in 1824, near the town of Villa Maria, on the Paraguay. It was generally found growing in large clusters. The collectors, called *Poayero*, take all the stems forming a cluster into one hand, press a hard-pointed stick, called *saracoa*, obliquely into the ground under the roots, and dexterously pull them all up with scarcely any fracture. In the wet season, the earth being loose and wet, it is easier to pull the roots up without fracture, but in the dry season it is more convenient for drying them in the sun. The plant sends down runners from the stem, and multiplies rapidly, and even a fragment accidentally left on the ground will take root. The cephaëlis was growing, with many palm trees, on comparatively high land, above the reach of inundations from the river.

The land journey from Matto Grosso to the coast is over execrable roads, and more than twice as long as that to the Minas Geraes.

Besides the places I mentioned in the former memorandum, the plant will be found figured in "Historia Naturalis Brasiliæ," Gulielmus Piso. Amsterdam, 1648, lib. iv., cap. 65, p. 101, where there is a very rude wood cut. Also, in M. Richard's "Historie Naturelle et Médicale des differentes Espèces d'Ipecacuanhe," 1820, p. 21, tab. i., and in Martius's "Specimen Materiæ Medicæ, Brasiliensis," 1824, tab. i., and p. 4, two flowers, with leaves and root. There are figures also in "Woodville's Medical Botany," Edition 3, Vol. V.

"Heyne, Arzeneigewächse," viii., fol. 20; and Berg and Schmidt's "Offizinelle Gewächse," tab. xv., the two latter and that in the work of Martius being particularly good figures.

Notes on the propagation of the Ipecacuan Plant.

In August 1869 I had a conversation with Dr. Anderson, Director of the Botanic Garden, Calcutta, relative to the growth, habit, and propagation of the ipecacuan plant. He was anxious to procure as many specimens as possible from the British and foreign nurseries and gardens to send to India for the purpose of establishing them in that country. The ipecacuan plant has always been exceedingly scarce in British collections, and, owing to its peculiar habit of growth, is likely to remain so. The conversation referred to induced me to turn my attention to the mode of propagating this plant, which for years had remained much in the same condition, making little or no progress.

Martius, in his "Plantes Usuelles de Brazil," gives the following information regarding the wild state:—"It is found inhabiting the moist and shady forests of various parts of Brazil, especially in the Provinces of Pernambuco, Minas Geraes, and Bahia, its growth extending as far South as lat. 22°; on the islands of Parahyba and the banks of two rivers, called Pomba and Xipota, it is particularly abundant."

It was first introduced into the British gardens in 1830, but through what source does not seem to be recorded. It is a plant of remarkably slow growth; the largest specimen now in the Botanic Garden at Edinburgh is scarcely one foot in height, although more than thirty years of age, and has three leading shoots, each four inches in length. The method hitherto adopted of propagating the *cephaëlis* (as far as I am aware) is by cuttings, but of these not more than one or two can be got at a time, and at long intervals. Cuttings root freely when inserted in white sand. If placed in bottom heat and kept somewhat moist, five or six weeks will be amply sufficient to produce roots. After the cuttings are sufficiently strong, they should be potted in a mixture of fine loam and sand. On account of this comparatively slow method of propagating, the *cephaëlis* will probably remain scarce.

The roots, or rather rhizomes, of the *cephaëlis* are peculiarly annulated. A few of them were taken from one of the plants in the Botanic Garden during the month of August 1869, and after being cut into transverse sections of different lengths, were inserted in a horizontal position over the surface of a pot prepared with drainage and white sand. This pot was placed under a hand-glass in a warm propagating bed and kept moist. A few weeks afterwards the root-cuttings began to swell and showed signs of budding, chiefly on the edge of the upper cut surface. In most cases only one bud was developed, but in some instances two or more were produced. When several growing points are observed, the root can be cut through so as to form independent plants. In every case the leaf buds are first developed and nourished by the sap in the fleshy portion of the root. As the buds begin to elongate, some fine filmy roots are protruded from the under surface. Young plants so produced are now growing freely in the garden, the largest being 3½ inches high, with five small leaves, and young fibrous roots about 1½ inches long. In order to meet the demand which in all likelihood

will be made on nurserymen for plants of the *cephaëlis*, it is well to know how it can be propagated independently of cuttings, and at the same time without injury to the parent plant.

Understanding that the Government intend to introduce the cultivation of this plant into India, I would suggest that no time should be lost in securing a quantity of the ipecacuan plants for the purpose of making a fair start. I have explained from experiments how this plant can be increased by means of root division; but as this will be a slow process, on account of the few established plants in the country to work upon, it is desirable that immediate steps should be taken to procure a quantity of plants or roots (rhizomes) from the native habitats in Brazil, and thus enable cultivators to get a stock to propagate from. For this purpose I beg to offer a few observations on the introduction and extension of the ipecacuan plant. Various ways may be suggested for this end. The first and perhaps the most expensive method would be to have the plants brought Home in Wardian cases, and on their arrival in this country, or in India, they could be subjected to root propagation. If the tops come Home alive, they also could be placed in positions to secure a new growth of leaves and roots. But a cheaper, and perhaps the safest, method of procuring plants would be to collect a quantity of the fresh roots or rhizomes from their native soil, and after sealing the cut extremities, to place them longitudinally in a close-fitted packing-box made of wood (not less than one inch thick), having a layer of fresh sphagnum moss placed between each layer of roots. If the moss is firmly packed, it ought to keep the roots in a plump and perfect state for many months, or until such time as they reach their destination. If white sphagnum moss cannot readily be obtained, moss of any kind moistened, and the excess of moisture thoroughly squeezed out, will perhaps answer the purpose as well. If moss cannot be procured, heavy soil, taken six or eight inches under the surface, with the natural moisture in it, may be used, although not so suitable as sphagnum.

Rose bushes have been sent from this country to Australia, packed entirely in layers of sphagnum moss, and have reached their destination in safety. Some years ago I packed a quantity of roots of herbaceous plants in sphagnum in the backwoods of Canada during the month of August, and unpacked them in Edinburgh in January all perfectly fresh; and I have also brought Home many species of American tree seeds in spagnum moss in a state fit for growing, while samples of the same seeds, brought Home in canvas and paper bags, were incapable of germination. From my knowledge of the preservative powers of fresh sphagnum moss, and the nature of the woody roots of the ipecacuan plant, I have no hesitation in saying that roots or rooted stems (the plants being previously divested of their foliage) might be sent Home alive in the manner described. It is a curious fact that some variety of sphagnum moss is found in almost every quarter of the globe. A few weeks ago some plants of *Anæctochilus*, packed in sphagnum at Singapore, reached this country in good condition, thus showing the wonderful preservative powers of the moss.

When the young ipecacuan plants intended for India are of sufficient size, they ought to be hardened in a moderately cool plant-house for some weeks to enable them better to stand the transit. After being sufficiently matured, they may be planted in a Wardian case, where they should remain a few weeks to settle before being sent out. However this method of packing for transmission abroad is not always desirable, except in the case of very strong specimens. With the exception of a few old ones, the age of the majority to be sent out will not average over eight or ten months. Such young plants could hardly survive in a case constructed on the Wardian principle, and the young roots could not hold the soil together; besides, Wardian cases are liable to be upset and the roots injured and lost.

Judging from the size and nature of the plants likely to be available, it will be preferable to send them all in pots. The case for such plants to be divided into wooden compartments like a bottle basket, each compartment being made to contain only one pot. The pots to be enveloped in sphagnum moss, having some light clean pieces carefully placed on the surface of each, and afterwards tied round and kept down with very fine galvanised iron wire, as bast matting or

hemp cord, generally employed for such purposes, is apt to mould with the damp and injure the young plants. The bottom of the case should be perforated with six or eight holes, half an inch in diameter, to carry off any superfluous moisture. The plants, before being tied up, ought to be watered and well drained before the sphagnum covering is put round them, and so arranged in the case that the tallest shall be in the centre row. The bottom of the case should be covered with sphagnum, so that each pot will rest securely on it, and, if necessary, some fine wire can be taken over the surface of the rack to keep the pots from moving. By the method of packing here suggested, the cases will be lighter than the ordinary earth ones and more easily moved. A little fresh water now and then poured over the moss will be sufficient to keep the earth in the pots in proper condition. Such sphagnum prepared cases could be glazed, wired, and covered with tarpaulin in the way adopted for Wardian cases. Instead of glass, I would recommend strong white cotton cloth tightly stretched and tacked over properly-constructed frames, hinged at the bottom, and made to lock or open at pleasure. A sprinkling of fresh water over the cotton covering several times during the transit, ought to keep the plants in good condition till they reach their destination, without pouring it over the moss as is necessary in glazed cases.

The cotton-covered cases could be made of different sizes to hold twelve, fifteen, or eighteen pots. The pots placed in each case should be of a uniform size, say 3 or 4 inches outside diameter. We shall suppose a plant case constructed to hold fifteen plants, and each pot 4 inches in diameter. This ought to be 26 inches long and 16 inches wide (inside measure), made of wood one inch thick, the sides to be eight inches deep, and the height need not be more than 18 or 20 inches. The ends to be wholly of wood, so constructed as to receive the framed cotton covering, and to be provided with iron handles. The rack to contain the pots should be made of wood three-quarter of an inch thick, and 3 inches deep, so secured as to be 4 inches above the bottom of the case, thus allowing the moss to be uniform over all the under surface; by being so, it will be less liable to become dry, than if each compartment were filled separate. If properly done at first with clean moist sphagnum, it will be found that the occasional moistening of the cotton cloth, either by rain or artificial watering, will be found sufficient to keep the plants in good condition till they reach their destination.

It will be necessary, when the cases arrive at their journey's end, to admit light and air very cautiously. In the event of a glass covering, air ought to be introduced gradually, but with a cotton covering, less care is required, as, no matter how strong, it always admits a certain amount of ventilation.

If the plants arrive in good condition, they should be planted at first in an open, free, and fibrous soil, with a slight mixture of sand, and properly shaded and protected. In such a mixture, the fleshy roots will develope themselves better than in soil of a heavy compact or clay nature, which, however, may suit them after they are sufficiently matured.

If the tops of any of the plants should decay during the transit, the pots and soil should be preserved, as it is likely that fresh tops will be produced, from the fleshy portion of root under the surface.

Circular from E. C. BAYLEY, ESQ., Secretary to the Government of India, to Local Governments and Administrations,—Nos. 2913—22, dated Simla, the 11th June 1870.

IN continuation of the letter from this Department, dated the 19th January 1869, I am directed to forward for information the accompanying copy of a despatch from Her Majesty's Secretary of State, No. 27 (Revenue), dated the 20th April last, and of its enclosures, showing the steps that have been taken by His Grace to promote the introduction of the ipecacuanha plant into India, together with copies of the pamphlet referred to in the despatch entitled Notes by Mr. McNab on the propagation of the plant.

2. I am to request that a few copies of Mr. McNab's pamphlet, with a copy of the Secretary of State's despatch and its other enclosures, may be communicated to the local Agri-Horticultural Society.

NEILGHERRY CINCHONA PLANTATIONS.

From the Government of Fort St. George, to Her Majesty's Secretary of State for India,—No. 5, dated the 7th March 1870.

Proceedings of Government, 21st February 1870, Nos. 208-210.

IN continuation of our despatch dated 9th March 1869, No. 9, we have the honor to forward, for your Grace's information, the accompanying Tabular Report on the progress and condition of the Cinchona Plantations on the Neilgherries for the half year ending 31st July 1869.

Extract from the Proceedings of the Government of Fort St. George, Revenue Department,—No. 208-210, *dated the* 21*st February* 1870.

READ the following letters:—

From the Commissioner of the Neilgherries, to the Acting Secretary to the Government of Madras, Revenue Department,—No. 48, dated Ootacamund, the 15th September 1869.

I HAVE the honor to forward Mr. McIvor's report on the number, distribution, and condition of cinchona plants on the Neilgherry Hills for the half year ending 31st July 1869.

2. The report does not seem to call for any remarks from me.

From the Commissioner of the Neilgherries, to the Acting Secretary to the Government of Madras, Revenue Department,—No. 8, dated Ootacamund, the 1st February 1870.

I BEG to forward duplicate copy of the report called for in your Under Secretary's official Memorandum No. 10 of the 18th ultimo.

2. The original, Mr. McIvor states, he sent to my Office on the 1st October last, but it does not appear to have reached, hence the delay which I much regret.

Report on the Number, Distribution, and Condition of Cinchona Plants on the Neilgherries for the half year ending 31*st July* 1869.

Species.	Botanical Names.	Commercial Names.	No. of Plants.	Value per lb. of dry bark in the London market.
				s. d. to s. d.
1	C. Succirubra	Red bark	1,215,963	2 6 to 8 9
2	„ Calisaya ...			
	„ „ Frutex ...	Yellow bark	40,395	2 10 to 7 0
	„ „ Vera ...			
3	„ Officinalis ...	Original loxa bark ...	1,183,159	2 10 to 7 0
	„ Var Condaminea ...			
	„ „ Bonplandiana	Select crown bark ...	87,509	2 10 to 7 0
	„ „ Crispa	Fine crown bark ...	4,355	2 10 to 6 0
4	„ Lancifolia	Pitayo bark	279	1 8 to 2 10
5	„ Nitida	Genuine grey bark ...	2,786	1 8 to 2 10
6	„ Species without name	Fine grey bark... ...	8,500	1 8 to 2 10
7	„ Micrantha	Grey bark	46,730	1 8 to 2 9
8	„ Peruviana	Finest grey bark ...	3,389	1 8 to 2 10
9	„ Pahudiana	Unknown	425	Unknown.
10	„ Lanceolata, leaved variety of Officinalis	.....	701	Do.
11	„ Pitayo, from the seeds sent by Mr. Cross	.....	86	Do.
	Total number of plants ...	.....	2,594,277	

Table showing the growth of the different species of Plants planted out in the Plantations for the half year ending 31st July 1869.

No. of Plants.	Species.	Where planted.	When planted.	Maximum growth.	Average growth.	Height of the tallest tree.	Girth near the ground.
				Inches.	Inches.	Feet.	Inches.
12	C. Succirubra ...	Neddiwuttum	30th Aug. 1862	28	10½	24	29
12	C. Micrantha ...	Do. ...	.....	19	9	22½	24
12	C. Officinalis ...	Dodabetta ...	30th Sept. 1863	13	11	14½	12

Table showing the Propagation, Distribution, &c., of Plants and Seeds during the half year ending 31st July 1869.

Date.	Total number of Plants propagated.	Total number permanently planted out.	Total number of Plants distributed to private individuals.	Total quantity of seeds distributed.
				Ounces.
February 1869	12,600	.....	.....	2½
March „	5,440	.....	.....	3
April „	2,480	.....	.....	6
May „	1,200	.....	2,700	1
June „	701	121,020	4,800	7
July „	86	128,767	.....	14
	22,507	249,787	7,500	33½
Previously	2,571,770	894,057	170,850	206½
Grand Total ...	2,594,277	1,143,844	178,350	240

Remarks.—The number of plants permanently planted out in the plantations is 249,787, making the total 1,143,844.

All the species of cinchona still maintain their usual luxuriance; the older plants of Cinchona Succirubra, Micrantha, and Officinalis have this year again produced a large quantity of good seeds.

The increase by propagation is 22,507, the monthly average being 3,751, making the total 2,594,277.

The number of plants distributed to the public is 7,500, giving the total distribution of 178,350: thirty-three and-a-half ounces of seeds have also been gratuitously distributed, making the total 240 ounces.

W. G. McIVOR,
Supdt., Govt. Cinchona Plantations.

Ootacamund:
23rd August 1869.

[210.] Order thereon, No. 255, dated 21st February 1870.

Copies of the report received with the Commissioner's letter of 1st instant, will be forwarded to the Secretary of State, to the Supreme Government, to the other Governments in India, and to the Superintendent of Cinchona Plantations in Java.

2. A copy will also be laid on the Editor's table.

(True Extract.)

R. A. DALYELL,
Acting Secretary to Government.

From the Government of Fort St. George, to Her Majesty's Secretary of State for India,—No. 7, dated 21st March 1870.

In continuation of our despatch dated 7th instant, No. 5, we have the honor to forward, for your Grace's information, the accompanying Tabular Report on the progress and condition of the cinchona plantations on the Neilgherries for the half year ending 31st January 1870.

Proceedings of Government, Nos. 149-150, dated 18th March 1870.

Extract from the Proceedings of the Government of Fort St. George, Revenue Department,—Nos. 149-150, dated 18th March 1870.

Read the following letter:—

From the Commissioner of the Neilgherries, to the Secretary to the Government of Madras, Revenue Department,—No. 18, dated Ootacamund, the 5th March 1870.

I have the honor to forward the Report of the Superintendent, Cinchona Plantations, for the half year ending 31st January 1870.

2. The Government will observe that 862 plants of the new lanceolate variety of *C. Officinalis* and 37 of the pitayo variety have been propagated since the 31st July 1869. Since the receipt of Government Order, dated 9th November 1869, the Superintendent has devoted attention to the above-mentioned varieties, and is propagating them as fast as he can.

Report on the Number, Distribution, and Condition of Cinchona Plants on the Neilgherries for the half year ending 31st January 1870.

Species.	Botanical Names.	Commercial Names.	Number of Plants.	Value per lb. of dry bark in the London market.
				s. d. s. d.
1	C. Succirubra	Red bark	1,215,963	2 6 to 8 9
2	„ Calisaya	Yellow bark	40,395	2 10 to 7 0
	„ „ Frutex ...			
	„ „ Vera ...			
3	„ Officinalis	.....	.....	.....
	„ Var Condaminea	Original loxa bark ...	1,183,159	2 10 to 7 0
	„ „ Bonplandiana	Select crown bark ...	87,509	2 10 to 7 0
	„ „ Crispa	Fine crown bark ...	4,355	2 10 to 6 0
4	„ Lancifolia	Pitayo bark	279	1 8 to 2 10
5	„ Nitida	Genuine grey bark ...	2,786	1 8 to 2 9
6	„ Species without name	Fine grey bark... ...	8,500	1 8 to 2 10
7	„ Micrantha	Grey bark	46,730	1 8 to 2 9
8	„ Peruviana	Finest grey bark ...	3,389	1 8 to 2 10
9	„ Pahudiana...	Unknown	425	Unknown.
10	„ Lanceolate leaved variety of C. Officinalis	.....	1,563	Do.
11	„ Pitayo, from the seeds sent by Mr. Cross	.....	123	Do.
	Total number of Plants ...	.....	2,595,176	

Table showing the growth of the different species of plants planted out in the Plantations for the half year ending 31st January 1870.

Number of Plants.	Species.	Where planted.	When planted.	Maximum growth.	Average growth.	Height of the tallest tree.	Girth near the ground.
				Inches.	Inches.	Feet.	Inches.
12	C. Succirubra ...	Neddiwuttum..	30th September 1862...	25	15½	24½	32
12	C. Micrantha ...	Do. ...	1862 ...	19	9½	23½	25
12	C. Officinalis... ...	Dodabetta ...	30th September 1863...	18	10½	18½	13½

Table showing the propagation, distribution, &c., of plants and seeds during the half year ending 31st January 1870.

Date.	Total number of plants propagated.	Total number permanently planted out.	Total number of plants distributed to private individuals.	Total quantity of seeds distributed.
				Ounces.
August 1869	350	4,580	.....	10
September „	.....	.....	.....	28
October „	.....	.....	105	10
November „	420	.....	100	2
December „	.....	.....	.....	5
January 1870	129	.....	50	.....
	899	4,580	255	55
Previously	2,594,277	1,143,844	178,350	240
Grand Total ...	2,595,176	1,148,424	178,605	295

REMARKS.—The number of plants permanently planted out in the plantations is 4,580, making the total 1,148,424.

This increase by propagation is 899, the monthly average being 150, making the total 2,595,176.

The number of plants distributed to the public is 255, giving the total distribution of 178,605: fifty-five ounces of seeds have also been gratuitously distributed, making the total 295 ounces.

OOTACAMUND;
The 28th February 1870.

W. G. McIVOR,
Supdt., Govt. Cinchona Plantations.

[No. 150.] Order thereon, No. 371, dated 18th March 1870.

COPIES of the Report received with this letter will be forwarded to the Secretary of State, to the Supreme Government, to the other Governments in India, and to the Superintendent of the Cinchona Plantations in Java.

2. A copy will also be laid on the Editor's table.

(True extract.)

R. A. DALYELL,
Acting Secretary to Government.

From the Government of Fort St. George, to Her Majesty's Secretary of State for India,—No. 8, dated the 21st March 1870.

WE have the honor to forward, for your Grace's information, the accompanying satisfactory Report from the Government Quinologist respecting his examinations of the cinchona barks, etc., together with our Proceedings thereon dated 22nd February 1870, No. 268.

Pregs.* of Govt., 22nd Feb. 1870, Nos. 235, 236.

* Published in the Supplement to the *Gazette of India* of the 19th March 1870, pages 448 to 461.

2. Our Proceedings of the 22nd September 1868, and 19th June 1869, referred to in Mr. Broughton's report (paragraphs 3, 5 and 10) were forwarded to the Home Government with our despatches dated, respectively, 6th October 1868, No. 49, and 27th July 1869, No. 44.

From Her Majesty's Secretary of State for India, to the Government of Fort St. George,—No. 13, dated London, the 19th May 1870.

I HAVE received and considerred in Council your Excellency's despatches in the Revenue Department, dated March 7th and 21st (Nos. 5, 7 and 8) of 1870, transmitting two reports of the progress and condition of the cinchona plantations on the Neilgherry Hills, and Mr. Broughton's report on his examination of cinchona barks.

2. Mr. Broughton, by a series of careful and judicious analyses which are most creditable to him as a scientific chemist, appears to have arrived at practical results respecting the more important questions relating to Cinchona cultivation, namely, the best conditions of growth, the time for harvesting, and the mode of drying the bark.

3. Upwards of a million plants are now permanently planted out in the Government plantations, some of which are 25 feet high and 32 inches in girth. The time, therefore, seems to have arrived for your Government to adopt some systematic course with reference to utilizing the very large quantity of febrifuge alkaloids which is now stored in the bark of these trees. I am of opinion that this subject should receive consideration from your Government at an early date, and that, in consultation with Mr. Broughton and Mr. McIvor, a regular system of procuring and utilizing an annual harvest of bark should be commenced and developed as further experience is acquired in future years.

4. The plantations will require thinning from time to time, and strict injunctions should be given that no bark, not even that of the smallest twigs, should be wasted. The bark which is useless for the extraction of quinine is valuable as a febrifuge for the use of coolies in the form of a decoction or infusion. But a certain number of larger trees must now be annually in a sufficiently advanced stage of growth to yield bark suitable for the extraction of alkaloids. It will be a point for your decision whether this bark should be used in the manufactory at Ootacamund for the supply of hospitals in India, or be sent to the London market, or whether a portion should be sent Home, and a portion worked up on the spot.

5. In considering the course to be adopted with reference to the Government plantations, the question will arise whether they should remain permanently in the hands of the Government for the supply of quinine in the hospitals, and the distribution of seeds and plants throughout India, or whether they should eventually be disposed of as in the case of the Government tea plantations. If the latter course appears preferable, it will be necessary to decide at what stage of its development the connection of Government with the enterprise should cease.

6. In considering this important subject, many other points will arise which I am not in a position to specify; but I trust that the whole question, in all its bearings, will receive full consideration from your Government, and that your conclusions may be communicated to me in time to allow of a regular system being adopted for the ensuing year.

From E. C. BAYLEY, ESQ., C. S. I., Secretary to the Government of India, Home Department, to the Chief Secretary to the Government of Fort St. George,—No. 3093, dated 28th June 1870.

REFERRING to the 5th paragraph of the despatch from Her Majesty's Secretary of State for India, to the Government of Fort St. George, No. 13, dated the 19th May 1870, regarding the course to be adopted with reference to the cinchona plantations on the Neilgherry Hills, whether they should remain permanently in the hands of Government, or whether they should eventually be disposed of, as in the case of the Government tea plantations, I am directed by His Excellency the Governor General in Council to request that no proposals for the sale of the said plantations may be made without first communicating with the Government of India.

EPIDEMIC FEVER WHICH RAGED IN THE ISLAND OF MAURITIUS IN THE YEAR 1867, AND THE IMPROVEMENTS EFFECTED IN THE SANITARY CONDITION OF THE LOWER CLASSES OF THE COMMUNITY AND TIME-EXPIRED EMIGRANTS.

From E. C. BAYLEY, ESQ., Secretary to the Government of India, Home Department, to the Hon'ble the Colonial Secretary to the Government of Mauritius,—No. 3303, dated Simla, the 16th July 1869.

THE Government of India recently addressed Her Majesty's Secretary of State for India with a view to procure a modification of the orders of the Home Government, under which space at the rate of 24 superficial feet only is allowed to coolies in depôt at Bombay and Madras. This amount of space was considered insufficient; and, in advocating its extension, the Government of India, referring to an opinion expressed by the Health Officer of Port Louis that the Mauritius fever had been imported from India, observed that the risk of taking the fever on board was very greatly increased by anything approaching to over-crowding in depôt, and that, if the coolies were allowed only 24 feet each, they were dangerously over-crowded.

2. On the question thus raised, Her Majesty's Secretary of State* has now communicated to the Government of India the opinions of the Colonial Office, the Emigration Board, and the War Office Sanitary Commission, from which it would appear that those authorities are unanimous that 24 superficial feet, properly ventilated, constitute an adequate space for

* Despatch from the Duke of Argyll, to the Government of India, No. 23 (Sanitary), dated 13th May 1869.

coolies in a depôt. Under these circumstances, His Grace the Duke of Argyll has declined to modify the orders above-mentioned, but has invited the attention of this Government to certain remarks made by the War Office Sanitary Commission* in relation to the very defective arrangements which appear to exist in the Mauritius for the accommodation of emigrants.

* Memorandum dated 8th March 1869.

3. The remarks of the Sanitary Commission, to which the attention of the Government of India is thus called, are as follows:—

"The Mauritius epidemic is proved in the papers recently before the Commission to have been neither more nor less than a very severe local malarial fever with fatal complications. It was remittent and intermittent in character; it arose from local conditions which are perfectly well known; it was not imported, and had nothing to do with cooly emigrants, except that they were attacked like the rest of the population in consequence of the same local and epidemic causes.

"The same papers show that there is another fever, called the Bombay fever, on account of its prevalence among imported coolies, which has nothing in common with the Mauritius epidemic. This fever is a typhoid fever, almost entirely confined to coolies, and clearly connected with the bad accommodation and other sanitary defects to which the people are exposed in the Mauritius itself. There is hence no argument from these Mauritius fevers which can be used for augmenting the superficial area to be allotted to coolies in the depôts in India.

* * * * * * * *

"Lastly, the evidence contained in the Mauritius papers recently before the Commission shows that whatever dangers the cooly may be exposed to in depôt and on board-ship, these are comparatively of trivial importance to the health of the men when considered with reference to the unhealthy conditions to which cooly laborers are exposed in the Mauritius.

"Their accommodation there is bad, and there is no evidence of any sanitary police being exercised in the places where they live.

"Hence the typhoid Bombay fever from which they suffer.

"While, therefore, the depôt accommodation should be kept in a healthy state, it is obvious that the chief causes of these high death-rates to be dealt with are to be sought for on board-ship and in the Mauritius itself."

4. His Grace commends the views of the War Office Sanitary Commission to the particular consideration of this Government, and desires to be furnished with any observations which may occur to the Governor General in Council with reference to the defective arrangements complained of.

5. The remarks of the Sanitary Commission appear to be founded on the following passages of the report of the Mauritius Fever Enquiry Commission, a copy of which was received with the letter from your Office, No. A2238, dated the 18th November 1868:—

"It is painful to have to state that in a small island like this, where inspection could easily be carried out, one finds on all sides over-crowding of Indians and ex-apprentices in low-lying, damp, and badly-ventilated dwellings.

* * * * * * * * *

"Amongst the causes of insalubrity, the Commission give the first place to the over-crowding, small size, and deficient ventilation of the dwellings inhabited by the poorer classes in some parts of the town and suburbs, as well as the improper nature of some of the materials used in their construction, as for instance, galvanized iron, zinc, and tin, which, in this tropical climate, make the atmosphere of dwellings extremely hot and unhealthy."—*(Page* 12.*)*

Again, "over-crowding among the lower classes, though it was not the generating cause of the malarial fever, intensified its ravages, and increased considerably the number of its victims.

"The provisions of Chapter XV. of Ordinance No. XVIII of 1860 are quite insufficient for preventing over-crowding. * * * * *
Over-crowding should be clearly and precisely defined in the Ordinance, and the provisions to that effect circulated among the lower classes in their native language."—*(Page* 31.*)*

6. In the report of the Acting General Sanitary Inspector, which is appended to the report of the Fever Commission, the following remarks on the same subject occur:—

"The houses of Port Louis are built with little symmetry and almost contrary to the primary rules of the plainest architecture; some, however, are lofty, spacious, and well-aired, but there are hosts of others in which there is no ventilation, and where over-crowding passes the limits of credibility. In the wretched tenements inhabited by these Indians, who form nearly three-fourths of the population of the town, it is impossible to fix the amount of cubic space required by law, or to enforce any of those sanitary regulations made for the purpose of protecting public health.

"While these remarks apply forcibly to the huts scattered in the various suburbs, there are in the centre of the town several camps belonging to public companies, in which imperfections of a very serious nature are witnessed. 'These camps,' to use the expressions of the Committee appointed last year to examine their condition, 'are on too small a scale, the buildings far too low, and being invariably roofed either with iron or tin without any intermediate ceiling are intolerably hot. There is little or no ventilation, the doors being generally the only openings. Their drainage is directed into the public streets, whilst others in the suburbs pollute the streams.'"—*(Paragraphs* 33 *and* 34.*)*

7. It would appear from the passages above extracted to be generally admitted that the condition of the dwellings of the lower classes in Mauritius is very insalubrious. And the Governor General in Council observes that this is also acknowledged in His Excellency Sir H. Barkley's despatch to Her Majesty's Secretary of State for the Colonies, dated the 30th December 1869* (paragraphs 8 to 11). In that despatch it was urged as one of the grounds for the surveillance clauses of the Mauritius Ordinance No. XXXI. of 1867, which was submitted for Her Majesty's approval, that a system of registration of *time-expired*† emigrants, to whose insanitary habits the state of things complained of was mainly attributed, was the first condition of any improvement in the dwellings and surroundings of the lower classes. I am to quote, for facility of reference, the passage of His Excellency's despatch above-mentioned:—

* No. 333 (Legislative), enclosed in Sir Stafford Northcote's despatch to the Government of India (Public), No. 80, dated 30th April 1868.

† The provision of proper accommodation for emigrants still under engagement, is secured by Colonial legislation.

"8. In Mauritius, no doubt, the progress of the country has been apparently more rapid; many old immigrants have become industrious and thriving members of society; large villages have sprung up in every part of the island; and the town of Port Louis has, in a few years, doubled its population; but the external air of prosperity thus produced covers many serious drawbacks, as I have often had occasion to remark in my correspondence.

"9. This agglomeration of people of dirty habits in wretched and over-crowded huts, constructed without the slightest regard to sanitary principles, and grouped together often in the most unsuitable localities, is universally regarded as the main cause of the excessive mortality which attended the late epidemic. And when it is considered that some of these villages lost a fourth of their population, and that the death-rate in that portion of the capital known as Malabar town cannot have been much lower, whereas, on the sugar estates in the infected districts, as shown in a recent despatch, the mortality during the first six months of the year in no case equalled 10 per cent., and averaged less than three per cent., it seems impossible to resist the force of this conclusion.

"10. If it be asked why steps were not taken in former days to establish, if not a regular scheme of local self-government, at least some regulations as to drainage, drinking water, size of dwellings, &c., the reply must be that this has been often discussed; but that those who have taken the matter into consideration have one and all ended by declaring that something like a registration of the inhabitants was an essential preliminary to any legislation.

"11. Nothing, in fact, can be less like a well-regulated village community in India, which presents the natural model for this country, than the motley crew from every region and every class of Hindoostan,—Bengallees, Madrassees, Parsees, and Lascars, with a sprinkling perhaps of Arabs, Chinese, Malegaches, Africans, and Euro-Africans,—who constitute one of these nuclei of population in Mauritius; whilst the unsettled habits of the Indian portion, and the uncertain number of inmates contained in their houses, render it almost vain to attempt the introduction of any kind of order."

8. Under these circumstances, I am directed to enquire, with reference to His Excellency Sir H. Barkley's observations above-cited, what steps have been taken to use the means supplied by the Ordinance No. XXXI. of 1867 towards improving the sanitary condition of the lower

classes, and especially of time-expired emigrants. This information is sought in order to enable the Government of India to reply to the despatch of the Duke of Argyll, which is referred to in the 2nd paragraph of this letter. But His Excellency the Governor of the Mauritius will fully believe that the enquiry is one in which this Government must naturally feel great interest as materially affecting the welfare of the many natives of this country who have emigrated to the Colony.

From the Hon'ble the Colonial Secretary, Mauritius, to the Secretary to the Government of India, Home Department,—No. A2070, dated the 21st December 1869.

I AM directed by the Governor of Mauritius to acknowledge the receipt of letters No. 3303 from yourself, and No. 3022 from Mr. Under Secretary Geoghegan, both dated July last, and to apologise for the delay which has occurred in forwarding the six copies of the report of the Fever Enquiry Commission applied for in the latter communication: they are now transmitted by the same opportunity as the present letter.

Two questions raised in the correspondence appear to His Excellency to call for observation on the part of this Government:

1*st*.—The medical one,—whether the fever epidemic which raged in the year 1867 was of the paludal and uncommunicable type, or was not rather, as the Sanitary Commissioner, Major Malleson, supposes, of the same nature as the Jail fevers of Upper India, the more serious form of which has now been ascertained to be highly contagious. On this head I have to communicate to you copy of a report from the Chief Medical Officer of this Colony, to whom the subject was referred, who, from having been present throughout the epidemic, has had ample opportunity of judging of the nature of the fever, both during its intensity and during the modified and apparently diminishing outbreaks which occurred during the hot season of 1868 and of the current year. This experience has, it will be seen, but confirmed the opinion shared by the great majority of the medical men in the Colony that, though there were undoubtedly several types of fever co-existent during the epidemic, their origin was paludal or malarious, and that they were not communicable from man to man, nor allied to the "Bombay fever" as supposed by Dr. Barraut.

2*nd*.—As to the improvements which may have been effected in the sanitary condition of the lower classes of the community, and more especially of the time-expired immigrants, respecting whose welfare the Government of India is not unnaturally solicitous.

The views of the Governor of Mauritius as to the necessity for the adoption of stringent measures by this Colony for the repression of vagrancy and of over-crowding, and for the removal, as far as practicable, of the insanitary condition, more especially of the Indian portion of the lower classes, have been so unmistakeably set forth in the paragraphs quoted from his despatch on the subject of the epidemic, that it appears unnecessary to add any further observations in support thereof.

But His Excellency would beg to remind His Lordship the Governor General in Council that the habits and ideas of the Indian population cannot, by any exertion on the part of this Government, be changed in a day; the class of immigrants who come to this Island has been drawn from a very low stratum of society in their own country, and, if proof were wanting as to the traditions and customs brought with them from their native land, the account given by a traveller in one of the most recent descriptions of Calcutta itself may be referred to as showing that "60,000 miserable looking huts are said to be huddled together with no appearance of order: cows, buffaloes, goats, naked children, lank and lithe Natives move about, giving motion and life to the scene.

Dr. Norman McLeod's "Peeps at the Far East."

"Whilst between this, the Native portion of the city, and the road along which the writer drove, there was a deep ditch that seemed no better than an open sewer: a plank here and there crossing it, by which alone communication with the opposite side is kept up."

That, too, much freedom from restraint had, under mistaken ideas of philanthropy, been allowed to the Indian immigrant in Mauritius when once freed from the five years' contract of service entered into before his introduction, His Excellency will not attempt to deny; but it will be hardly denied that the reclaiming from inborn habits of domestic uncleanliness and insanitation a class so fatalist and so entramelled by the customs of his forefathers as the Indian of the lower class, is a task which only years of supervision and education can be looked to to accomplish thoroughly.

And it is with this object that, following close upon Ordinance XXXI. of 1867, which will be seen from the annexed reports of the Protector and Inspector General of Police to be working well, an Act was passed for regulating the building of tenements in Port Louis and the villages scattered about the Island, while it has been decided by the Council of Government that a new system of taxation for sanitary purposes, founded in great measure on the classification of laborers under it, shall be resorted to, and the Procureur General has been instructed to prepare a revised Sanitary Code on this basis.

Pending also the promulgation of this Code, the existing Sanitary Regulations have been carried out much more strictly than formerly with the best effects in reducing mortality, and when it is added that an efficient system of poor relief has been established, and that other important measures are in preparation for the improvement of the condition of the lower classes, while a general scheme for the drainage of the town of Port Louis is at present under reference to an eminent Engineer in England, His Excellency would fain hope that, after receiving the above information, His Lordship will not fail to recognize that the Government of Mauritius, in its endeavours to improve the condition of the community at large, has not been unmindful of the duties it owes to the Indian immigrant.

From F. REID, ESQ., M.D., Chief Medical Officer, Civil Medical Department, Mauritius, to the Hon'ble the Colonial Secretary, Mauritius,—No. 391, dated the 8th December 1869.

Question of the identity of Indian Jail Fever and Mauritius Epidemic Fever.

"Considering the history of the epidemic fever in Mauritius, the lamentable mortality which is occasioned, and the whole facts which are available, I am strongly of opinion (that Dr. Barraut's view is correct) that two forms of disease of fever prevailed in the Island just as they did in the Jails,—one mild, and the other of a much more fatal character.

"Whether they are both manifestations of the same poison in different degrees, I am unable to say; but, looking to the known contagious nature of Jail fever and its strong resemblance, if not absolute identity, with the severer forms of the Mauritius epidemic, I would strongly recommend that, in addition to all the sanitary precautions which have been urged by the Commission, the disease should be regarded as being of a communicable nature, and, whenever it appears, means of disinfection should be carefully employed."

I HAVE the honor to submit some observations agreeably to the invitation of His Excellency the Governor on the concluding paragraph as quoted on the margin hereof, of the memorandum drawn up by the Sanitary Commissioner with the Government of India respecting the epidemic fever of this Colony (1866-67-68).

2. In that paragraph and the two immediately preceding, it has been assumed or inferred—

(1), that in the Report of the Fever Enquiry Commission, as well as in that of Dr. Barraut appended to it, mention is made only of one,—"a peculiar form of fever,"—as having been "long known in Mauritius under the name of 'bilious remittent or Bombay fever' generally admitted to be contagious," and that its description accords with that of the fever which has of late years proved so fatal in the Jails of Upper India;

(2), that, while in the opinion of the Commission the Bombay fever was not the epidemic fever, "on the other hand Dr. Barraut believes that it was, its type being unchanged, although, under the epidemic influence, it partook largely of a paludal character;"

(3), the Sanitary Commissioner next raises the question whether the Mauritius epidemic fever was "a malarious fever arising from local conditions," or one of "a much more severe nature propagated from man to man;" and, while admitting that the evidence of the Medical Officers "is almost unanimously to the effect that it was not contagious," he adds that a similar view had been again and again expressed by Jail Medical Officers in India, "who have since found the strongest reasons to alter their opinions;"

(4), further, the Sanitary Commissioner observes that, "along with the contagious fever of Jails" in India, "there prevailed at one and the same time a large number of cases of an intermittent type which yielded readily to treatment and were amenable to quinine;" and that, considering the whole facts which are available "regarding the epidemic in Mauritius, he is strongly of opinion that Dr. Barraut's view is correct, that two forms of fever prevailed in the Island just as they did in the Jails,—one mild, and another of a much more fatal character;"

(5), and lastly, he remarks that, while he is unable to say whether these are "both manifestations of the same poison in different degrees," yet, looking to the known contagious nature of the Jail fever and its strong resemblance, if not its absolute identity, with the severer forms of the Mauritius epidemic," he would strongly "recommend that the disease should be regarded as being of a communicable nature, and that * * means of disinfection should be carefully employed."

3. To enter as fully as their importance deserves into the consideration of the several points put forward by the Sanitary Commissioner in the terminal paragraphs of his report, and which have been cited above in a series of five propositions, and which, I need scarcely add, I desire to treat with every respect, would far exceed the usual limits of an official letter; and, indeed, I scarcely think it necessary to do so at full length, being persuaded that a more extended and thorough examination of the report to which he refers, and especially of the medical and other evidence forming the bulk of the volume on the epidemic fever of Mauritius, will induce him to modify, if not entirely to change, the opinions he has therein expressed.

4. Still in regard to these I shall venture to offer some remarks in the hope that they may have influence towards that end, and first I would observe, in regard to (1), that the Sanitary Commissioner appears to have misconceived in some respects, no doubt through inadvertence, the terms of the summary reports of the Commission and of Dr. Barraut in supposing it to be averred in either that only one, "a peculiar form of fever," has been long known in Mauritius "under the name of bilious remittent or Bombay fever," and this generally admitted to be contagious; whereas, on the contrary, in both these reports, it is stated that two distinct diseases,—the one highly contagious, very fatal and confined almost exclusively to Indians, and the other not contagious, not so confined, nor very fatal,—have both been long known by the common designation of "Bombay fever" to the great confusion alike of medical statistics and professional conclusions.

In the report of the Commission it is noted,—"For a long period apparently, and under the name of Bombay fever, at least two kinds of fever have been classed, very opposite as to their origin, form, nature, and treatment. To us Bombay fever, as generally met with among the Indians, and occasionally, though much less frequently, among the general population, appears to be a continued fever, an *enteric typhus* of more correct nomenclature, with hepatic or bilious complication, and is highly contagious. The *other form*, which we may call the spurious Bombay fever, is less frequently met with, not at all contagious, and attacks almost exclusively the Indians. This form appears to be a malarial remittent, showing itself in those persons chiefly who had already imbibed the malarial poison in their own country, and in whom the small amount of malaria possibly existing here (which although apparently it had no sensible effect upon others not so prepared) was yet sufficient to set up an attack of the disease in them. To sum up, the true Bombay fever is a continued fever almost always accompanied with jaundice, does not produce cachexia, is never preceded nor followed by intermittent relapses, resists the action of quinine, may be met with at all seasons and in all situations however elevated.

"It appears to have been introduced in 1838 by new immigrants coming from the Bombay Presidency (hence its local name), and to have been very virulent on certain estates for a considerable time.

"After that period it became endemic in certain localities, taking frequently a greater extension as in the first two years following its introduction, afterwards remarkably so in 1843, and for three years thereafter; again in 1850, and again in 1862, from which date it appears to have caused great mortality at different times in many estates, and in nearly all the Districts of the Island, especially on those estates situate near the coast, and continued its ravages, more or less, up to 1865, when the comparatively little of it that remained was evidently absorbed by our present epidemic of malarious fever."

5. Although not clear and precise in the matter, Dr. Barraut in his report appears also to have recognized two distinct kinds of fever as having been long known in Mauritius under the common name of "Bombay fever," and to admit that the "bilious remittent fever" is not the "Bombay fever" of Mauritius.

It must be observed, however, that it is extremely difficult, if not impossible, to distinguish from his report what is his own opinion on the subject of that fever, and what he quotes as the opinion in regard to it of "the great bulk of the population of Mauritius," as contrasted with that of "some medical men anxious to refer the disease to the form admitted in systematic medical nomenclature." (Paragraph 45.)

From the preamble of paragraph 43 Dr. Barraut seems to give it as the result of his own experience that among the fevers generally met with in Mauritius must be reckoned, "2°, the continued, which includes the typhoid, typhus, simple febricula, and the Bombay fever, called bilious remittent in Mauritius."

But remittent is not, and typhus is, a continued fever.

Further, remittent fevers are quite distinct from continued fever, and typhus properly belongs to the latter class.

Now, in paragraph 47 under marginal index of "nature of Bombay fever," Dr. Barraut places the Bombay fever among the "continued fevers," and ranges it among the typhus

group. In section 1° of that paragraph he styles it "Indian typhus;" in 2° "typhus of Mauritius;" and in 3° and 4° simply "Bombay fever," and that it is communicable. It would appear almost certain, therefore, that he really considers (with the Commission) that the true Bombay fever is a continued and contagious fever, a typhus and not a remittent fever as supposed by the Sanitary Commissioner. But it is not surprising that the misconception of what alone Dr. Barraut himself considers to be "Bombay fever" should have arisen, seeing he includes it in paragraph 43, section 2,° under the head of continued, and yet cities it as "bilious remittent," and besides the matter is still further complicated by the marginal index to paragraph 45—"bilious remittent fever of India, or Bombay fever of Mauritius."

But for the terminal sentence of that paragraph (45), it might fairly have been concluded that "or" had been put by mistake for "not" "Bombay fever of Mauritius." In that paragraph (45) Dr. Barraut allows that "bilious remittent fever of India" is of malarious origin, and not communicable from person to person, and then he affirms of some other disease occasionally observed in Mauritius, but which he does not himself name that it is communicable, infectious, and appears in localities entirely free from malaria.

The latter is evidently a fever distinct from the former in nature and properties,

6. Although Dr. Barraut gives it no name in that paragraph, it is manifest from the context that he must mean it to apply to the true Bombay fever which he describes in paragraph 47 under the names before quoted ("Indian typhus," "Mauritius typhus," "Bombay fever"), the same disease that is recognised in the Commissioner's report, p. 15, as enteric typhus with hepatic or bilious complication, and highly contagious, and which is there contrasted with *spurious* Bombay fever, which the Commission considers to be a malarial remittent, and not at all contagious. It is to be regretted that Dr. Barraut was not equally clear, for it is evident, although he does not call it spurious Bombay fever, he is contrasting that disease* under the names marginally quoted with the true Bombay or Indian or Mauritius typhus. Thus in 2° of paragraph 47—"The bilious remittent fever of India" (*spurious* Bombay fever) "is generally characterized by remissions of some kind; the typhus of Mauritius does not offer these remissions; though detected at times, they only constitute the exception and never the rule; the type of the fever is continued, and it has a decided tendency to run a definite course from 15 to 20 days." Again, "3°, bilious remittent fever is known to be prevalent in localities where marsh malaria undoubtedly exists, and only shows at certain times of the year when the elements of malarious generation are rife. In Mauritius, on the contrary, the Bombay fever shows itself at all seasons,—in the cold and bracing winter, and in the hot, sultry, and damp summer, in low and humid grounds, as well as in dry and elevated parts of the Island where cholera never showed itself.†

* *Vide* paragraphs 45, 46, 47, "bilious remittent fever of India," "malarious bilious remittent," and "bilious remittent fever."

† Nor have cases of epidemic malarial fever even yet appeared in the higher parts of the Island in any form, or in the lower parts of the Grande Savanne, where formerly Bombay fever was prevalent; nor has intermittent, or even a tendency to interpuit, shown itself anywhere either before, during or after true Bombay fever.
(*Vide* Reports of Medical Practitioners, pp. 11, 13, 13, 15, 16, 17 *et seq.*, and Report of Prison Hospitals attached hereto, pp. 6, *et seq.*)

7. On comparing this passage of his report with paragraph 45, it would seem that Dr. barraut desires in the former to repudiate the confounding Bombay fever with bilious remittent fever, as is said in the latter to be done by some medical men and the great bulk of the population of Mauritius, and yet in paragraph 46, while affirming that "from the evidence of the majority of the medical practitioners and of the planters who have contributed to the basis of this report, it is clear that from a comparison of the symptoms which are seen in Mauritius" (in true Bombay fever?), "and those which are described as occurring in India, in the true malarious bilious remittent" (or spurious or mis-named Bombay fever), that "there is a difference not only in degree, but also in kind between the two forms of fever in spite of the similarity and even analogy of their symptoms, and there is no doubt that the difficulty of detecting the difference has led to a great confusion in distinguishing the principal features of the epidemic visitation of 1867.

8. Surely Dr. Barraut does not intend to impute that falling into great confusion to the "majority of the medical practitioners and of the planters who contributed" to a clear understanding of the great difference in kind as regards their nature and degree, as regards certain symptoms between the true or contagious Bombay typhic fever and the malarious bilious remittent.

That confounding of diseases distinct in kind, and that failure "in distinguishing the principal features of the epidemic visitation of 1867," must be meant by him to apply to a very small minority of medical men who were then doubtful (among whom, I regret to have to add, must be included himself as regards the opinion he has broached in the report now under reference) in addition to the large number "of the population of Mauritius" to whom he alludes in the previous section (45).

9. Although, if time and space permit, it is my intention to revert to the erroneous notions which he has mixed up in his comprehensive, but hastily compiled, general report on the epidemic of 1866-67,—notions which I have reason to know from private conversations with him he does not now maintain,—still it may be well in this place to state that the starting points of the erroneous opinions and confusion of things, different as regards that epidemic, appear to me to have been, 1*st*, the doubt which existed for a long while as to its real nature, scarcely a case of intermittent fever of local origin having before been met with by almost any of the profession or the public; 2*nd*, the doubt as to the malarious origin of the fevers of remittent form which had hitherto been met with in the Island; and 3*rd*, the loose and unguarded manner in which the term "remittent" had been applied, even by medical men, equally to non-malarious* or to malarious remittent fever* (simple or bilious,) a fever not contagious, nor commonly fatal, and liable to occur now, and again among all classes and ages, but most of all among the Indians, and applied also to a very different disease, a fever of continued form, very contagious and fatal, and almost exclusively confined to the latter. This, the true Bombay (*a*) fever, was all but extinct in Mauritius as regards outward manifestation for some time before the outbreak of fatal epidemic malarious fever in 1867. It existed in a few places far distant from each other before the epidemic had manifested itself on the leeward side of the Island, and had disappeared from all, save one, before malarious fever showed itself for the first time in the neighbourhood.

* Spurious Bombay fever.

10. In the rural districts visited by the epidemic, the great majority of the cases of malarious fever were of the intermittent form, and the mortality was moderate compared to that of Port Louis, where a much larger proportion of cases were of the remittent and *quasi*-continued forms of paludal fever. But it is in regard to Port Louis chiefly, if not exclusively, that Dr. Barraut's remarks and suggestions apply respecting another form of fever, the "Indian typhus," or true "Bombay fever," having insiduously crept into the town, taken on the mask of the prevailing malarious epidemic and greatly added to the mortality. Still it is a pure assumption that true contagious Bombay fever had even been heard of either by medical men or the public as existing at all during, or for years prior to the incubation of the malarious fever epidemic in 1866 and its violent outbreak early in 1867 in Port Louis and its environs, where privation and overcrowding, and in brief the insanitary conditions, were at a maximum, the poorer people most debilitated and prepared to fall easy victims, quinine and other suitable medicines, medical attendance, sustenance, and comfort being available for only a small porportion of them, and where the enormous mortality occurred. Let Dr. Barraut be judged by his own words in respect of that unfounded supposition of the presence of what he calls Indian typhus or Bombay fever in town during these years. Writing in 1864, he states in his Brochure on "Bombay fever," page 2,—"I recollect having seen a few cases in 1860 in the town of Port Louis" * * * "Since I have held the appointment of Surgeon to the Immigration Depôt, there was only one ship from Bombay with a few fever cases that were sent to the Civil Hospital immediately on their arrival. That circumstance took place in 1861, since that period nearly 60,000 Indians have been located in it since the last four years."

1.—*Etiology and origin of the fever.*

"The origin of this fever is still enveloped in obscurity. It has been known to exist in the District of Riviere-due-Rempart since 1844; of Flacq and Savanne since 1854; of Black River in 1851; of Pamplemousses in 1838 or 1839; of Plaines Wilhems in 1862, and I recollect having seen a few cases in 1860 in the Town of Port Louis. With such heterogeneous data it is next to impossible to arrive at the exact time of its first introduction; there is, however, a general impression that we receive a fresh importation of the disease on the arrival of each new batch of immigrants from Bombay, but this popular notion is not supported by facts. Since I have held the appointment of Surgeon to the Immigration Depôt, &c."

11. Again in his answers to the queries relative to the great epidemic then waning, written by him in July 1867, with the experience of the previous hot season and its sad scenes fresh in his memory, Dr. Barraut entirely coincides with his professional brethren as to the great bulk of the fever cases having been intermittent, presenting the usual stages, yet convertible as paludal fever is, especially in hot climates, into the remittent and *quasi*-continued form, its curability by quinine alone, or after previous treatment, its extreme rarity prior to 1867; and the replies to query VIII.—"In the first part of January 1866 the first cases which distinctly showed the intermittent type were at Rochebois and Cassis (suburbs); they belonged to the ex-apprentice population. The invasion and extension of the disease were quite sudden."

(*a.*) The true Bombay fever, unless it be quenched on its appearance in an Indian [illegible] striking a mortality that, on looking at the returns of sickness on estates, one may be [illegible] much the main cause of death among the Indian population, that it has settled and [illegible] falls have exceeds the moderate average of ordinary times. The death-rate from [illegible] 15 existed exceeded that of the epidemic malarious fever of late years. Happily it had [illegible] were seen there in that year at Belombre Estate, and was said to have carried off 200 persons, [illegible] pp. 13 and 14, till January 1868 after the Bombay fever had ceased. (*Vide* Report of Dr. Goulin, P. [illegible] and early part of attached, Report on Jails, 1867, pp. 2, 3, 7, *et seq.*) Its presence at the [illegible] malarious fever existed, but 1867 is alluded to in Prison Report, manuscript, 1866 (hereto attached), where [illegible] caused no great mortality at Beau Begour, Hive-du-Rempart also, and with the same results.

In answer to X., p. 38—Whether he had observed during the epidemic many instances of the congestive or of the algide form, he states—"Yes, I had about ten cases simulating apoplexy, and about five or six resembling the collapse stage of cholera. Of the former, two died, and three of the latter, generally in four or five hours." And at p. 69 he notes that some of his patients had been struck down almost in collapse with feeble pulse, cold, tremulous tongue, &c., and adds—"But I cannot state that asthenia characterized all the stages of many of my cases." In regard to that true test of paludal fever, the convertibility of its three forms one into the other, Dr. Barraut replies, p. 49—"I have seen the pure intermittent assuming the remittent,* and even continued form in many instances, and especially in badly ventilated and thickly inhabited houses, the proportion being three out of every five cases when no treatment was given. I have oftener seen the remittent pass into the true intermittent form." At page 174 he writes—"I do not think that I ever saw the intermittent precede the remittent, but I have seen in the majority of my cases the remittent pass into the pure intermittent;" and further at page 175—"Out of 2,000 cases† which came under my notice, I saw about one-twentyeth showing no sign of remission and lying in a continued state. These cases, notwithstanding the administration of quinine, died with all the symptoms‡ of typhus fever, but without eruption."

In regard to the localities in which the remittent form of the epidemic fever was met with, Dr. Barraut notes, p. 182—"I generally found the remittent form in localities remarkable for their imperfect sanitary condition and among persons living in great numbers in the most abject destitution."

Again, in answer to question XLIV.—In cases of remittent fever treated by you, has improvement rapidly succeeded free evacuation of bile by vomitting or purging, or both, and the form changing to intermittent, has the disease speedily yielded to full doses of quinine? Dr. Barraut replies—"Yes; for the remittent I have found that, sudorifics, emitics and purgatives were best suited, and that quinine was only good when the intermissions were fully marked." To question XLV. he answers—"The cases of intermittent and remittent fever attended by me had lived in the same locality where they were attacked (Port Louis), with the exception of a few coming from Rochebois and Petite Riviere."

12. In respect of the question of the epidemic fever being communicable from person to person, and as to its being paludal fever, his replies are in the negative as regards the former, and the affirmative as regards the latter, with only a slight theoretical peculiarity rather than reservation; and, if so, it follows that in both these respects the Sanitary Commissioner has been misled by the suppositions, assumptions, and suggestions which have found their way into the report of Dr. Barraut from which he quotes.

In reply to question XLVII. respecting the arrival in a healthy locality of a person having epidemic fever, and the disease appearing or spreading therein, Dr. Barraut states—"Not immediately, and in no instance have I seen a person ill with fever, either the remittent or intermittent type, give it to healthy people with whom he came to reside. This does not, however, imply that fever did not show itself in the house sometimes afterwards."

To question XLVIII. relative to the fever spreading, he answers—"I cannot positively and conscientiously state that the fever spread in directions against the prevailing wind," &c., and adds at the end—"The answers I shall give to the remaining questions will, I hope, show

* 1. Contrast that with paragraph 47, Section 2 of his General Report as under:—

"The bilious remittent fever is known to be prevalent in localities where marsh malaria undoubtedly exists, and only shows itself at certain times of the year when the elements of malarious generation are rife. In Mauritius, on the contrary, the Bombay fever shows itself at all seasons, in the cold and bracing winter, and in the hot, sultry, and damp summer, in low and humid grounds, as well as in dry and elevated parts of the Island."

2. "The bilious remittent fever of India is generally characterised by remissions of some kind; the typhus of Mauritius does not offer these remissions; though detected at times, they only constitute the exception and never the rule; the type of the fever is continued, and it has a decided tendency to run a definite course from 15 to 20 days."

4. "Bilious remittent fever, as all paludal fevers, is amenable to treatment by quinine, whilst the Bombay fever is not; Hæmorrhages are frequent with us, whilst in the true malarious bilious remittent that phenomenon is generally absent. To sum up, the tendency of the disease to run a certain course, its continued type, its communicability from person to person so well traced not only in Indian huts," &c.—*Vide* page 12 of Dr. Barraut's Report.

† In answer to question 7.—Have you met with intermittent fever among individuals of other sections of the population who could not possibly have contracted it out of Mauritius; what number of such cases were observed, and with what termination? Dr. Barrrut states—

"Yes, I have seen in my own practice more than 2,000 cases in other sections of the population in the Town of Port Louis, and generally with a successful termination"—P. 28.

‡ Considering that Dr. Barraut had charge of a dispensary for the poor, and that quinine was extremely scarce and could only be issued now and again and very sparingly, and that the bulk of these classes were among the poorer classes living or trying to live under the great sanitary disadvantages so vividly sketched by him, the rate of mortality is very moderate, 5 per cent. of the cases. But the mortality from true Bombay or "Indian typhus" is from 30 to 50 per cent. The quasi-continued form of malarious fever mistaken by him for typhus is referred to in replies of Dr. O'Beaugard, p. 175, Schmidt, 175, Dr. Hannan, 176, Dr. Penand and Dr. Menneville, Dr. Grivot, Dr. Fressanges, &c., 176-7-8-9, and Report of Prisons, 1867, pp. 8 and 9.

that the soil of Port Louis *possesses* elements *eminently* calculated to *engender, foster*, and *propagate* principles admitted by most medical men as *causes of malarious fevers.*"

In reply to the questions relative to the pre-existent or pre-disposing, and to the exciting or determining causes of the epidemic, and to those concerning measures for preventing its return, Dr. Barraut gives very full replies. In these are prominently detailed the sources of paludal emanations and the co-existence of insanitary conditions, chiefly collections of decaying animal and vegetable matter and the like, which are calculated to intensify the action of those emanations to enervate and debilitate persons exposed to their influence, and render them prone to fall under the attacks of malarious fever and greatly to increase the death-rate from that disease.

13. But nowhere in these or his other replies does he even allude to the possible co-existence of Bombay fever, or its assumed insiduous operations during the epidemic, as he afterwards suggested in his special report.

Far from having any such notion at the close of the first or great epidemic, when he wrote those replies of an intermixture of Bombay typhus or its co-existence, in however small a degree, with the fatal epidemic of 1866-67, he states in reply to question LIV.—Is it your opinion that the epidemic now waning may properly be called one of malarious or paludal fever of the intermittent and remittent forms, generally at first distinct and incomplicated, or the forms interchanging and variously complicated in protracted cases, but all essentially malarious or paludal in their nature? "Yes; but with this distinction I consider the remittent, at least as I see it here, as the result of the absorbtion into the system of an animal and vegetable poison, and the pure intermittent of a vegetable poison alone." For as much as he admits all the forms of the epidemic fever, however complicated and interchanging, the intermittent, the remittent, and the quasi-continued, (which afterwards for a time became his pierre d' achoppement), to have been essentially malarious or paludal in their nature, Dr. Barraut cannot have at that time, with his recent experience present to his mind, had any, the least suspicion that there had been mixed up with the epidemic malarious fever or had co-existed with it, in however moderate number or degree, a fever* which in many parts of his brochure upon it and of his special report on the epidemic he has repeatedly declared not to be malarious fever, and has contrasted with the latter as being essentially distinct "in kind" or nature. But he has nowhere in that report distinctly stated that he had for the time changed his opinion as to the paludal nature of the epidemic fever, nor has he positively declared, he has only suggested another fever poison to have been at work at the same time, having assumed its co-existence in Port Louis, where the great mortality took place, and this contrary to his own previous declaration of its having been absent from the town since 1860, and not re-introduced. These suggestions were put forward also without a shadow of proof, and rest only upon assumptions which are untenable, which are inconsistent with well observed facts and carefully noted experience, as well as upon a misapplication of figures and a misunderstanding of pathological definitions, and are contrary as well as to the bare probabilities as to the actual circumstances of the case. In regard to these opinions and suggestions, however, in the entertaining of which for a time, I believe, he stood quite alone, I have before stated he no longer maintains them.

* The Bombay fever.

14. To resume, it has shown, I trust with sufficient clearness, that both in the report of the Commission and that of Dr. Barraut two different kinds of fever, included under the same vernacular name of "Fievre de Bombay," have been long known in Mauritius; these fevers are recognized in both reports as being distinct in origin, nature, and properties, as also in their subjects and results; that equally with the Commission Dr. Barraut does not consider the epidemic fever of Mauritius to have been contagious, and that, while on the one hand in his answers* to the medical questions he admits with them that the epidemic was really one of "malarious fever of the intermittent and remittent forms, generally at first distinct and incomplicated, or the forms interchanging and variously complicated in protracted cases, but in all essentially malarious or paludal in their nature, originating from elements" admitted† by most medical men as causes of malarious fevers and intensified or exasperated by privations and insanitary conditions, on the other hand he makes no allusion to any severe or deadly fever of another kind‡ as underlying or co-existing with the epidemic, and the opinions subsequently broached (and not now maintained) by Dr. Barraut were mere suggestions based upon assumptions and misapprehensions on his part, as also quite contrary to his own previous evidence, not only in matters of opinion but also in matters of fact.

* Given, it is true, many months before his supplementry report was compiled.

† *Vide* Dr. Barraut's answer, p. 191.

‡ Typhoid (or enteric) fever which used to lurk about the purlieus of Port Louis, and at times to become rather frequent (*vide* Military Medical Notes, Appendix X, p. 71, and report on Prison Hospitals, 1867, pp. 9 and 11) showed itself, but not to a great extent, during the epidemic, modified in its symptoms by the malaria or by the co-existence in its subjects of the paludal fever. Since the epidemic of 1867 and the hurricanes of 1868 it has all but disappeared from Port Louis and the Island generally, probably because its ordinary victims, favoring causes, and most of its latent germs were removed thereby.

15. It seems desirable, however, to quote the passage of his report, which seems in particular to have started the opinions expressed by the Sanitary Commissioner with the Government of India, that the true Bombay fever (or Indian or Mauritius typhus of Dr. Barraut) existed in Port Louis and the parts of the Island in which the epidemic raged during 1867; that its description accords with that of the jail fever of Upper India; that the epidemic fever of Mauritius was mainly constituted of that contagious fever, while at the same time, as in the jails of Upper India, a milder intermittent existed. The passage above referred to is 4° of paragraph 47, p. 12. "Bilious remittent fever, as all paludal fevers, is amenable to treatment by quinine, whilst the Bombay fever is not. Hæmorrhages are frequent with us, whilst in the true malarious bilious remittent that phenomenon is generally absent.

"To sum up, the tendency of the disease to run a certain course, its continued type, its communicability from person to person so well traced not only in Indian huts, on board coolie-vessels, or in jails, the *fact of its attacking* an individual *only once*, and leaving him to return to health after a somewhat protracted convalescence, of its not having the sequelæ of remittent fever, and its breaking out when there are conditions of insalubrity favorable for its spread,* leads us to the conclusion that we have to deal with nothing less than typhus fever with its ever-changing types, &c., which have of late years been brought into such remarkable evidence by the labors of the Medical Officers who have served in Upper India."

Probably Dr. Barraut here alludes to the disease known as Umballa or jail fever—that to which the Sanitary Commissioner refers in his memorandum.

16. In the reports which have been received of that fever, mention is made of cases of common intermittent (and the Sanitary Commissioner also refers to this point) having accidently occurred among the prisoners, and to have led many of the medical attendants to overlook for a time the essentially distinct nature of the fatal contagious fever. The intermittent was occurring as an accident among certain of the prisoners at the same time, and might have co-existed in the same subject with the real jail fever. Putting aside the accidental concurrence of ague in the prisons, what was the nature of that jail fever, and is there any reason to suppose it has even existed in Mauritius? The disease is described to have been the recurrent fever, a disease well known in Europe, and not unfamiliar to several medical men residing in Mauritius before, during and after the epidemic of 1867. It is a *continued* and contagious fever, depending on a specific poison, having no necessary connection or alliance with marsh malaria, and by all the best authorities on the subject (Dr. Christison, Sir W. Jenner, Wardell Murchison, &c.) is held to be distinct from typhus fever. To note the salient characteristics of "recurrent fever," the attack, which is sudden, lasts seven days with greater or less intensity, at the end of which time it abruptly ends in profuse sweating, the patient coming out of it perfectly free from fever, and all its distressing symptoms well, though weak. But on the 14th day from the beginning of the first attack he is again seized with the fever more severely or less sharply than the first time, and he may die or recover after this second or a third similar attack, commencing usually on the 21st day. Further, far from being at one time the subject of this peculiar fever-conferring immunity, it renders its subject all *the more liable* to subsequent seizures on his being exposed to its contagion. "The recurrence or distinguishing feature of this pyrexia is unknown in any other form of fever." Sir W. Jenner's careful observations, confirmed by the experience of many competent authorities, have established that recurrent fever "is capable† only of giving rise to a similar disease; it can engender no other form of fever, and no other form of fever can engender it.

† Quoted from Reynold's system of Medicine, Vol. I., p. 653, 1866.

"Now on contrasting these peculiarities only with the Bombay fever or typhus," described above by Dr. Barraut as having a tendency to run a definite course (as a continued fever), "from 15 to 20 days" (paragraph 47—2°), "and the fact of its attacking an individual only once and leaving him to return to health after a somewhat protracted convalescence" (paragraph 47—4°), no one can correctly say his description of the true Bombay or Indian typhus fever of Mauritius accords with that of the recurrent fever, as it has been described, and as it is accepted by the Medical Officers to be the jail fever of Upper India.

17. I cannot refrain, however, from protesting in this place against Dr. Barraut's intruding in that paragraph such incorrect pathology as, "that we have to deal with nothing less

* This is another instance of the tendency in the report to mix up and confound things which have no necessary connection.

The disease attacks only where a person has come into relation, direct or indirect, with another who is the subject of it, or under the influence of the latent fever poison lurking in some infected hut or clothing. But its spreading, no more than its originating, does not depend on conditions of insalubrity, though these favor and exasperate. It spreads if the patients be not isolated, and the more quickly and extensively, if the fever emanations become concentrated in an unventilated hut. But, however bad may be the sanitary conditions of the locality, it does not necessarily spread if the patient be isolated, placed in a well-ventilated estate-hospital, and his hut and clothes be immeditately destroyed. It appears that when he struck off the sentence quoted above, Dr. Barraut had in view not typhus, but the distinct disease typhoid (enteric) fever popularly called the fever of bad drainage, which some medical men think may originate or break out as a result of sanitary conditions alone.

than typhus fever with its ever-changing types," and his endeavour to support it by imputing such unwarrantable notions to the "Medical Officers who have served in the Upper Provinces."

Typhus fever does not possess, and has never shown, any change of form or "type," as he styles it, still less "ever-changing types." It is, and always has been, a continued fever, and of it may be affirmed the words I have cited regarding the recurrent fever, it is "capable of giving rise only to a similar disease; it can engender no other form of fever, and no other form of fever can engender it." I must protest equally against his note following the referrence to the Indian Medical Officers' experience in the Upper Provinces. It is difficult to find a right motive for contradicting by a note the beginning of his own 4th section of paragraph 47—"Bilious remittent fever, as all paludal fevers, is amenable to treatment by quinine, whilst Bombay fever is not;" and somehow to connect the alteration with the Medical Officers of Upper India, the note runs thus—

"It is universally acknowledged that quinine has no effect on the Bombay fever, and that large doses of that drug are more hurtful than beneficial; it is only when the fever is subdued and when *intermission* is established that quinine as an antiperiodic is really useful."

18. Now the employment of the terms "intermission" and "antiperiodic" would be quite allowable when applied to malarial or paroxysmal fever, but their employment is altogether unjustifiable in regard to a fever which the writer had, in the beginning of the paragraph to which that note is appended, contrasted with a malarious and paroxysmal fever in these terms—"Bilious remittent fever, as *all paludal* fevers, is *amenable* to treatment by quinine, whilst the Bombay fever is not. Further, the tendency of the disease to run a certain course, its continued type, * * * its attacking an individual only *once* and leaving him to return to health after a somewhat protracted convalescence." Such convalescence in a disease, which is stated to occur only *once* in the same subject, cannot be called an intermission without doing violence to the meaning of the term, and, under the circumstances, to something besides. Nor can the use of quinine as a tonic during convalescence be fairly called its "antiperiodic" use without assuming that which had before been denied, a second attack, against the probable period of which return the quinine was to be given as a preventive.

19. The use of the words, however, in connection with the hazy expression of the "ever-changing types" of typhus fever; the coquetting with the term bilious remittent fever; the strange adaptation of figures and facts which, in the judgment of the recorders of them, point in quite a different direction; the unwarranted use of certain medical terms, notably at page 25, paragraph 76, of "intermittent typhus," which is simply an invention, it were hard to characterise.

On a reference being made to p. 464 of the work named in the footnote indicated after the expression "intermittent typhus," no such term or misnomer can be found, nor does the article treat of typhus but of recurrent fever, the essential, distinct, and unchangeable nature of which, as a *continued* fever, have already been given on the highest authorities respecting fevers. There is simply a mention of the opinions of a Dr. Peacock and a Dr. Paterson. The former considering that recurrent fever seems to "approach in its nature some forms of remittent fever on account of the repetition of the rigors often at regular periods for two or three days," and the latter being struck with the marked periodicity of its recurrences "which come on like a fit of ague almost to an hour." Next follows a remark respecting the enlargement of the spleen, pointing to a malarious origin. But this is then met by the observation that epidemics of recurrent fever, as shown by Murchison, appear to commence, progress and decline quite irrespectively of the season of the year, the specific poison, its contagious nature, &c.

But it were needless at present to follow and comment further upon the report from which the Sanitary Commissioner has quoted; and indeed but for its having attracted the attention of that high authority, I should never have referred to, but have treated it, as has been done by the other members of my profession in Mauritius.

20. I can honestly affirm from my own close observation, and because I know that I am supported by the great body* of the profession, men of long and extensive experience, and of careful and exact habits of observation, not only that the epidemics of 1866-67 and 1867-68 were purely and simply of malarious or paludal fever, and were not in any sense or degree of a contagious or communicable nature,† but also that recurrent fever, the contagious jail fever of Upper India, has not yet appeared in Mauritius. I shall add the earnest hope that it may never be introduced here, for it would occasion a lamentable additional mortality, extending to all classes of the community.

* Some of whom have served or lived in Madras, Bengal, Upper India, China, the West Indies, Java, Algiers, or the Coast of Africa, Madagascar, or other parts of the world.

† A reservation is made in my Report of Prison Sickness (1867, note, pp. 9 and 10) respecting the moderate number of instances of typhoid (enteric) fever probably occurring at that time, and in regard to certain cases of tropical remittent at times becoming communicable, but this most likely (2)—*vide* Prison Report (note, p. 7) attached hereto.

But it was introduced into Bourbon with immigrants from Bengal in 1864, and spread in the localities to which these coolies were distributed, occasioning a heavy mortality among them

and others in spite even of the rigid isolation and other preventive measures which were taken after the contagious nature of the disease had become manifest.

That occurrence and its results so well illustrates all the points raised in the memorandum of the Sanitary Commissioner that I shall conclude with a sketch of its main features. Some particulars regarding it I obtained personally when in Bourbon on sick leave in 1868, but it is mainly from an interesting paper* by the French Naval Medical Officer (Dr. Macauliffe) who had charge of the Lazaret, to which the immigrants were transferred on arrival (according to the practice then prevailing at Bourbon in respect of all coolies coming from India for observation during 10 days), and who, after their distribution, had charge of one of the special hospitals opened on an estate to which a band of them had communicated the fever.

* Published in the Archives de Medicine Navale, 1868, T. IX.

21. The ship *Eastern Empire* of 1014 tons brought 450 persons from Bengal, and had been furnished at Calcutta with the usual bill of health, couched in very general terms, and making no mention of cases of the ordinary or of any communicable disease. The ship's Doctor reported that six coolies and a child died during the passage from diarrhœa, dysentery, and debility; that the coolies and their families were in good health on arrival at Bourbon, with the exception of 10, who were "convalescence from diarrhœa, fever, or dysentery." The Medical Officer, however, found the sick list of the batch of coolies more numerous (25) on their reaching the quarantine station,* and that it comprised, besides minor ailments, several fever cases and four of dysentery in the last extremity of weakness. On the ship's Doctor being requested to give information relative to the kind of fever presented by his people, he stated they were instances of remittent or of intermittent (malarious) fever. The close observation of these cases, after their admission to the quarantine hospital by the Medical Officer, led him to conclude that it was with malarious fever only he had to deal, and he was strengthened in that opinion by the fact that the coolies had been recruited at the end of the sickly season of 1864, and that when in Calcutta they had been exposed to the hurricane of 4th October of that year.

* Situated in an isolated nook of an uninhabited part of the coast to which the coolies were transferred by water.

22. During the term of isolation 26 fever cases in all came under Dr. Macauliffe's notice, and in regard to them he reported that they all presented signs of malarious impregnation which showed itself by attacks of fever, some of the intermittent, others of the remittent, and few of the pseudo-continued form of that disease, and that quinine seemed to be the appropriate treatment, a circumstance which confirmed him in the conviction that the patients had paludal fever only. He had no suspicion then of the presence of another and distinct disease lurking among them, though he was struck with the fact that great debility persisted an unusual time after the attack. Of jaundice, which is almost a constant occurrence in the jail fever of Upper India, though less frequent in the recurrent fever of Europe, the Medical Officer observed only one instance, and this he considered an accidental accompaniment, there being no sweating crises, as there was in the cases of fever (and jaundice too) which he had afterwards to treat in the country.

But he had not sufficient length of time to watch the course of the disease at the Lazaret, even supposing that the solitary jaundiced case had been one of recurrent fever, the time of isolation (ten days) covering only the period of one attack and part of an interval of the apyrexia of that disease. One coolie died at the Lazaret of a "pernicious attack of paludal fever."

23. On the coolies being removed from the Lazaret to the depôt in St. Denis, 12 of them affected with fever were sent to the colonial hospital, and several cases subsequently, among whom a considerable mortality took place. The distribution of the coolies to estates was being effected in the meantime, and it was only when several* Indian employés of the depôt at St. Denis and hospital attendants fell sick of fever with jaundice, and the same evidence of communication of fever to the healthy men of the estates to which bands of the immigrant had been allotted, that it became evident a contagious fever had been introduced. That fever spread and caused great loss and consternation in the Island. It has been carefully described by Dr. Azema, as well as by Dr. Macauliffe and others, and by all called the "fievre a rectuites" the recurrent fever or jail fever of Upper India. In this invasion of fever, as in those of the jails they are co-existed instances of malarious fever which threw the Medical Officers off their guard, and it was only after a time that they were convinced by unmistakeable evidence that there had come among them, with these paludal fever cases, another and distinct disease, the contagious remittent fever.

* Thirteen in all, none of whom had belonged to the batch of coolies, nor been sick of fever.

24. The whole history of the outbreak in Bourbon would seem to show, though this is not mentioned, that there being no suspicion of contagious disease, new clothing had not been issued to the coolies after ablution on board ship and at the Lazaret, nor the old and soiled, as well as their other effects washed and aired before being removed thence, and that there was the usual bartering or acquisition of clothing and other effects by the depôt and hospital employés at St.

Denis, and that thence the disease had been transmitted to the Indians in town who had not before had fever.

The case of the introduction of a contagious and very fatal fever, as well as the occurrence of other similar outbreaks and heavy mortality, have naturally made the people and the authorities of the adjoining Island of Bourbon very suspicious and watchful in the matter of quarantine. At first and for some time the epidemic fever of Mauritius was suspected by them to be communicable, and pratique refused; nay at their earnest desire quarantine against arrivals from Mauritius was established at the (British) Seychelles Islands, because the French mail steamers called there *en route* to Bourbon and Mauritius.

But the observation of cases of the Mauritius epidemic fever on board these very steamers and French ships; the occurrence of deaths from it; the free intermixture of healthy passengeners from Bourbon with persons embarked at Mauritius very ill of the fever; their making the voyage to Suez together;* the arrival of persons in quarantine, some with fever, others who had it, and the latter remaining unaffected; persons having returns of the Mauritius epidemic fever and mixing freely with the inhabitants of Seychelles or Bourbon, in fact repeated crucial experience, soon satisfied the authorities and people of Bourbon that our epidemic fever was not communicable, and free pratique was given and never afterwards withheld.

* See Reports on fever, p. 218, Appendix p. 81.

25. Respecting the recommendation contained in the concluding part of the Sanitary Commissioner's memorandum, I have the honor to observe that, from the painful experience of the last 20 or 30 years during which this Island has been visited by several fatal epidemics and local outbreaks of disease, there is, perhaps, no community in the world among which suspicion and watchfulness in regard to disease being communicable, and the practice of having recourse to deodorants and disinfectants* exist to the same extent as in Mauritius.

* Which are kept and sold at a moderate charge even in small shops.

Various preparations,—carbolic acid, carbolates, chlorides, &c.,—were freely used, especially in the early months of 1867, but at last without any regard to disinfecting, because the most credulous and fearful among the population were, almost without exception, convinced that this time the disease raging among them was not communicable. Persons living at a distance from the localities in which fever prevailed, and in which it had not appeared,* continued to use such means until they also were satisfied by the repeated occurrence of persons coming from Port Louis to live among or with them, sleeping in the same room or hut, or even on the same bed or mat, and without communicating the fever.

* In many even to this date free as regards persons who had not left them and slept in places where paludal malaria were being given off or conveyed by the wind.

No disease could have been put to more severe tests as regards the question of contagiousness than our epidemic fever, for most of the Creoles and Indians have the bad habit of closing up their houses and huts at night. The infrequent cases of the only communicable disease then existing—the typhoid fever—occurring at the same time and often traced and recognized formed the exception which proved the rule as concerned the epidemic fever.

26. Before concluding this communication, I take leave to express a hope that the Sanitary Commissioner who has manifested a warm interest in the well-being of the inhabitants of this Colony, may be moved to bring the weight of his influence to bear upon the Government of India in regard to certain matters which nearly concern their sanitary condition and prospects.

These are—

I., as forming an additional safeguard against the transmission of disease, the furnishing in future from the several ports of India connected with Mauritius of bills of health couched not in general terms respecting the non-existence of plague or pestilence, but containing specific statements of the existence or not of cases of cholera, small-pox, contagious fever or other communicable disease in the harbour or town, or its environs at the given date, such statements being based, if possible, upon reports of the occurrence of such cases of disease, these reports or returns being rendered compulsory by law (as in this colony);

II., that the Government of India will be induced, by the considerations he will submit of the vital importance of precautionary measures, not to consider the authorities in Mauritius unnecessarily careful, and exacting in regard to quarantines of observation and of seclusion, and in using all available means for preventing the introduction of disease by infected persons and clothing, as happened at Bourbon in 1864-65 to the great loss of its Indian population especially; that it may rest assured the Indian immigrants coming to Mauritius shall be properly cared for in well-appointed lazarets and in well-found hospitals, when it may be judged expedient to transfer them thither for a time.

P. S.—In reference to the following observation in memorandum of Sanitary Commissioner with the Government of India, page 201, "the number of deaths among the garrison is not given," I beg to note that full information will be found in 2nd Appendix to Reports, Military Returns and Notes, pp. 51 to 89. The total mortality among the troops from fever alone in 1866 was 27, and consisted of 1 from intermittent, 21 from remittent, 1 from pseudo continued, and 4 from typhoid (enteric) fever. During the first half of 1868, the deaths were continued 1, intermittent 3, remittent 12, total 16; also 1 officer in 1868 and during the 18 months, 11 soldiers' wives, 49 children, and 3 followers.

Extract from Return of Diseases treated in the District Prison Hospitals during 1866 *(Mauritius.)*

Fevers.—But the greatest share of the excess of sickness during the past year is borne under the head of fevers.

Although the admission from this class of disease were nearly a third more numerous in 1866, than in 1865, and considerably exceed those of 1864, still the mortality was proportionately very small in 1866, as will be seen from the subjoined statement:—

1864,	total fever cases admitted	741,	died	63	= 85	per 1,000	of cases.
1865,	„	„	658,	„	37 = 56	„	„
1866,	„	„	918,	„	19 = 20	„	„

As showing the forms of fever which occasioned the sickness and mortality under that head in the District prisons during these several years, the following comparative statement will be useful:—

Years.	Fever.									
	Intermittent.		Remittent.		Typhoid.		Typhus.		Com-continued.	
1864 ...	Admitted	12	Admitted	388	Admitted	6	Admitted	0	Admitted	333
1865 ...	„	8	„	141	„	256	„	0	„	205
1866 ...	„	881	„	219	„	15	„	1	„	252
1864 ...	Died	0	Died	46	Died	2	Died	0	Died	15
1865 ...	„	0	„	15	„	23	„	0	„	2
1866 ...	„	0	„	11	„	3	„	0	„	5

The following table giving the ratio of mortality from the different forms of fever to the numbers attacked therewith will be acceptable so far as the death-rate may be considered a direct test of the virulence of fever and of the hardness of the circumstances and the unfavorable kind of subjects in which it occurred and negatively of the reversed state:—

Years.	Intermittent.	Remittent fever.	Typhoid fever.	Continued fever.
1864 ...	Died 0	Died 46=118: 1,000 of cases.	Died 2=333: 1,000 of cases.	Died 15=46: 1,000 of cases.
1865 ...	„ 0	„ 15=106: 1,000 „	„ 23= 89: 1,000 „	„ 2= 9: 1,000 „
1866 ...	„ 0	„ 11= 50: 1,000 „	„ 3=200: 1,000 „	„ 5=14: 1,000 „

Before referring to the subject of the comparatively increased prevalence and the slight relative mortality of fevers occurring among the prisoners during 1866, the difficulty of exactly apportioning these proportions to each of the different forms of fever according to the received nomenclature must be adverted to; for there is a fever, apparently manifesting different characters in different localities, almost peculiar to the Indian population, contagious in its nature, and generally attended with a heavy mortality, 20 to 40 per cent. of those attacked, which is commonly designated "Bombay fever." This by some medical men is considered to be a kind of

remittent and by others a continued fever; by some called bilious remittent fever; by others typhoid fever, while one Medical Officer brackets both these forms in his returns in respect of cases of "Bombay fever" which he had attended as if he considered its form to be various or doubtful.

It is manifestly desirable, if possible, to eliminate the cases of "Bombay fever" (if any) from the total of the remittent fevers; in order to arrive at the number of cases due to other causes than contagion or infection, and especially of those arising from the same cause as produced the remarkable number of ague cases, which so largely figure in the return of 1866.

The fever or fevers commonly receiving the prefix "Bombay" being ordinarily very fatal, it would afford a strong presumption that few, if any, of the cases entered as remittent, that form having been in excess, had been of "Bombay fever" if the rate of mortality were small; and the presumption would be strengthened if it could be shown that, in either of the Districts having that excess, "Bombay fever" had been causing great loss of life during the period. As regards Black River, the means of making that comparison are not available. But as concerns Pamplemousses, not only was the death-rate in the prison of the District very low in 1866, only 5 : 1,000 as against nearly 7 : 1,000 in 1865, and about 12 in 1864, but also it must be stated that, while in the District prison occurred fully one-half of all the cases of remittent fever among the total District prisoners for the year, "Bombay fever" was at the same time prevalent and causing heavy loss; about two-thirds of the total annual mortality among the engaged Indians on one estate alone, at no great distance from the prison; 55 deaths from "Bombay fever" took place during the year = 162 : 1,000 of its strength, while the mortality of all the District prisons during the period was only at the rate of 3½ : 1,000, and in that particular prison 7½ : 1,000.

As I have no note of the number attacked with "Bombay fever" on that estate, an exact comparison of deaths to seizures cannot be furnished. Probably only a fourth or a third were really attacked with that disease. Assuming, however, that every man on the estate had been seized with it, there would be a ratio of deaths from "Bombay fever" to number attacked of 162 : 1,000 as compared to 51 : 1,000 of deaths to cases of remittent fever in the prison. Be it noted too that, while nearly all these cases of remittent fever were among Indian prisoners, there were 12 colored Creoles (one died) and two Europeans affected with that form of fever. Considering, then, the low rate of mortality from remittent fever in Pamplemousses Prison as compared to that usual from "Bombay fever," the very small loss to sick and strength therein as contrasted with the very heavy death list from "Bombay fever" in the District and especially on an estate at no great distance, and keeping in mind its notoriously contagious nature and the immunity of the bulk of the prisoners and of the sick in hospital, its being confined almost exclusively to the Indian population, and yet that there were two Europeans and 12 Creoles attacked with remittent fever in the prison, there is every probability that the majority (excluding cases of simple, non-contagious bilious remittent fever) were malarious in their nature and of local origin. That inference is strengthened by the fact that at the same time there was a considerable number of the prisoners sick of malarious intermittent fever. These the Medical Officer (Dr. Reilly) notes to have been of the tertian type, but he makes no mention of "Bombay fever" having appeared in the prison during the year. He mentions, however, that, for the first time during upwards of 20 years' residence in Mauritius, he had met with cases of intermittent fever in 1866, numerous instances of its having been also observed by him about the same time among Indians on estates as well as among the general population.

Intermittent fever.—During 1866 no fewer than 331 cases occurred among the District prisoners; of these four were Europeans, three Creoles, and 324 Indians. Nearly all the cases of this disease were met with in the prisons of Pamplemousses (1 European, 3 Creoles, and 16 Indians) and Black River, 299, all Indians; at Riviere-du-Rempart, 10 Indians, and at Grand Port, 2 Europeans. This is a notable fact in the medical history of Mauritius, the occurrence in one year of so considerable a number of cases of well marked ague, a disease so distinctive in its features as to be readily recognized by any one and universally believed to be of malarious origin, a disease besides which, as being of local growth, might also be considered quite new to the Colony, and which was the beginning of the most deadly epedimic to which it has ever been subjected. A few scattered cases of intermittent fever have been observed in former years and almost exclusively among Indians or others who probably had, and as regards soldiers who certainly had had it in India or China, or some other malarious country. Among the Natives of Mauritius, who had never left the Colony, the disease, it may be safely affirmed, had shown itself very rarely indeed prior to 1866.

As regards the District prisons, two instances of intermittent fever were remarked in that of Riviere-du-Rempart in 1862.

During 1863 four cases occurred in the Black River Prison, 20 in that of Riviere-du-Rempart, and three in 1865 in the same gaol. In all these instances the subjects of the disease were Indians.

Of 20 cases admitted to hospital in Pamplemousses Prison during 1866, one was a European, three were colored Creoles, and 16 were Indians.

Continued fever.—Although the admissions somewhat exceeded those of the preceding year, the mortality was very slight, and only about one-third of that of 1862.

Almost the whole of the cases entered under this head took place among the prisoners of Flacq and Plaines Welhems, and were attributed to exposure, to gastro-hepatic derangements, and the like.

From J. GEOGHEGAN, ESQ., Under Secretary to the Government of India, to the Hon'ble R. S. ELLIS, C.B., Chief Secretary to Government of Madras, and the Hon'ble A. EDEN, Secretary to the Government of Bengal, Judicial Department,—Nos. 899-900, dated the 15th February 1870.

WITH reference to the accompanying extract from a letter* from the Chief Medical Officer, Civil Medical Department, Mauritius, I am directed to request that the Government of India may be favoured with the views of the Governor in Council / His Honor the Lieutenant-Governor on the suggestion therein contained for the modification of the form of the bills of health granted to vessels proceeding from Madras / Calcutta to that Colony.

* No. 391, dated 8th December 1869, paragraph 26.

From the Government of India, to Her Majesty's Secretary of State for India,—No. 26, dated Fort William, the 8th March 1870.

WITH reference to your despatch No. 23, dated the 13th May 1869, we transmit for your information copy of a correspondence noted on the margin, on the subject of the epidemic fever which raged in the Island of Mauritius in the year 1867, and the improvements effected in the sanitary condition of the lower classes of the community, and more specially of the time-expired emigrants.

Vide Public despatches to Secretary of State, No. 128 of 1867, dated 12th July, and No. 204 of 1867, dated 28th November.
To Colonial Secretary, Mauritius, No. 2850, dated 6th July 1868.
From ditto, No. 2238A, dated 18th November 1868, with a copy of the report therein referred to.
To the Sanitary Commissioner with the Government of India, No. 775, dated 9th February 1869.
From ditto No. 142, dated 5th March 1869.
To the Colonial Secretary, Mauritius, No. 3022, dated 1st July 1869.
To ditto No. 3303, dated 16th July 1869.
From ditto No. A2970, dated 21st December 1869, and enclosures.
To the Governments of Madras and Bengal, Nos. 899 and 900, dated 15th February 1870.

2. We desire gratefully to acknowledge the exertions which the Mauritius Government is making to improve the sanitary conditions of life among Indian emigrants.

From Her Majesty's Secretary of State for India, to the Government of India,—No. 13, dated London, the 5th May 1870.

THE despatch of your Excellency in Council dated 8th March, No. 26 of 1870, transmitting copy of a correspondence on the subject of the epidemic fever which raged in the Island of Mauritius in the year 1867, and the improvements effected in the sanitary condition of the lower classes of the community and more especially of the time-expired emigrants, has been considered by me in Council.

2. I have communicated to the Secretary of State for the Colonial Department the acknowledgment of your Government to the Mauritius Government for its exertions to improve the sanitary conditions of life among Indian emigrants.

3. The Proceedings of your Excellency in Council in connection with the subject of the despatch under reply have my full approval.

GOVERNMENT OF INDIA.

MILITARY DEPARTMENT.

TREATMENT OF EPIDEMIC CHOLERA.

From Her Majesty's Secretary of State for India, to the Government of India,—No.16, dated London, the 19th May 1870.

I FORWARD herewith some remarks by the Army Sanitary Commission on the valuable report submitted to your Government by Dr. Murray, Inspector General of Hospitals, on the treatment of epidemic cholera.

Remarks by the Army Sanitary Commission on Dr. Murray's Report on the Treatment of Cholera.

1. THE Commission have examined Dr. Murray's Report on the treatment of epidemic cholera with great interest.

It includes points of medical doctrine regarding cholera, which it is unnecessary here to notice, as this part of the subject is at present under enquiry in India.

But it also includes a large amount of practical experience contained in replies by 500 medical officers, who have seen cholera in all parts of India, to special questions addressed to them by Dr. Murray.

The Commission deem it to be of importance to call attention to the leading practical points in these replies and in Dr. Murray's report.

2. The first important practical result is one which confirms all other experience, namely,—

That in fully-developed cholera verging towards or already in collapse, medicines are simply of no use: the condition being beyond human aid. Every remedial agent at all likely to mitigate or cure the disease in its advanced stages has been tried and has failed.

Urgent painful symptoms may sometimes be relieved by medicine, but cure of the disease in its stage of collapse is out of the question, unless nature herself does the work.

3. This result of the inquiry proves that all medical relief which has the cure of cholera for its object, must be directed strenuously and systematically against the very beginnings of the disease; for if these are neglected, or if they fail to be benefited by medicine, the patient may be considered as past cure by medicinal agents.

4. There is a concurrence of testimony that whatever may be the cause of cholera (a subject at present under inquiry in India) attacks of the disease are aggravated by defective sanitary conditions, such as the following:—

Malaria.
Crowding.
Defective ventilation.
Fairs, feasts, and their concomitants.
Sudden atmospheric changes in temperature, rain, &c.
Damp subsoil, tainted ground.
Impure air from nuisances.
Tainted water.
Imperfect conservancy.
Fatigue and exhaustion.
Careless dietetic regimen.
Unripe fruit.
Tainted food.

Every agency, in short, which tends to lower the standard of health and excesses of every kind, especially in the use of intoxicating liquors, predispose to attacks of cholera.

5. Nearly all the medical officers are of opinion that cholera can be communicated to unaffected persons by an infected locality, and the opinion is all but unanimous that when cholera invades a station, the safest thing for troops to do is to leave the locality.

6. A large proportion of medical officers express an opinion that the disease is communicable from person to person. This subject is at present under inquiry in India. The chief practicable step on which nearly all are agreed is the isolation of cholera cases.

7. As regards the disease itself, Dr. Murray's report and evidence recognize the following stages or degrees:—

Malaise, generally present, marked by depression of spirits, want of appetite, torpor of the bowels.

When these symptoms show themselves, great care is required in avoiding all excess, especially in eating and drinking, all fatigue, depressing passions, fear, and the like, and it is at this period that most can be done to prevent cholera from becoming developed. Gentle stimulants and tonics, avoiding fatigue, taking rest, and attending to diet, quinine in moderation during the rainy season, are apparently the most suitable means to adopt. Anodynes, opiates, and carminatives are also useful.

8. If the disease is not checked in this stage or gradation, the *malaise* continues, and there is superadded to it other symptoms of a more advanced and dangerous character.

These are, "a copious light-coloured painless purging," the stools gradually becoming more watery, and at length colourless like rice water, feeble pules, cold breath, countenance dark, eyes congested, scanty urine, wandering cramps.

Usually this more advanced degree has been divided into two stages,—"simple diarrhœa" and "choleraic diarrhœa,"—but Dr. Murray, looking to the extreme risk of one state passing rapidly into the other, classes them together.

9. All are agreed that, from the moment the slightest diarrhœa appears, even in its simplest and mildest form, and before it has passed into rice-water purging, treatment is of vital importance.

10. During this earliest diarrhœal period of cholera, perfect rest and a judicious use of opiates, combined with aromatics, carminatives, or astringents, dilute sulphuric acid in drinks, and other measures adapted to particular symptoms, appear from the evidence collected by Dr. Murray to be the most efficacious remedies.

11. In some regiments measures for ensuring the immediate discovery and treatment of diarrhœa are organized whenever danger appears. But this report and evidence show that it is a matter of life and death that sufferers should be brought under treatment in the state of *malaise* if at all practicable, or at least at the very first appearance of looseness of the bowels, and that most efficient and systematic means should be adopted for this object at all Stations.

It is in this stage that the least delay in bringing the patient under treatment may place him beyond all hope of recovery.

12. What is commonly called the stage of "collapse," follows the diarrhœal stages.

This is the stage in which almost every remedy and method of treatment has been tried without any evidence of benefit.

13. As in the previous stages, there must during collapse be observed perfect rest. Medicines are of no use. There is nothing for them to do. Iced water, ice in morsels, cleanliness, warmth applied externally, avoiding everything likely to agitate or exhaust the sufferer, careful regimen, and waiting the result, may be said to include all that can be done. Doing too much may destroy the last chance of life.

14. If "reaction" takes place, this stage gives scope for all the discrimination of the medical officer in guiding his patient through it. Here also rest is one of the cardinal remedies: patients in this state have died suddenly from trivial exertion. Refined and careful management and the sparing and judicious use of remedies are what are most required.

15. The practical results of Dr. Murray's extended inquiry and report may be briefly summed up as follows:—

1*st*.—That the sanitary condition of stations, bazaars, and towns, especially those in the vicinity of troops, should be rigidly attended to.

2*nd*.—That troops should be thinned out of barracks, or removed from Stations where cholera has shown itself, or threatens to appear.

3*rd*.—That as cholera is a disease curable by medicinal agents only at its very commencement, the efforts of medical officers should be henceforth strenuously directed to the immediate discovery and treatment of the first traces of indisposition among the troops when cholera is at a Station, or in its neighbourhood.

4th.—That to enable precautionary measures to be taken with hope of success, the authorities at all Stations should be kept constantly informed of the appearance of cholera among the civil populations, even at a distance from their Stations.

J. HOPE GRANT, Q.M.G. and *President.*
DOUGLAS GALTON.
JOHN SUTHERLAND.
H. H. MASSY.
T. A. L. MURRAY.
W. E. BAKER.
J. R. MARTIN.
ROBERT RAWLINSON.

WAR OFFICE;
The 16th March 1870.

J. J. FREDERICK,
Secretary, Army Sanitary Commission.

GOVERNMENT OF INDIA.

LEGISLATIVE DEPARTMENT.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Tuesday, the 28th June 1870.

PRESENT:

His Excellency the VICEROY and GOVERNOR GENERAL of India, K.P., G.C.S.I., *Presiding.*
His Excellency the COMMANDER-IN-CHIEF, G.C.B., G.C.S.I.
The Hon'ble JOHN STRACHEY.
The Hon'ble SIR RICHARD TEMPLE, K.C.S.I.
The Hon'ble J. FITZJAMES STEPHEN, Q.C.
The Hon'ble B. H. ELLIS.
Major-General the Hon'ble H. W. NORMAN, C.B.
The Hon'ble F. R. COCKERELL.

MADRAS DISTRICT MUNSIFS' BILL.

The Hon'ble MR. COCKERELL introduced the Bill to consolidate and amend the laws relating to District Munsifs in the Madras Presidency and moved that it be referred to a Select Committee with instructions to report in six weeks. He said that the Bill comprised the re-enactment, in a somewhat abridged and simpler form, of the principal portions of the existing law relating to District Munsifs in the Madras Presidency, together with some additional provisions taken from the Bombay Civil Courts' Act and the Bengal Subordinate Judges' Act. Contrasted with those enactments, the Bill presented the most notable points of distinction in its fourth and sixth sections. The powers, which by those sections were conferred on the High Court, were by the Acts just referred to reserved to the Local Government. The Bill in this matter adopted and proposed to legalize the existing practice. These powers were formerly

vested in the provincial Courts of Appeal. On their abolition the direct control of the Zila Courts, as well as the other principal executive functions of the former courts, devolved on the superior court which was now represented by the High Court. But so far as MR. COCKERELL had been able to ascertain the facts of the case, this result was not brought about, nor was it ever sanctioned by any express provision of the law: hence the subject-matter of the sections just mentioned seemed to present an open question demanding the particular attention of the Committee to which this Bill might be referred. Some of his Hon'ble Colleagues would remember that the question as to the authority on which the power of appointing Munsifs should be conferred underwent considerable discussion at the time of the settlement of the clauses of the Bengal Act; and that, although the power of making such appointments was nominally reserved to the Local Government, it was limited by conditions which in effect gave the High Court a complete control over the individual preferments for the office of Munsif. In the subsequently-passed Bombay Act the power of appointment of the corresponding class of judicial officers was unreservedly given to the Local Government. In both Acts there was this apparent inconsistency that, whilst the power of appointment of those officers was vested in the Local Government, their dismissal from office might be effected by the High Court without any reference to that Government. From these circumstances, MR. COCKERELL would venture to think that the principle of the vesting of these appointments had not yet been settled on any clearly-defined and satisfactory grounds, and that the whole subject demanded re-consideration. The only other provisions of the Bill to which it was necessary to make any special reference at present were contained in section seven. He had explained on a previous occasion the circumstances under which the extension of the pecuniary limits of the jurisdiction of the District Munsifs was proposed. That extension was in regard to suits relating to revenue-paying land scarcely more than nominal, for the effect of the further provision of this section, which substituted the mode of valuing suits of this class prescribed by the Court Fees' Act for that obtaining under the existing law, would probably be to enhance to about three times its present rate the valuation of such suits for the purpose of determining in what court they should be instituted. In other respects, moreover, he thought this provision was important. It supplied a rather marked omission in previous legislation. With the solitary exception of the existing law just referred to, which related exclusively to the courts of the District Munsifs in the Madras Presidency, and was there even only applicable to suits for land, he knew of no law which prescribed any rule as to the valuation of suits for the purpose of determining in what grade of court they should be instituted. The mode of valuation fixed by the former Stamp Laws, or the present Court Fees' Act, was intended for revenue-purposes only and was obligatory for no other purpose. It was possible that in the absence of any express legal provision on this subject, the rule of the Stamp Act or Court Fees' Act had been generally followed, but it was more probable that enquiry would lead to the discovery that there was great diversity of practice in this matter. In this view of the subject, he considered the provision of the Bill as being of special importance. Of course, if ultimately adopted, it would only be applicable to the courts of the Madras Presidency. But though not binding on other courts, it would indicate the principle according to which the question of their jurisdiction in the case of suits, the subject-matter of which was other than a money claim, should be determined. The provision of the Bill, as it stood however, was not adapted to all cases, and would need some modification. There were several classes of suits for which the Court Fees' Act prescribed no mode of valuation, and for such some other rule should be provided.

In the suggestion which he had made when this Bill was last before the Council, as to the propriety of including in the proposed legislation the other civil courts of the Madras Presidency subordinate to the High Court, he referred to the present Zila Courts and Principal Sadr Amíns' Courts. He need only add that if this Bill was referred to a Select Committee, he proposed to prepare and lay before the Committee a revised Bill which would consolidate the existing law relating to these Courts, and deal with the points of difference as to jurisdiction and powers which they presented when contrasted with the corresponding classes of courts in the Presidencies of Bengal and Bombay. If the revised Bill was approved and adopted by the

Committee, it could then be submitted for the consideration of the Local Government and High Court of Madras.

The Motion was put and agreed to.

CUSTOMS DUTIES EXEMPTION BILL.

The Hon'ble SIR R. TEMPLE introduced the Bill to enable the Government of India to exempt goods from customs duties. He had last week fully described the objects of this Bill. It need not be referred to a Select Committee, and he proposed at the next meeting to ask the Council to pass it.

BANK OF BENGAL DIRECTORS' BILL.

The Hon'ble SIR R. TEMPLE also introduced the Bill to enable the Directors of the Bank of Bengal to act by a quorum. He said that this Bill also was of so simple a character that he would not ask the Council to refer it to a Select Committee.

COURT FEES' ACT AMENDMENT BILL.

The Hon'ble MR. COCKERELL introduced the Bill to correct two clerical errors in the Court Fees' Act.

CRIMINAL PROCEDURE BILL.

The Hon'ble MR. STEPHEN moved for leave to introduce a Bill to consolidate and amend the law relating to the procedure of Courts of Criminal Judicature not established by Royal Charter. He said that from its title, the motion might appear somewhat formidable, but in point of fact the Bill was a measure of the smallest kind. It aimed at effecting a reform which might be termed typographical. The Code of Criminal Procedure had been extensively amended last year by Act VIII of 1869, which declared that the Code should be read as if certain new sections were inserted next after certain sections of the Code, and that certain other sections should be substituted for the corresponding sections of the Code which were repealed. The rules of Criminal Procedure were thus contained in two Acts instead of one, and the primary object of the present Bill, which was part of the scheme for the general consolidation of the Indian Statute Law, was to substitute one for two enactments. At the same time the opportunity would be taken to effect a few minor alterations, some of which, though not affecting the general principles of the Code, were of real practical importance. Chapter XIX, for instance, enabled the Magistrate to require security for the good behaviour of persons who would, in England, be termed rogues and vagabonds, and section 301 declared that in the event of any such person failing to furnish the security so required, he should be committed to prison until he furnished the same. The Code contained no provision as to the nature of this imprisonment and great discrepancy of practice accordingly prevailed. In Madras the High Court had left it to the Officer in charge of the Jail to exercise his discretion. But in the Lower Provinces of Bengal, in the North-Western Provinces and in Oudh, it had been ruled that the expression "shall be committed to the Jail" implied simple confinement. The result was that, throughout a great part of the country, many hundreds of persons were practically using the Jails as hotels, and leading lives of utter idleness at a serious cost to the Government. The change which MR. STEPHEN proposed to make would enable the Magistrate, whenever he thought fit, to inflict a sentence of rigorous imprisonment. There were some other small amendments which he would mention when the Bill was introduced.

The Motion was put and agreed to.

The following Select Committee was named:—

On the Bill to consolidate and amend the law relating to District Munsifs in the Madras Presidency:—The Hon'ble Messrs. Stephen and Ellis, and the Mover.

The Council then adjourned to the 5th July 1870.

SIMLA,
The 28th June 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

No. 26 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, JULY 9, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

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No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

SYSTEM OF GIVING ADVANCES TO PROPRIETORS OF LAND FOR THE CONSTRUCTION OF PERMANENT WORKS OF AGRICULTURAL IMPROVEMENT.

From E. C. BAYLEY, ESQ., C.S.I., Secretary to the Government of India, Home Department, to the Secretaries to the Governments of Madras, Bombay, and Bengal,—Nos. 323 to 325, dated Simla, the 2nd June 1870.

THE Governor General in Council has, for some time past, been satisfied that measures might be taken with great advantage, in many parts of India, for extending and improving the system of giving assistance to proprietors of land for the construction of permanent works of agricultural improvement. I am directed to request the attention of —— * to this subject, and to state that His Excellency in Council will be glad to be informed of the views of —— † regarding the measures which might properly be adopted.

* *To Madras and Bombay*—His Excellency the Governor in Council
To Bengal—His Honor the Lieutenant-Governor

† the Government of—*Madras, Bombay, and Bengal.*

2. The Government has always, if not by extensive practice, at least by its legislation, recognized the duty which, in this country, devolves upon it of giving advances of public money for the promotion of agricultural improvements. The system of making such advances, usually called *tuccavee*, has existed more or less in the Bengal Presidency almost from the commencement of our rule. The existing law upon the subject is contained in Regulation II. of 1793, Regulation XIV. of 1793, Regulation III. of 1794, and Regulation VI. of 1795. The security is complete, since the land on which the improvement is made is declared

by the law to be responsible for the repayment of the advances, and they may be recovered by the same processes which are applicable to the recovery of arrears of land revenue.

It appears to the Governor General in Council that it would be desirable to consolidate and amend the existing law on this subject. The provisions of the old enactments that have been quoted are obviously incomplete, and they are, in some respects, hardly suited to the circumstances of the present time.

3. The system under which *tuccavee* advances for permanent improvements have been given in many parts of India is identical in principle with that which has been carried out in the United Kingdom, with admirable results, by means of the Land Improvement Acts. The Governor General in Council believes that this principle may receive a much wider and more systematic development in India than has hitherto been given to it; and he believes that no sounder or more useful principle could be acted upon by a Government which desires to make the resources of the State available for the promotion of the wealth and improvement of the people. There is, perhaps, no country in the world in which the State has so immediate and direct an interest in such questions. The Government of India is not only a Government, but the chief landlord. The land revenue, which yields twenty millions of our annual income, is derived from that portion of the rent which belongs to the State, and not to individual proprietors. There can be no doubt that, throughout the greater part of India, every measure which can be taken for the improvement of the land, and for increasing its productive powers, immediately enhances the value of the property of the State, and adds ultimately to the public resources without the imposition of any fresh burden on any class of the community.

4. The class of works, for the construction of which the assistance of the Government might properly be given to the owners and occupiers of land, would not be difficult to define. Advances of money should be usually given for that description of work only which can be designed and carried out, with a small amount of assistance, under the direction of the local proprietors themselves. These advances should not be made for great works requiring, in their design or construction, engineering skill of a high order, or the employment of large bodies of laborers. Such works, if undertaken by the Government, must necessarily be undertaken through the Department of Public Works. The works for which advances might properly be made would commonly fall into some one of the following classes:—

(1.)—Wells and other works for the storage, supply, or distribution of water for agricultural purposes, and the preparation of land for irrigation;

(2.)—Drainage;

(3.)—The reclaiming of land from rivers;

(4.)—The protection of land from floods;

(5.)—The reclaiming, clearing, and enclosing of waste lands for agricultural purposes;

(6.)—The clearing of land from stones or other obstacles to cultivation.

5. It is believed that it would not be difficult to devise and bring into operation a system under which advances of money might be made by the Government for works of this description, mainly through the agency of the Ditricts Officers of the Government, and with complete security against loss; and the benefits derived from such an application of capital to the permanent improvement of the land, might be of almost incalculable importance. His Excellency in Council is disposed to think that there are no objects to which a

portion of the loans, which it is proposed to raise every year for reproductive works, could be more advantageously and properly devoted. Such portion of the borrowed money of the year as, in the opinion of the Government of India, could be usefully lent for such purposes, would be placed at the disposal of the Local Governments. The extension of irrigation canals, and the development of our railway system, will necessarily stimulate agricultural industry, and the importance of facilitating to the utmost the prosecution of minor works of land improvement will, under such circumstances, be specially great.

6. It appears to the Governor General in Council that no elaborate machinery or expensive staff of officers would be necessary for the gradual development of a system which, in all essential respects, has long been known to and approved by the people. In the existing establishments of the Revenue and Public Works Departments, it is probable that we possess already, in the greater part of India, an organization quite sufficient for the purpose. The character of most of the works would be so simple that the Collector or District Officer, on whom would fall the chief duty of making the advances and of supervising the execution of the works, would find little difficulty in taking all necessary precautions to prevent the occurrence of abuses, and to secure the proper application of the money to the purposes for which it was advanced.

7. It appears to the Governor General in Council that, in revising the law upon this subject, some such provisions as the following might be adopted.

8. Any person desiring to make an improvement in his land, of the character referred to in the fourth paragraph of this letter, would be authorized to make an application to the Collector for an advance of money to enable him to make the improvement.

The Local Government, with the sanction of the Governor General in Council, would be authorized to make rules prescribing the manner in which such applications should be made, and in which enquiries relating to applications should be conducted; for determining the conditions under which advances might be made, and under which they would be repayable; for securing the due expenditure of the advances, the due execution, inspection and maintenance of the work for which the advance was made; and for the keeping and auditing of accounts.

9. Advances would ordinarily be made to the landlord, or to tenants whose interest in the land exceeded the term fixed for the repayment of the advance; but they might, with the landlord's consent, be made to any tenant desirous of making an improvement on the land in his occupation.

10. On receiving an application for an advance, the Collector would make such inquiry as appeared necessary in regard to the propriety of making the advance. If the result of such inquiry should be to satisfy the Collector that the proposed improvement would increase the annual value of the land in which the improvement is to be made, to an amount exceeding the sum to be charged annually upon the land for the repayment of the advance, he would be authorized (subject to the rules referred to in paragraph 8) to grant a certificate sanctioning an advance of money for the purpose of making the improvement. The certificate would state the amount of the advance, the conditions under which it was to be made, and under which it was to be repaid by instalments or otherwise; and it would specify the land which, in the event of the conditions not being fulfilled, would become chargeable for the repayment of the advance.

After the certificate was granted, the Collector would be authorized to make the advance.

11. The law would provide that when any sum stated in the certificate became due, it would be recoverable from the person to whom the advance was

made, or from any person who had become security for repayment, as if it were an arrear of land revenue due by the person to whom the advance was made, or by his security. If any sum could not be so recovered, it would be recoverable as if it were an arrear of revenue due on the land specified in the certificate.

Any sums expended by the Collector, in accordance with the rules referred to in paragraph 8, in making local inquiries, or otherwise in carrying into effect the provisions of the law in behalf of a person applying for an advance, would be recoverable in the same manner.

12. It is hardly necessary to repeat that the present proposals refer only to advances for works of permanent agricultural improvement. The Governor General in Council is aware that a vicious system formerly prevailed in some parts of India, under which nominal advances, called *tuccavee*, were often made to liquidate balances of Government revenue, and for other temporary purposes. Such advances, unless under very exceptional circumstances, were clearly incompatible with good revenue administration, and they had nothing in common with the system which it is now proposed to introduce.

13. The Governor General in Council requests that ——* will be good enough to state any opinions which he may hold in regard to the subject of this letter, and that he will favor the Government of India with any recommendations, the adoption of which may appear to him likely to increase the usefulness of the measures, of which a sketch has now been given.

* *To Madras and Bombay* — His Excellency the Governor in Council.
To Bengal — His Honor the Lieutenant-Governor.

14. If ——* should concur with the Government of India in the views stated in this letter, and should consider legislation on the subject desirable, I am to request that ——† will state whether, in his opinion, it would be expedient to pass in the Council of the Governor General a law applicable to ——‡ as well as to other parts of India, or whether ——† would prefer to deal with the subject in his own Council.

* *To Madras and Bombay* — His Excellency the Governor in Council
To Bengal — His Honor the Lieutenant-Governor

† *To Madras and Bombay* — His Excellency
To Bengal — His Honor

‡ Madras, Bombay, Bengal.

From E. C. BAYLEY, ESQ., C.S.I., Secretary to the Government of India, Home Department, to the Secretaries to the Governments of the North-Western Provinces and the Punjab; the Chief Commissioners of Oudh, Central Provinces, British Burmah and Coorg; and the Resident at Hyderabad,—Nos. 326 to 332, dated Simla, the 2nd June 1870.

THE Governor General in Council has, for some time past, been satisfied that measures might be taken with great advantage, in many parts of India, for extending and improving the system of giving assistance to proprietors of land for the construction of permanent works of agricultural improvement. I am directed to request ——* to this subject, and to state that His Excellency in Council will be glad to be informed of ——† regarding the measures which might properly be adopted.

* *To North-Western Provinces and Punjab* — the attention of His Honor the Lieutenant-Governor
To Chief Commissioner and Resident — your attention

† *To North-Western Provinces and Punjab* — the views of the Lieutenant-Governor
To Chief Commissioner and Resident—your views

2. The Government has always, if not by extensive practice, at least by its legislation, recognized the duty which, in this country, devolves upon it of giving advances of public money for the promotion of agricultural improvements. The system of making such advances, usually called *tuccavee*, has existed more or less in the Bengal Presidency almost from the commencement of our rule. The existing law upon the subject is contained in Regulation II. of 1793, Regulation XIV. of 1793, Regulation III. of 1794, and Regulation VI. of 1795. The security is complete, since the land on which the improvement is made is declared by the law to be responsible for the repayment of the advances, and they may be recovered by the same processes which are applicable to the recovery of arrears of land revenue.

It appears to the Governor General in Council that it would be desirable to consolidate and amend the existing law on this subject. The provisions of the old enactments that have been quoted are obviously incomplete, and they are, in some respects, hardly suited to the circumstances of the present time.

3. The system under which *tuccavee* advances for permanent improvements have been given in many parts of India is identical in principle with that which has been carried out in the United Kingdom, with admirable results, by means of the Land Improvement Acts. The Governor General in Council believes that this principle may receive a much wider and more systematic development in India than has hitherto been given to it; and he believes that no sounder or more useful principle could be acted upon by a Government which desires to make the resources of the State available for the promotion of the wealth and improvement of the people. There is perhaps no country in the world in which the State has so immediate and direct an interest in such questions. The Government of India is not only a Government, but the chief landlord. The land revenue, which yields twenty millions of our annual income, is derived from that portion of the rent which belongs to the State, and not to individual proprietors. There can be no doubt that, throughout the greater part of India, every measure which can be taken for the improvement of the land, and for increasing its productive powers, immediately enhances the value of the property of the State, and adds ultimately to the public resources without the imposition of any fresh burden on any class of the community.

4. The class of works, for the construction of which the assistance of the Government might properly be given to the owners and occupiers of land, would not be difficult to define. Advances of money should be usually given for that description of work only which can be designed and carried out, with a small amount of assistance, under the direction of the local proprietors themselves. These advances should not be made for great works requiring, in their design or construction, engineering skill of a high order, or the employment of large bodies of laborers. Such works, if undertaken by the Government, must necessarily be undertaken through the Department of Public Works. The works for which advances might properly be made would commonly fall into some one of the following classes:—

(1.)—Wells and other works for the storage, supply, or distribution of water for agricultural purposes, and the preparation of land for irrigation;

(2.)—Drainage;

(3.)—The reclaiming of land from rivers;

(4.)—The protection of land from floods;

(5.)—The reclaiming, clearing, and enclosing of waste lands for agricultural purposes;

(6.)—The clearing of land from stones or other obstacles to cultivation.

5. It is believed that it would not be difficult to devise and bring into operation a system under which advances of money might be made by the Government for works of this description, mainly through the agency of the District Officers of the Government, and with complete security against loss; and the benefits derived from such an application of capital to the permanent improvement of the land might be of almost incalculable importance. His Excellency in Council is disposed to think that there are no objects to which a portion of the loans, which it is proposed to raise every year for reproductive works, could be more advantageously and properly devoted. Such portion of the borrowed money of the year as, in the opinion of the Government of India, could be usefully lent for such purposes, would be placed at the disposal of the Local Governments. The extension of irrigation canals, and the development of our railway system, will necessarily

stimulate agricultural industry, and the importance of facilitating to the utmost the prosecution of minor works of land improvement will, under such circumstances, be specially great.

6. It appears to the Governor General in Council that no elaborate machinery or expensive staff of officers would be necessary for the gradual development of a system which, in all essential respects, has long been known to and approved by the people. In the existing establishments of the Revenue and Public Works Departments it is probable that we possess already, in the greater part of India, an organization quite sufficient for the purpose. The character of most of the works would be so simple that the Collector or District Officer, on whom would fall the chief duty of making the advances and of supervising the execution of the works, would find little difficulty in taking all necessary precautions to prevent the occurrence of abuses, and to secure the proper application of the money to the purposes for which it was advanced.

7. It appears to the Governor General in Council that, in revising the law upon this subject, some such provisions as the following might be adopted.

8. Any person desiring to make an improvement in his land, of the character referred to in the fourth paragraph of this letter, would be authorized to make an application to the Collector for an advance of money to enable him to make the improvement.

The Local Government, with the sanction of the Governor General in Council, would be authorized to make rules prescribing the manner in which such applications should be made, and in which inquiries relating to applications should be conducted; for determining the conditions under which advances might be made, and under which they would be repayable; for securing the due expenditure of the advances; the due execution, inspection, and maintenance of the work for which the advance was made; and for the keeping and auditing of accounts.

9. Advances would ordinarily be made to the landlord, or to tenants whose interest in the land exceeded the term fixed for the repayment of the advance; but they might, with the landlord's consent, be made to any tenant desirous of making an improvement on the land in his occupation.

10. On receiving an application for an advance, the Collector would make such inquiry as appeared necessary in regard to the propriety of making the advance. If the result of such inquiry should be to satisfy the Collector that the proposed improvement would increase the annual value of the land in which the improvement is to be made, to an amount exceeding the sum to be charged annually upon the land for the repayment of the advance, he would be authorized (subject to the rules referred to in paragraph 8) to grant a certificate sanctioning an advance of money for the purpose of making the improvement. The certificate would state the amount of the advance, the conditions under which it was to be made, and under which it was to be repaid by instalments or otherwise; and it would specify the land which, in the event of the conditions not being fulfilled, would become chargeable for the repayment of the advance.

After the certificate was granted the Collector would be authorized to make the advance.

11. The law would provide that when any sum stated in the certificate became due, it would be recoverable from the person to whom the advance was made, or from any person who had become security for repayment, as if it were an arrear of land revenue due by the person to whom the advance was made, or by his security. If any sum could not be so recovered, it would be recoverable as if it were an arrear of revenue due on the land specified in the certificate.

Any sums expended by the Collector, in accordance with the rules referred to in paragraph 8, in making local enquiries, or otherwise in carrying into effect

the provisions of the law in behalf of a person applying for an advance, would be recoverable in the same manner.

12. It is hardly necessary to repeat that the present proposals refer only to advances for works of permanent agricultural improvement. The Governor General in Council is aware that a vicious system formerly prevailed in some parts of India, under which nominal advances, called *tuccavee*, were often made to liquidate balances of Government revenue, and for other temporary purposes. Such advances, unless under very exceptional circumstances, were clearly incompatible with good revenue administration, and they had nothing in common with the system which it is now proposed to introduce.

13. The Governor General in Council requests that——* will be good enough to state any opinions which $\frac{\text{he}}{\text{you}}$ may hold in regard to the subject of this letter, and that $\frac{\text{he}}{\text{you}}$ will favor the Government of India with any recommendations, the adoption of which may appear to $\frac{\text{him}}{\text{you}}$ likely to increase the usefulness of the measures, of which a sketch has now been given.

* *To North-Western Provinces and Punjab* — His Honor the Lieutenant-Governor
To Chief Commissioners and Resident — you

14. I am to request the favor of a reply to this letter with as little delay as may be practicable.

APPEALS TO HER MAJESTY IN COUNCIL IN CASES INVOLVING DISPUTED BOUNDARIES, BUT IN WHICH NO QUESTION OF TITLE IS RAISED.

From E. C. BAYLEY, ESQ., C.S.I., Secretary to the Government of India, Home Department, to the Secretaries to the Governments of Fort St. George, Bombay, Bengal, and the North-Western Provinces,—Nos. 907-10, dated Simla, the 27th May 1870.

I AM directed to transmit the accompanying copy of a despatch from Her Majesty's Secretary of State for India, No. 10, dated the 10th March 1870, and of the communication therein enclosed from the Standing Council to the India Office, relative to appeals to Her Majesty in Council in cases involving disputed boundaries, but in which no question of title is raised.

2. I am to request that you will be so good as to submit these papers to the Government of —— * and to move $\frac{\text{His Excellency in Council}}{\text{the Hon'ble the Lieutenant-Governor}}$ to favor the Government of India (after consultation with the local High Court)† with any remarks on Mr. Forsyth's suggestions, and on the general question raised in the third paragraph of the Secretary of State's despatch, namely, whether it be not desirable to limit all appeals from India to questions of law only.

* Fort St. George.
Bombay.
Bengal.
North-Western Provinces.

† These words omitted in the letter to Bengal.

From E. C. BAYLEY, ESQ., C.S.I., Secretary to the Government of India, Home Department, to the Registrar of the High Court of Judicature, Calcutta,—No. 911, dated Simla, the 27th May 1870.

I AM directed to transmit the accompanying copy of a despatch from Her Majesty's Secretary of State for India, No. 10, dated the 10th March 1870, and of the communication therein enclosed from the Standing Council to the India Office, relative to appeals to Her Majesty in Council in cases involving disputed boundaries, but in which no question of title is raised.

2. I am to request that you will be so good as to submit these papers to the High Court and to move the Hon'ble the Chief Justice and Judges to favor the Government of India with any remarks on Mr. Forsyth's suggestions, and on the general question raised in the third paragraph of the Secretary of State's despatch, namely, whether it be not desirable to limit all appeals from India to questions of law only.

Judicial.
No. 10.

INDIA OFFICE;
London, the 10*th March* 1870.

To His Excellency the Right Hon'ble the Governor General of India in Council.

MY LORD,—I forward herewith copy of a communication from Mr. Forsyth, the Standing Counsel to this Office, relative to appeals to Her Majesty the Queen in Council in cases involving disputed boundaries, but in which no question of title is raised.

2. I desire to be furnished with the opinion of your Excellency in Council, after consultation with the various Local Government and High Courts, on Mr. Forsyth's suggestions.

3. I am inclined to doubt the propriety of exempting any one class of cases from liability to appeal, for all the arguments which may be urged against the expediency of deciding questions of boundary or disputed evidence by a Court of Appeal in this country may be frequently applicable, with equal force, to other appeals in cases where a conflict of testimony occurs. But the whole question is worthy of consideration, whether it be not desirable to limit all appeals from India to questions of law only. Where the local tribunals are well constituted, it is obvious that decisions on matters of fact, with the advantages of oral evidence and confrontation of the witnesses, can be much matter made on the spot than by any Court of Appeal at a distance. It is probable that the time has arrived in India when the local Courts may be trusted, as juries are in this country, to dispose finally of all controverted facts.

4. If, on investigation, your Lordship in Council should think that this principle can be acted on, it would be necessary to alter your procedure in Courts of Appeal, so as to enable those tribunals when dissatisfied with a decision on the facts, instead of reversing the judgment, as it present, to remit the case for a new trial before the same or some other Court in the locality.

5. When you have obtained the information required, I desire that it may be carefully considered by your Excellency's Government, and transmitted to me, with the opinion of your Lordship in Council, both on the specific and on the general question, as a foundation for legislation in Parliament.

I have the honor to be,

MY LORD,

Your Lordship's most obedient, humble Servant,

ARGYLL.

From W. FORSYTH, ESQ., to His Grace the DUKE OF ARGYLL, &c., &c., &c.,—dated Temple, the 6th December 1869.

THERE is a class of appeals which come over from India leading to a great deal of useless and expensive litigation, and in which, I think, some change ought to be made. I allude to questions of disputed boundary, where the only question is, what are the proper boundaries of the disputed lands. They are generally accompanied by Native Indian maps which are hopelessly unintelligible. In almost all these cases the Judicial Committee of the Privy Council upholds the decree of the Court appealed from, as it is reasonable to suppose they would. What I venture to suggest is, that in all such cases where no question of title is involved, the right of appeal to the Queen in Council should be taken away, and the High Court of the Presidency should appoint a surveyor of engineer with or without a barrister, as the case may require, to go to the spot and make a survey map and report, and upon receiving these the High Court should *finally* decide the case. For this purpose, I think, it would be necessary to pass a short Imperial Act, as the Indian Government could not of itself pass an Act taking away a right of appeal which is given by Act of Parliament. This Imperial Act might empower the Indian Government to pass the requisite Act and take away the right of appeal. I believe that if your Grace were to consult the members of the Judicial Committee, they would be found to be in favor of my proposal.

OCCURRENCE OF COAL IN THE COUNTRY BETWEEN BILASPUR AND RANCHI.

From T. OLDHAM, ESQ., LL. D., Superintendent of the Geological Survey of India, to the Secretary to the Government of India, Home Department,—No. 749, dated Calcutta, the 14th June 1870.

IN continuation of Report on the Coal at Korba, in Bilaspúr, submitted with my letter No. 727, dated 17th May 1870, I have now the honor to send a brief Note, also by Mr. W. T. Blanford, on the extension of the coal rocks to the eastwards and north-eastwards.

2. All these papers bear out the promise of a very large area and amount of fairly good fuel in the country referred to, which will at some future time prove most valuable.

Note by MR. W. T. BLANFORD, *Deputy Superintendent, Geological Survey of India, on the occurrence of Coal, east of Chatisgarh, in the country between Bilaspúr and Ranchi,—dated Calcutta, the* 31*st May* 1870.

THE coal-bearing (Damuda) beds of Korba extend for about *forty miles* to the eastward, as far as Rábkúb, in Udipúr (Oodeypore). They also extend far to the south-east towards Gángpúr, and to the northwards towards Sirgúja, and in all probability are continuous, or nearly so, with the deposits of the same nature known to occur in those Districts.

Main Pat and the neighbouring hills, and all the country on the road from Main Pat through Chándargarh and Jashpúr to Ránchi, consist of metamorphic rocks with the exception of a cap of trap and laterite on Main Pat.

The lateness of the season* prevented my searching to any extent for coal seams, indications of the existence of which were afforded by the occurrence of fragments of coal in the rivers, especially in the Mánd. I found a few seams near Chitra, twelve miles west of Rábkúb and nearly thirty east of Korba. Two or three are seen in the Mánd about three to four miles east north-east of Chitra, but they are only from a foot to 18 inches in thickness. In a small stream, the Kopa Naddí, which runs south of Chitra, one seam about three feet in thickness is seen near the village of Tendúmúri, more than a mile south-west of Chitra. It is nearly horizontal, having a very low irregular dip to the west or south-west. Part consists of fair coal, the remainder is shaley.

* After the end of April I had still 250 miles to march to Hazaribagh.

The only seam examined from which it is possible that a useful supply of fuel might be obtained, is exposed in the same stream rather nearer to Chitra, being about a mile from that village, close to the boundary of the village of Tendúmúri. It is very badly seen, but appears to be of considerable thickness, perhaps 20 feet. The upper portion is so much decomposed that no trustworthy estimate could be formed of the quality without digging into the seam; the lower portion appeared to be fair in places. The dip is about 15° to north north-west.

The villagers, as usual, would give no information, so that I could only trace out the coal seams by the laborious process of searching the beds of the streams, and from want of time I was unable to ascertain whence the greater portion of the fragments seen in the Mánd were derived; but when passing through Ránchi, Lieutenant Sale, in charge of the Chota Nágpúr Topographical Survey Party, told me he had found a seam of coal about four miles north-west of Rábkúb in a small stream running into the Mánd, and it is probable that this may be the source of the blocks I saw on the river bed.

I should add that several coal localities have been lately found by the Officers of the Topographical Survey and recorded in their maps. They are all north of Korba and Udipúr.

When passing through Jashpúr, the Rajah told me that coal occurred in his territory in the Khurea country, twenty-four miles north-west of Jashpúr Nagar. This would be about one hundred miles or rather more west by south of Ránchi.

GOVERNMENT OF INDIA.

LEGISLATIVE DEPARTMENT.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Tuesday, the 5th July 1870.

PRESENT:

His Excellency the VICEROY and GOVERNOR GENERAL of India, K.P., G.C.S.I., *Presiding.*
His Excellency the COMMANDER-IN-CHIEF, G.C.B., G.C.S.I.
The Hon'ble JOHN STRACHEY.
The Hon'ble SIR RICHARD TEMPLE, K.C.S.I.
The Hon'ble J. FITZJAMES STEPHEN, Q.C.
The Hon'ble B. H. ELLIS.
Major-General the Hon'ble H. W. NORMAN, C.B.
The Hon'ble F. R. COCKERELL.

CUSTOMS DUTIES EXEMPTION BILL.

The Hon'ble SIR R. TEMPLE moved that the Bill to enable the Government of India to exempt goods from Customs Duties be passed.

The Motion was put and agreed to.

BANK OF BENGAL DIRECTORS' BILL.

The Hon'ble SIR R. TEMPLE also moved that the Bill to enable the Directors of the Bank of Bengal to act by a quorum be passed.

The Motion was put and agreed to.

COURT FEES' ACT AMENDMENT BILL.

The Hon'ble MR. COCKERELL moved that the Bill to correct two clerical errors in the Court Fees' Act be passed.

The Motion was put and agreed to.

COINAGE AND MINT BILL.

The Hon'ble MR. STEPHEN moved for leave to introduce a Bill to consolidate and amend the laws relating to Coinage and the Mint. He said that this Bill formed part of the scheme for consolidating the statutory law of British India. It would replace three ill-drawn Regulations and two Acts, and would, in addition to the provisions therein contained, authorize the destruction of light-weight, called-in, and counterfeit coin. If leave were given to introduce the Bill, it would be carefully settled in consultation with the Financial Department.

Leave was granted.

The Council then adjourned to the 19th July 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

SIMLA,
The 5th July 1870.

No. 27 of 1870.

SUPPLEMENT TO The Gazette of India.

SIMLA, SATURDAY, JULY 16, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

Non-Subscribers to the GAZETTE *may receive the* SUPPLEMENT *separately on a payment of six Rupees per annum if delivered in Calcutta, or nine Rupees four annas if sent by Post.*

No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

SANITARY ADMINISTRATION.

From DR. J. M. CUNINGHAM, Sanitary Commissioner with the Government of India, to the Secretary to the Government of India, Home Department,—No. 183, dated Simla, the 28th May 1870.

IN accordance with the orders of the Government conveyed in your No. 461, dated the 27th October 1869, and with reference to the other letters noted in the margin, I have the honor to submit a general review of the annual reports of the local Sanitary Commissioners for 1868.

From	Home Department	No.	391,	dated	1st September	1869.
To	„	„	949,	„	11th October	„
From	„	„	461,	„	27th „	„
„	„	„	55,	„	1st March	1870.
„	„	„	62,	„	7th „	„
„	„	„	80,	„	29th „	„

2. These reports reached this Office in the following order and on the dates which are noted opposite to each :—

For the Central Provinces, on 3rd September 1869.
„ Oudh, on 26th October 1869.
„ North-Western Provinces, on 28th October 1869.
„ Punjab, on 6th December 1869.
„ Central Provinces (supplementary report on cholera), on 21st February 1870.
„ Bengal, on 13th April 1870.
„ British Burmah, on 25th May 1870.

It will thus be seen that out of these five reports for the year 1868, two of them—those for Bengal and British Burmah—were not received till after the first quarter of 1870. As remarked in my letter No. 8, dated the 5th January, some exceptional difficulties were to be anticipated in the first year of local sanitary administration, and delay in the preparation of the first annual reports is readily accounted for.

3. Great delay has, however, occurred, and as the time has now arrived at which I should be in a position to consider the general sanitary history of 1869, it does not appear advisable that I should discuss at any great length the reports of 1868. I propose therefore to confine myself to a short review of the main facts of interest which they contain, and I shall then take the opportuinity of adding a few suggestions as to the manner in which it appears to me that the annual reports should in future be prepared.

Sanitary Report of the Central Provinces. Meteorology.

4. The report of the Sanitary Commissioner for the Central Provinces contains a clear and succinct account of his proceedings during the year under review. Under his care, measures have been adopted for obtaining a more accurate register of meteorological phenomena in the Province. More reliable rain gauges were being supplied, and greater attention devoted to the mode of measurement. Additional stations for meteorological observations had also been sanctioned. The register for Nagpore alone was complete for 1868; but it was hoped that, in addition, Raepore, Jubbulpore, Seonee, Saugor, Hoshungabad, Khundwah, Chandah, and Sumbulpore would in future supply reliable data. In the other Provinces the work of collating meteorological registers has been discharged by a special officer designated the Meteorological Reporter; but as no stations in the Central Provinces supply meteorological records to any of these officers, the arrangements which have been made by the Sanitary Commissioner for obtaining information on this important subject must prove of great value.

General characteristics of the year.

5. The meteorological records for 1868 are thus imperfect, the only complete register, as has been already stated, was supplied from Nagpore; but the main characteristics of the year, which were observed there, were observed generally throughout the Central Provinces. Rain fell on 65 days, and the total fall for the year was only 25·5 inches. The average for Nagpore is 40 inches, and in 1867 there had been 58·1. The chief features of the year thus were a small rain-fall and an early termination of the monsoon.

Vital statistics.

6. To the vital statistics of the Province Dr. Tounsend has paid special attention, and four Tables are appended to show the results during 1868. Registration as yet embraces only about five millions or less than one-half of the total population, and it is evident, as fully acknowledged by the local authorities, that no reliable conclusions can be drawn from the data available. The disparity in both the birth and death rates of neighbouring Districts, to which attention is called by the Sanitary Commissioner, is sufficient to show that registration is as yet very imperfect and incorrect; but the subject is receiving the attention of the Chief Commissioner, and with the hearty coöperation of the District Officers and the carefully supervision of the Sanitary Commissioner, the beginning, which has been already made, will doubtless end in procuring most valuable statistics,—valuable not only in a scientific light, but as affording the only sound basis for sanitary reforms.

Illustrations of the returns.

7. It is not therefore advisable to attempt any full analysis of these returns, and it will be sufficient to state the general results and to illustrate the disparities which indicate defects in the records, and to remedy which the attention of the authorities is being directed.

Birth rate.

8. Out of a population of nearly five millions (4,744,836) 107,199 children were born, of whom 58,804 were males and 48,395 females, giving a total ratio of 22·1 per 1,000, or 24·4 of male and 22·2 of female births per 1,000. The general birth rate varies from 14·6 in Nursingpore to 33·5 in Seonee, and similar discrepancies appear if the relative rates of the sexes be examined in different Districts. The difficulty of registering births with any accuracy is well known, and it is not surprising that the results should as yet be evidently unreliable.

Death rate.

9. The total death rate in the population among whom registration is carried on amounted to 16·5 per 1,000, giving 24·8 in the cities and only 14·7 among the country people. In the body of the report, paragraph 22, the death rate is stated to be 19·7 per 1,000; but this would appear to be a misprint, as the ratio of 16·5 is given in the Tables. Considerable discrepancies are apparent in the statistics, and these have not been lost sight of by the local authorities. It is gratifying to learn that, notwithstanding these defects as a whole, they indicate considerable improvement, and that strenuous efforts are being made to render them more and more trustworthy.

Fevers.

10. Where confidence cannot be placed in the number of deaths recorded, the causes to which the deaths have been due are not likely to be very accurately stated. Sixty per cent. of the whole mortality is under the head of "fevers;" and, although the Sanitary Commissioner is of opinion that deaths from other causes are frequently entered under this head, there is little doubt that malaria is directly or indirectly the cause of one-half of the mortality of these Provinces. In

1868, however, fevers, and specially intermittent fevers, were less prevalent than usual—a fact which he ascribes to the peculiar meteorology of the year, and the accuracy of which is fully borne out by the statistics of the troops and prisoners as given in my annual sanitary report for 1868.

Cholera.

11. The history of the cholera in the Central Provinces is carefully sketched in Dr. Tounsend's general report, and it also forms the subject of a special and very complete report which was separately submitted to the Chief Commissioner. In 1867, it is to be remarked, these Provinces were remarkably free from the disease. In 1868 they suffered much, and in 1869, it may also be observed, they have been the scene of a very severe outbreak. During 1868, 7,592* deaths were reported from this disease, but the general impression appears to be that the numbers were considerably under-stated. All of the Districts, except Sumbulpore, suffered more or less, but the severity of the epidemic was confined to Seonee, Mundla, and Jubbulpore. In these three the deaths from this cause are returned as having been, respectively, 1,638, 1,074, and 2,940.

Special enquiry into the cholera epidemic.

12. As soon after the epidemic as the weather permitted, Dr. Tounsend proceeded to these Districts, and, during the course of the cold season, investigated the circumstances connected with the greater or less prevalence of the disease in upwards of 300 villages. His enquiries were directed chiefly to the nature of the soil, the water-supply, and the general sanitary condition, as well as to the circumstances connected with the appearance of the first case in each. Where any village preserved complete or comparative immunity from choleral an explanation of such immunity was sought for on the spot. The result of this persona, enquiry is embraced in the special report to which allusion has already been made, and which is a very valuable record of a most painstaking investigation.

Origin of the epidemic.

13. Dr. Tounsend discusses at some length whether the disease was bred within the localities attacked, or whether it was introduced from elsewhere; and on this point he comes to the conclusions "that, although there was no actual proof of the choleraic influence, or infecting matter having been imported from elsewhere, yet the fact of the first manifestations of the disease having occurred in bodies of men located close by a road daily thronged with passengers from a part of the country in which the disease had previously appeared, afforded strong support to the supposition that the infecting matter may have been imported rather than generated;" and to this statement he adds "the account given of the subsequent spread of the disease and of its appearance in the different towns and villages scattered over the epidemic area, appears to me to favor the opinion that the choleraic influence is diffused by means of human intercourse, and by that means alone."

Difficulty of deciding the question.

14. Numerous instances are adduced in which an outbreak of cholera followed closely on the arrival of some person or persons actually suffering from the disease, and such instances are particularly striking in those parts of the country in which the villages are much scattered. Numerous examples are given in which the meeting together of a number of persons to join in a marriage procession and their subsequent dispersion, appear to have been the means of diffusing the disease. Cases are, moreover, cited, in which it would seem to have been carried from an infected locality by an individual who was not himself suffering from it. Such cases are of much interest, and it is very desirable that they should be carefully investigated and recorded in the manner which Dr. Tounsend has adopted. On the other hand, it is to be observed that in very many villages no evidence of importation could be obtained, while in others the arrival of a person suffering from cholera was not followed by any outbreak of the disease in the community among which he had come. Moreover, the limits within which the severity of the epidemic was confined are not easily explained on the theory of human intercourse.

Quarantine a failure.

15. But, whatever difference of opinion may exist on the general question of the communicability of cholera, and as to the deductions on this difficult problem which are to be drawn from the history of the outbreak in the Central Provinces which Dr. Tounsend has so carefully investigated, there is practically no difference as to the possibility of adopting any repressive measures for meeting such a danger. Quarantine was tried, but "in no case," remarks Dr. Tounsend, "did quarantine succeed in preventing the invasion of cholera, and it may be doubted whether the advance of the disease was in any degree delayed. Quarantine," he adds, "may therefore be said to have failed, and it is probable that when once any portion of the population of a tract of country has become infected with cholera, all attempts to check the spread of the disease by quarantine measures will prove futile." In illustration of the same, he observes that, "early in the present year (1869), when the first outbreak, of cholera were reported, I recommended the

* This is the number entered in Table VI. of Annual Report. In Table VI. of the Special Report the number is given as 9,602. The deaths from cholera for 1869 are given as 47,848.

establishment of quarantine at certain points. Afterwards, however, in the course of my tour on arriving at a point on one of the main lines of communication where quarantine had been established, I found that, although a large number of foot passengers, a drove of pack-bullocks and some 60 carts had been stopped from two to four days, and the progress of important railway works in the neighbourhood greatly interfered with, no passengers of the better class had been detained. Moreover, cholera has passed the barrier, and had already appeared in villages behind it. The uselessness of quarantine of this kind was so obvious, and the obstacles in the way of rendering it more stringent and effectual so great, that I recommended that the general traffic of the country should no longer be interfered with by attempts of the kind."

Minor measures of supervision recommended.

16. But, although strict quarantine must thus be regarded as a failure, Dr. Tounsend is of opinion that certain minor measures of precaution may be adopted with advantage; that bodies of men returning from infected localities should be carefully watched, and, when possible, diverted from the main lines of communication; that accommodation should be provided for the treatment of sick travellers near the approaches of large towns; that the holding of fairs within an epidemic area should be prohibited; that whenever cholera appears at them or other gatherings the meeting should be dispersed; and that marriage processions should, as far as possible, be discouraged whenever cholera is about. Whatever opinion is held regarding the effect of human intercourse in disseminating the disease, there can be no question that congregations of people, and especially large congregations, favor its spread; and the recommendations which Dr. Tounsend supports may therefore be carried out with advantage.

No perceptible influence of site and sub-soil moisture on cholera.

17. In the course of his investigations, the Sanitary Commissioner came to the conclusion that elevation and dryness of site are no safeguard against the invasion of cholera. Villages situated on the tops of rocky ridges or on high, open plateaus, but built on hard impermeable rock, bare of soil and where sub-soil water did not exist, suffered in some cases with extreme severity. The opinion, therefore, at which Dr. Tounsend arrived was this,—"that the notion of there being any relation between moisture of the soil and sub-soil water, and the development of the infecting matter of cholera, derives no support from the study of the disease as it prevailed in these Provinces."

Marked influence of the water-supply.

18. But there was one condition which appeared to exert a very remarkable influence on the progress and diffusion of cholera in this epidemic, and it is to the careful enquiries under this head to which I would draw particular attention. The connection between an impure water-supply and a severe outbreak of cholera in any community has been much insisted on by high sanitary authorities; and the facts collected in the Central Provinces regarding the epidemic of 1869, appear to Dr. Tounsend strongly to substantiate the truth of this opinion. Comparing the different tracts of country, he finds that, where the number of villages attacked and the percentage of mortality from cholera were small, the water was chiefly drawn from deep wells where it was abundant, and that where it fell with the greatest severity the water-supply was both deficient in quantity and especially liable to contamination; or, taking the Districts where the disease was most prevalent, the ratio of mortality, as a rule, was high or low in individual towns and villages in inverse proportion to the measure of good pure water available. Numerous instances are cited in which individual villages in an infected tract escaped the severity of the outbreak, and in some instances escaped altogether, and where no explanation could be assigned for the enviable distinction beyond the fact that the water-supply of that community was more abundant and better than that of their neighbours. On the other hand, the villages that suffered in the greatest degree were all dependent on sources of water-supply more or less evidently liable to all kinds of pollution.

Necessity of improving the water-supply.

19. Without entering into the question of the manner in which an impure water acts in favoring the spread of cholera, whether ordinary impurities alone are sufficient, or whether some special *contagium* is requisite, it is sufficient, for all practical purposes, to admit the fact that one of the most important sanitary reforms which can be adopted for preserving the people against the ravages of cholera is to improve the water-supply. The importance of this matter has been strongly urged on the Local Government and in the orders of the Chief Commissioner which accompany Dr. Tounsend's report, the necessity for this improvement is fully admitted. District Officers have been instructed to call on the landowners to procure for their villages a supply of water which shall, in each case, be pure and sufficient for their wants, and the attention of the District authorities to this important point cannot fail to be productive of much practical benefit to the people.

Small pox.

20. Of the other diseases to which special reference is made, the only one that need be noted is small pox. From this the Central Provinces were unusually free during 1868. Nimar and Hoshungabad were exceptions to this rule, and, with reference to them and other Districts which were affected above

the average, it is remarked that they had enjoyed comparative immunity during the two previous years, and that the increase may in a measure be attributed to the larger number of unprotected persons who were thus exposed to the influence of the poison.

Sanitary condition of individual Districts.

21. The third section of Dr. Tounsend's report is devoted to a short summary of the sanitary condition of the different Districts. Into these details it is not desirable that I should enter. In not a few parts of the country, owing to the unusual drought, provisions were high, and in some cases there was much distress but, as a rule, the abundant demand for labor and the high rate of wages afforded relief. Many defects are brought to notice in conservancy and water-supply, and suggestions made for their improvement. The practice of stalling cattle in large numbers within the villages and even within the houses prevails largely throughout these Provinces, and the evils of such a system are frequently alluded to. Testimony is borne to the general interest which is taken in the sanitary improvement of their Districts both by the District and Medical Officers, and with their valuable aid the people will in time become impressed with the injury to health which arises from this and other customs.

General remarks.

22. Dr. Tounsend's reports are eminently practical. His great object has been to collect facts, and, although a difference of opinion may obtain as regards some of the conclusions which he has drawn from them, it must be admitted that he has spared no pains to make his record of them as full and accurate as possible. His recommendations are simple and to the point, while the remedies which he proposes are, at the same time, such as may be carried into practice without any insuperable difficulties. I have purposely avoided the discussion of any purely theoretical questions. His explanation of the manner in which cholera covered a given area within the Central Provinces may be incorrect, but the value of the sanitary measures, and especially the improvement of the water-supply which he recommends as the best means of escape within an infected area, cannot be questioned.

Sanitary report for Oudh. Part alone received.

23. The sanitary report for Oudh is for the official year 1868-69. It consists of three Parts as shown in the Table of Contents: I., summary report; II., original reports of Health Officers; and III., copies of papers by the Sanitary Commissioner. Part I. alone has reached me (in all probability the other two have not been printed), and to it is appended a copy of the sanitary report of Lucknow by the Health Officer of the city.

Summary report.

24. The summary report is divided into several short chapters embracing the subjects of sanitary police, State medicine, hygiene, and vital statistics; and Dr. Sutherland's remarks on each and all of these questions, although rather too general in their character, are worthy of consideration. From the census taken on the 1st February 1869, it would appear that the population of Oudh, exclusive of the Native Army, numbers 11,205,133, of whom 273,126 reside in the city of Lucknow. The registration of births is obviously incorrect, and the records of the death ratio also extremely imperfect. From the general Table appended to the report it appears that the births registered were in the ratio of 20·2 per 1,000 of the population, whereas the deaths were only 12·9. The birth rate varied from 9·8 in Barábunkee to 30·9 in Kheree. In Barabunkee the deaths were only 5·3 and in Gondah 19·0 per 1,000. The latter is the highest ratio recorded, and it may, I think, be assumed that the mortality thoughout the Province has been greatly under-stated. It is not possible to form any accurate estimate of it during the year, or of the extent to which that mortality was due to individual causes. In the Districts of Fyzabad, Gondah and Seetapore, cholera was more prevalent than in other parts of the country. Small-pox is reported to have been epidemic and very fatal in the winter of 1868-69 and spring of 1869. Under this head 7,728 deaths were recorded during the year, chiefly in the Districts of Oonao and Gondah.

Special report on Lucknow.

25. From the data given by Dr. Bonavia in his special report on the city of Lucknow, of which he was Health Officer, it appears that the year was unusually dry. The rain-fall was less than the average, having measured only 27·07 inches. According to the Table of vital statistics, the deaths in the city were at the rate of 19·2 per 1,000. One hundred and fifty-three deaths occurred from cholera. Dr. Bonavia remarks,—"the disease showed no sign of spreading by contagion, nor could I collect any evidence of its having been imported in the first instance. I particularly impressed on the men employed under me and on the police the importance of ascertaining, in each instance, whether any other cases had occurred in the *same* house during the year; but during the whole time the disease lasted, in only seven cases did a second case occur in the *same* house." Considerable improvements have been made in the city, especially in building and remodelling latrines, and I can bear testimony to the admirable manner in which they were kept.

Sanitary report of the North-Western Provinces mortuary statistics for 1868.

26. Dr. Plank's report is divided into two portions: Part I. relating to the mortuary statistics of the year, and Part II. containing an account of the inspections of a number of towns and villages. The mortuary statistics are given in one general Table, the reader being referred to a separate volume of statistics for any further particulars that may be desired. It would be more convenient if all the detailed information regarding the health of the Province were concentrated in one. According to the general return it appears that the death rate for the whole Province during 1868 was only 10·8 per 1,000 compared with 12·5 in 1867. It is evident that both ratios are altogether untrustworthy. The details of 1868 vary in different Districts from a minimum of 3·8 in Bustee to a maximum of 20 per 1,000 in the Terrai. In all likelihood the latter ratio is considerably under the truth, and the former is incredible. The Sanitary Commissioner is well aware of the inaccuracies, and, taking the case of Allahabad, shews that if the returns were correct the average value of human life in that District would be 153 years.

General greater healthiness of 1868 over 1867.

27. There is evidence, however, in these returns, unreliable as they are, that the general health of the people in the North-Western Provinces during 1868 was better than in 1867, and the accuracy of this fact is attested from other sources. Fevers, small pox and cholera were all much less prevalent than they had been in the year previous. The latter disease was chiefly confined to the Districts in the eastern part of the Provinces—Goruckpore, Ghazepore, Mirzapore, Azimgurh, Benares, Jounpore, and Allahabad.

Personal inspection of cities and villages.

28. In the second and main part of his report (occupying 72 of the total of 80 pages), Dr. Plank gives the result of his inspection of 58 cities and towns which he visited during the year. With the exception of a few important cities, such as Allahabad, Benares, Agra and Meerut, they belong chiefly to the Rohilkhund Division. In marching from town to town the condition of the villages was also noted, and these are specially commented on in a separate chapter. The defects in drainage and conservancy at these several places are recorded, and the orders of the Local Governments, which are appended to the report, show that the attention of the District Officers has been called to them with a view to their being remedied.

29. Dr. DeRenzy's report is full of interest. It is divided into four sections—

Sanitary report for the Punjab.

I.—On the system of sanitary improvements best adapted to the Punjab;

II.—On the subjects enquired into during the year;

General division of the report.

III.—Detailed reports son particular Stations;

IV.—On the result of registration of deaths during the year.

It would be impossible within the limits of a general review to enter on the many important questions which are ably discussed under these various headings, and I shall therefore confine myself to a few general observations.

Sanitary improvement.

30. As Dr. DeRenzy justly observes, the great want in our large towns is works of sanitary improvement, but without money and without specially-trained Engineers, it is a matter of no small difficulty to supply what is desired. When the Bill for enabling municipalities to borrow money for sanitary improvements becomes law, the pecuniary obstacle will be, to a certain extent, removed, but the engineering skill required will remain unsupplied. The Sanitary Commissioner mentions 20 towns in which such works are urgently wanted, and where he suggests that they should be commenced as soon as possible. But in such a scheme everything depends practically on the amount of money available; and, before coming to any definite conclusion on the subject, it would be desirable to know what the proposed works are estimated to cost, and whether the borrowing powers of the municipalities under the new Act will be equal to the strain required.

Delay in the execution of sanitary works inevitable.

31. These points have, I doubt not, received consideration; but, even admitting that the towns in question will be able to provide the works required, a very long time must elapse before a series of sanitary works can be executed throughout the cities of a Province, specially when the special engineering staff available for the purpose must be so limited. It therefore appears to be of great importance that, bearing in mind the future improvements which are to be carried out as soon as money and men can be obtained for the purpose, no effort should, at the same time, be spared to remedy the evils at once, so far as they can be remedied by simpler and less expensive men. Much has, I am aware, been done in the Punjab to impress on the people the benefits of sanitation, and there can be no question that there are many very simple reforms which can be carried out with great advantage to

the public health and at a very trifling cost. It is to be feared lest, in the towns designed for great sanitary works, these simple reforms may not be urged with the vigour which is desirable.

Advisability of inaugurating reforms in both villages and towns.

32. In this point of view, moreover, it appears that too marked a distinction has been drawn between the town and the village population, and the conclusion that it is "inexpedient to attempt the improvement of villages at present further than by advice and endeavours to diffuse among the people a knowledge of the laws of health" might be reconsidered. For the improvement of villages no expensive works as a rule are needed, nor, even where they may be required, is it probable that funds will be available to carry them into execution for some time to come. It is therefore all the more desirable that those simple reforms which may be accomplished should not be delayed. The remark that all real sanitary reforms must be worked out by the aid of the people themselves applies, perhaps, with even more force to the rural population than to the towns, and much may, I believe, be done by District Officers and by all the other officials who come in contact with the people to aid in the reformation. In addition to diffusing a knowledge of sanitary matters among them, something may eventually be done to oblige landowners to provide a good, wholesome water-supply to their villagers, and to attend to other matters of sanitary importance. The manner in which such measures may best be carried out, so that they shall be effectual and at the same time as little distasteful as possible to the prejudices of the people, is a question which might well engage the attention of the local Sanitary Commissioners without interfering with the greater sanitary works which are required for cities, or with any of their other most important duties. The towns named and described by Dr. DeRenzy are much in want of sanitary works. In the necessity for having these wants supplied as early as possible, I fully concur, but I much fear that, if the sanitary improvement of the villages is to be postponed until these and other such works have been completed, much valuable time will be lost.

General supervision and guidance, the work of the Sanitary Commissioner.

33. It must be remembered that the Sanitary Commissioner can himself accomplish but little. The actual designing and execution of works of any description must be done by Engineers, the sanitary improvement of villages and the sanitary instruction of the people must be carried out through the agency of District Officers or of municipalities under the general supervision and guidance of the Sanitary Commissioner, and it does not appear that any good will be gained, or that the work will in any degree be facilitated, by leaving any one portion of it to be commenced only when another part has been completed.

Results of registration of deaths.

34. Leaving the second and third sections of this report which contain a notice of some of the special subjects which the Sanitary Commissioner enquired into during the year, and also his detailed reports of inspection of several Stations which are well worthy of attention, I shall pass on to the fourth part which embraces the results of registration of deaths during the year. The original Vernacular registers are sent to the Sanitary Commissioner's Office weekly, and from them monthly statements are compiled and published in the *Gazette*. Abstracts of the returns from all large towns in the vicinity of Military Cantonments now appear weekly. So far as the results of 1868 are concerned, as the Sanitary Commissioner points out, the records in many places are still of little value. In Districts the death rate fluctuated between 5 and 24 per 1,000, and in the towns similar inaccuracies are evident. The total death rate for the Province, as deduced from the statistics, is 15 per 1,000. To the important subject of registration, Dr. DeRenzy devotes much attention, and the statistics of each year will, I feel sure, show the effect of his careful supervision.

Non-epidemic character of the year.

35. As regards special diseases, the year would appear to have been singularly free from epidemic sickness. There were very few deaths from cholera; and, although the total mortality from small pox was heavy, the violence of the disease was confined to a few Districts.

Sanitary Report for Bengal. General division of the Report.

36. The report for Bengal is divided into four parts. The first, as explained by Dr. Smith in his prefatory note, gives a general outline of sanitary administration in Bengal, and of the work done in the year under review. The second, which forms the most bulky portion, consists of extracts from forty District reports sent in by Civil Surgeons. The third contains special remarks on these reports, and the fourth is a brief review of topics of general sanitary interest. To these are added an appendix, in which papers by the Sanitary Commissioner on certain important subjects are reprinted.

Chief subjects engaging attention during the year.

37. One of the first subjects which engaged attention during the year was the preparation of a series of simple rules for the proper management of village conservancy. The subject of pilgrimage and its effects on the health of the people were carefully studied, and, after visiting Pooree at the time of the great festival, a special report was submitted to the

Government on the subject. The conservancy of Calcutta, and especially the very difficult question of how the night soil may best be disposed, was also enquired into. This matter, as well as a scheme for medical relief of the people, the procedure to be adopted on the appearance of small pox in an epidemic form, the registration of deaths, and sanitary progress in Bengal, were all made the subjects of investigation and of separate communications to the Government.

General opinions on sanitation in Bengal.

38. The reports of the Local Medical Officers and the special remarks of the Sanitary Commissioner on each, which form Parts II. and III., deal with matters of detail, into which it would be impossible to enter without occupying much space and time, and I shall therefore proceed to consider the fourth Part, which embraces some general opinions on leading questions connected with the sanitation of the Province. As Dr. Smith observes, the sanitary measures which are most important and most urgently required for Bengal are "good water-supply, efficient drainage, proper conservancy, and careful disposal of the dead."

Importance of improving the water-supply.

39. There is little doubt that here, as in other parts of India, there is almost universal pollution of the water-supply, and the proper remedy for this evil forms one of the most important sanitary questions of the day. On this subject Dr. Smith's remarks are deserving of attention. "I am of opinion," he writes, "that at the expense of every village and town in Bengal a good and abundant supply of water should be systematically furnished to the people by the Government. In outlying places, zemindars and heads of villages should be held strongly responsible that well and tank water within their jurisdiction is not wantonly defiled." It would, I fear, hardly be possible for the Government directy to supervise such a general scheme of water supply; but, by drawing the attention of District Officers to this very important question, and, if necessary, by introducing fresh legislation on the subject, measures may be adopted which will prove of incalculable benefit to the people.

Registration of deaths.

40. The only statistics regarding deaths in Bengal are contained in Tables regarding one or two very small communities of Native Christians. The returns received for 1868, Dr. Smith remarks, are utterly valueless. It is hoped that some progress has since been made in this most important matter.

Fevers in Bengal.

41. In a very brief notice on the fevers of Bengal, Dr. Smith expresses his opinion that "the fever of the Bengal Districts is, beyond all doubt, an endemic malarious disease, due to local causes,—chiefly want of drainage, partial or complete stagnation of water-courses, and saturation of the soil with moisture. It is not contagious. Its remissions and exacerbations are more or less regular diurnally. It is not characterized by a specific crisis or relapse. It is a typical malarious endemic fever." Speaking of the conditions which he believes gave rise to the disease, he adds that they are "want of drainage, the reduction of rivers to a low level, the deposit of silt at the mouths of rivers and on marshy plains, &c. Such causes are quite sufficient to account for all the sickness and mortality that have been reported. For a time they did not produce any marked effect. Cumulative action, however, began at last to tell. Nothing more was necessary; silent and gradual influences culminated, and, in the course of time, a most virulent malarious disease sprang forth." Considering the very great loss of life which has been due to this fever, there is no more important subject for sanitary enquiry; and the collection of accurate facts with reference to its appearance in Bengal, or even in one District of it, is of the greatest importance. A very careful note has, I observe, been prepared in the Bengal Office, summarizing all the information available as to the history of this disease. A very careful enquiry made over at least a portion of the epidemic area in order to ascertain the amount of sickness and mortality in each village, and the local changes, if any, to which the appearance of the disease may justly be attributed, would form the subject of a most useful and interesting sanitary tour.

Cholera.

42. The information regarding the extent to which cholera prevailed in Bengal during the year 1868 is incomplete. From some Districts no reports have been received, and with regard to others, the general tendency of the disease to appear in certain months, and to be at its maximum of prevalence at stated seasons, is given rather than a detail of the facts of the year.

Sanitary Report for British Burmah. General remarks.

43. The Sanitary Report for British Burmah, as has been already mentioned, reached me only on the 25th of this month, and I cannot therefore attempt anything beyond a very brief notice of its contents. The year was not marked by any general or serious sickness. Epidemic disease was confined to a few unhealthy localities, and even in these it did not prevail to any alarming extent. The people were prosperous, labor was abundant, food plentiful and cheap, and trade flourishing. The Sanitary Commissioner travelled over a large part of the country, and inspected many towns and villages.

Statistics of births and deaths.

44. Statistics of the registration of both births and deaths are given in the report, and a careful analysis of them has been made. The returns, however, as the Chief Commissioner remarks, are still unreliable, and much care must be bestowed on their preparation before any trustworthy conclusions can be drawn from them. Taking the population of seventeen cities, the birth rate was 31·5 per 1,000, and the death rate 26·7, but the details are so discrepant that, as Dr. Cowie observes, the figures have little value. No general rate for the Province is given in the Tables. On this subject Dr. Cowie remarks,—"our system of registration has now been under trial for four years. The people of the country are not prejudiced against it, and I have every reason to hope that, when the new forms are issued with greater care in the collection of the vital statistics, satisfactory returns may be looked for."

General remarks on the preparation of the Annual Reports. Importance of mortuary statistics.

45. Having briefly reviewed the reports for 1868, I propose now to offer one or two suggestions for the preparation of future reports. I do not recommend that the local Sanitary Commissioners should be tied down to one uniform method of preparing them, but a few general observations on the subject may not be altogether without use. As the collection of accurate statistics of deaths in the different parts of the country must form the true basis of all sanitary progress, so the annual statements of such mortality must form the ground-work of the sanitary history of the year. A prominent place should therefore be assigned to the results of registration, and an analysis should be given of their results showing how far they are reliable and how far improvement is still required, what measures have been adopted during the year for rendering the system more perfect, and what still remains to be done. The series of Tables which have been introduced under the orders of the Government will contain all the information desired, and there is no more important duty for a Sanitary Commissioner than to scrutinize the registration, and to do all in his power to improve it. All the reports for 1868 contain vital statistics of the population except Bengal, and here the difficulties are even greater than elsewhere. I am not aware how far registration has yet been established in the Lower Provinces, but if the obstacles to its general introduction prove insuperable, it might be brought into play over the area of one division, and thence gradually extended. Several of the Sanitary Commissioners already follow the course now recommended and make the collection of the mortuary statistics the ground-work of all future progress; but in some of the Provinces registration has not received that attention which its importance demands.

History of the chief diseases during the year.

46. A special chapter should next be devoted to a general history of each of the chief diseases throughout the year,—cholera, small pox, fevers and bowel complaints, the four which are entered in the annual Tables;—and in the event of any prevalence of any one of them, and especially of cholera, special efforts should be made to obtain reliable data and to give a connected account of the epidemic showing the distribution of the disease and any facts of interest connected with its progress. In some of the reports these data are spread over a number of different District reports, and it is quite impossible to arrive at the facts without an infinity of labor. The object of one report for a Province is to collect the facts and throw them into a connected narrative, advantage being taken of the detailed information procurable to show how far local conditions affected the results and what were the causes, why particular places suffered more than others.

Meteorology and condition of the people.

47. And in order to judge of this general history, information on two most important subjects is very necessary. We must know what has been the meteorology of the year, whether there has been anything peculiar either as regards temperature, rain-fall, and other atmospheric phenomena, and we must also know what has been the general condition of the people as regards abundance of labor, rate of wages, and price of food; how far any one or other of these has been unusual, and how far it appears to have affected the health of the population. These subjects should form the subject of a separate chapter.

Record of personal inspection and proceedings.

48. A fourth chapter might well be taken up with a short account of the work done by the Sanitary Commissioner during the year, of any tour which he may have undertaken, of the general condition of the places visited, and the measures proposed for their improvement. When such a tour has been undertaken with a view to enquire into the circumstances connected with any outbreak of disease, the particulars may more conveniently be given in connection with the history of the outbreak in Chapter II.; but the general course and extent of the investigation should also be stated in Chapter IV., abstracts of special inspection reports of towns and districts also would appear under this head.

Importance of sanitary tours.

49. In connection with this subject I would observe that it is of the very greatest importance, especially in connection with an unusual outbreak of sickness, that the Sanitary Commissioner should make a tour and ascertain the facts from his own personal observation. Coming in contact with

District Officers and with the people themselves, will act as a great stimulus to sanitary reforms; and, although the Sanitary Commissioner's other duties are many and laborious, he may find time for this important work. Dr. DeRenzy, I would observe, is under an erroneous impression in supposing that he was expected to be "constantly on the move," as the orders of the Resolution dated the 10th September 1868, which have been already referred to, were complete in themselves, and contain no injunction of this nature. The importance of his becoming personally acquainted with the country is generally inculcated.

Sanitary progress during the year.

50. In a fifth and last chapter a short summary might be given of any sanitary progress which had been effected during the year. I propose to devote a special portion of each annual report to this question, and it is therefore important that the data from each Province should be available in a tangible form. I do not anticipate that such statements will every year contain a record of some marked reform. Progress must be slow, but it will be satisfactory to ascertain exactly how far the measures already in force are working, and whether any advance has been made during the year.

Reports to be concise and to the point.

51. The report should be concise and to the point; and, with reference to this very important requirement, it will not be advisable, as a rule, to reprint district reports in full. Their contents should rather be incorporated in the general history of the year, the details under each head being embodied in the chapter to which they properly belong. All extraneous matter should be avoided.

Reports to be of one size.

52. It is very desirable that all the reports should be of one size of page. On this point orders were issued to Madras and Bombay, but, so far as I am aware, no instructions were given for the guidance of the Sanitary Commissioners with the Local Governments and Administrations. For the Tables of vital statistics which have been ordered, this is almost a necessity, and it is advisable on other grounds. The reports for 1868 differ materially in this respect, especially those for Bengal and British Burmah.

To be submitted early.

53. The early preparation and submission of the report is a matter of very great importance, and regarding which the orders of the Government have already been issued. If the report be made a short, plain record of facts, such as I have proposed, one obstacle to its early preparation will be removed. Unless the reports are received each year at an early date, it will be impossible for me to comply with the orders of the Secretary of State, and submit a general report within the time specified.

Information required for a general review of disease for 1868, defective.

54. My general review of the reports for 1868 has been, to some extent, purposely brief; for, as I have already stated, the information they contain is of such old date that it has lost much of its interest. Nearly eighteen months have elapsed since the close of the year to which they refer, and the reports for 1869 are already overdue. But, independent of any consideration of this nature, some of the reports do not contain the data required for preparing a general history of the distribution of disease throughout the country, or of sanitary progress for the year. If the general suggestions which have been made in the concluding paragraphs are adopted, these defects will be remedied for the future.

Extract from the Proceedings of the Government of India in the Home Department (Sanitary),—No. 241—250, under date Simla, the 6th July 1870.

READ again—

The under-mentioned letters from Local Governments and Administrations forwarding the Annual Reports of their respective Sanitary Commissioners for 1868.

From the Chief Commissioner of the Central Provinces, No. 2416—275, dated 9th August 1869.

Ditto ditto Oudh, No. 4377, dated the 2nd October 1869.

Ditto Government of Bengal, No. 659, dated 21st February 1870.

Read also—

The Annual Sanitary Reports for the North-Western Provinces, the Punjab, and British Burmah for 1868.

And—

A letter from the Sanitary Commissioner with the Government of India, No. 183, dated 28th May 1870, submitting a general review of the above Annual Reports.

RESOLUTION.

THE Governor General in Council observes that the main features of the review submitted by the Sanitary Commissioner with the Government of India, are that very much remains to be effected in the way of sanitary reform, and that the vital statistics in the rural districts are

at present of little value, while even those appertaining to towns are very unreliable. The Governor General in Council is forced to the conclusion that the existing means, financial and administrative, have not generally been fully utilized for carrying out sanitary improvements in most of the cities and towns of India.

2. The suggestions contained in paragraphs 45 to 53 of Dr. Cuningham's letter are approved by the Governor General in Council, and Local Governments and Administrations in the Presidency of Bengal will be requested to instruct local Sanitary Commissioners accordingly. Considering that uniformity of system is very desirable, the Governments of Fort St. George and Bombay will also be invited to issue similar orders, unless they have any special objections to urge against Dr. Cuningham's proposals.

3. The Governor General in Council concurs in opinion with Dr. Cuningham that it is very desirable that all the annual reports on sanitation should be of a uniform size. It will be necessary that these reports should be bound up with the Proceedings of the Local Governments and of the Government of India; and on this account, and in consideration of the fact that there will always be voluminous Statistical Tables attached to these reports, His Excellency in Council believes that folio foolscap size, as already adopted by the Government of Madras, will be found to be the most convenient, and therefore desires that it should be adopted in future. Local Sanitary Commissioners should be instructed accordingly.

ORDER.—Ordered, that a copy of the above Resolution, together with a copy of Dr. Cuningham's letter dated 28th May 1870, be forwarded to the Local Governments and Administrations noted on the margin for information and guidance.

Government of Madras	Chief Commissioner of Oudh.
" Bombay.	" Central Provinces.
" Bengal.	" British Burmah.
" N. W. Provinces.	Resident at Hyderabad.
" Punjab.	

Ordered also, that a copy of the above Resolution be forwarded to the Sanitary Commissioner with the Government of India for information.

Ordered further, that a copy of the above Resolution, together with a copy of Dr. Cuningham's letter dated the 28th May 1870, be published in the Supplement to the *Gazette of India*.

(True Extract.)

E. C. BAYLEY,

Secretary to the Government of India.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

IRRIGATION OPERATIONS OF FUSL KHURREEF IN THE NORTH-WESTERN PROVINCES UP TO 31st MAY 1870.

Canal Divisions.	Water distributed during May 1870: Depth in Canal at Regulating Gauge. Full supply, feet.	Actual throughout, feet.	Gross Consumption, cubic feet, per second. Estimated full discharge.	Actual average throughout.	Navigation Return, Ganges Canal. Nature of Traffic.	Up. Mds.	Up. No.	Down. Mds.	Down. No.	Total Up and Down. Mds.	Total Up and Down. No.
Ganges Canal. Northern	9·00	8·92		660	*Grains—*						
Meerut	6·80	7·35		1,191	Wheat	..	..	8	..	8	..
Futtehgurh	6·50	5·46		376	Gram	2,369	..	..	..	2,369	..
Boolundshuhur	Not known	3·40	5,585	706	Barley	..	..	10	..	10	..
Allygurh	6·00	5·20		989	Jowar	50	..	..	..	50	..
Etawah	4·80	2·60		496	Urhur / Dâl / Musree	1,257	..	..	..	1,257	..
Cawnpore	6·00	3·70		652	Moong	47	..	..	..	47	..
					Rice	215	..	..	..	215	..
			Total	5,070	Total	194	..	..	..	194	..
					Total	4,132	..	18	..	4,150	..
					Cotton	9	..	8,679	..	8,688	..
					Oil-seeds	..	..	2,464	..	2,464	..
					Salts	..	..	5,718	..	5,718	..
					Metals	3,502	..	714	..	4,216	..
					Building materials	451	..	11,500	..	11,951	..
					Miscellaneous goods	1,462	..	9,538	..	11,000	..
Eastern Jumna Canal	..	3·20	..	734	Firewood	..	..	42,216	..	42,216	..
					Bamboos	..	11,260	..	707,119	..	718,379
Doon Canals	..	..	..	89	Bullees, unsquared timber	..	265	..	15,831	..	16,096
Rohilkhund Canals	..	..	..	259	Kurrees, squared timber	..	57	..	1,414	..	1,471
					Laths	..	..	..	54	..	54
					Miscellaneous timbers	..	1,365	..	385	..	1,750
					Passengers, or live stock	..	..	..	72	..	72
Total	..	..	..	6,152	Total	9,556	12,947	89,847	724,875	99,403	737,822

Land Irrigated (approximate). Zillah.	Acres.
Saharunpore	10,604
Mozuffernuggur	28,038
Meerut	41,903
Boolundshuhur	20,648
Allygurh	23,650
Muttra	4,754
Agra	438
Etah	4,461
Mynpoorie	15,172
Futtehgurh	12,380
Etawah	12,919
Cawnpore	43,026
Dehra Doon	1,355
Bijnour	552
Terai	303
Bareilly	1,673
Jhansie	67
Humeerpore	..
Total	221,943

Rain-fall. Total from 1st April to 31st May 1870.	Average of ten previous years for the same period.
0·4	1·3
0·6	1·0
1·3	1·0
0·7	1·0
B.	0·9
1·1	0·6
0·4	0·3
B.	0·5
0·4	0·5
1·3	0·9
0·5	0·4
B.	0·6
2·6	2·5
B.	0·8
0·3	0·7
0·9	1·3
B.	0·2
B.	0·3
..	..

REMARKS.

The mean volume of the Ganges Canal passing the Roorkee gauge during the month, was 5,518 cubic feet.

Volumes discharged were—

Tail, Etawah Branch	..	47 cubic feet.
Escapes „ „	..	238 „ „
Tail, Cawnpore „	..	163 „ „
Escapes „ „	..	*Nil.*
Total	..	448 cubic feet.

The Cawnpore and Etawah Branches have alternate weeks of high and low supply. The gauge-readings show the mean of the month.

The demand for water on the Ganges Canal, steady at the commencement, increased towards the close of the month: the chief crops irrigated being indigo, sugar-cane, rice, and cotton.

On the Eastern Jumna Canal the demand at the commencement of the month was moderate, and the Executive Engineer was enabled to close the canal on the 7th instant for a few days to allow of an inspection of the works before the setting-in of the rains.

The canal-supply was lowered gradually in order that too large a body of water might not be suddenly thrown on the Jumna weir at Okla. The canal was opened again, with a good demand, on the 16th, the actual closure having lasted exactly one week. To a steadily-increasing demand for water for sugar-cane, indigo, and rice, the canal was raised as steadily, till quite the end of the month, when, owing to a fall in the river, the supply had to be adjusted to the requirements of the Western Jumna Canal. The demand at this period was very great for the crops above-mentioned. Partial tateels became necessary.

ALLAHABAD;
The 15th June 1870.

W. G. ROSS, *Lieut., R.E.,*
Asst. to Chief Engineer, Irrigation Works, N. W. P.

IRRIGATION OPERATIONS OF FUSL KHURREEF IN THE PUNJAB UP TO 30th APRIL 1870.

Canal Division.	Water distributed during April: Depth in Canal at regulating gauge. Full supply.	Actual throughout April.	Gross consumption, cubic feet per second. Estimated full supply.	Actual average throughout April.	Navigation Return Canal. Principal items of Traffic. Up.	Down.
B. D. Canal. 1st Division ...	4·9	3·6		395·07	...	.....
2nd Division, M. B. Lower ...	4·6	2·28	3,073·6	420·13	...	.....
„ Lahore Branch..	3·3	2·07		276·11	...	.....
Total, Baree Doab Canal ...	.....	.....	.....	1,094·31	...	.....
Western Jumna Canal. Kurnaul Division ...	4·33	4·21	.....	121·0	...	51,841 bullies, kurries, planks, &c.
Delhi „ ...	4·1	4·0	.....	745·4	...	
Hansi „ ...	8·8	.....	.....	694·0	...	
„ Bulla Head ...	8·4	.....	2,546	257·0	...	
Total, Western Jumna Canal ...	.....	.....	.....	1,817·4	...	.....
Inundation Canals. Upper Sutlej Division ...	.....	.....	.....	.....	...	.....
Lower Sutlej and Chenab Division ...	.....	.....	.....	.....	...	.....
Indus Canals ...	.....	.....	.....	.....	...	.....
Total, Inundation Canals ...	.....	.....	.....	.....	...	.....
Delhi and Goorgaon Works...	.....	.....	.....	.....	...	.....
Total, Delhi and Goorgaon Works ...	.....	.....	.....	.....	...	.....
Grand Total ...	.....	.....	.....	.....	...	51,841

Land Irrigated (approximate). Zillah.	Acres.
Goordaspoor ...	2,377
Umritsar ...	1,220
Lahore ...	2,773
.....	6,370
Umballa ...	.....
Kurnaul ...	1,117
Delhi ...	10,437
Rohtuck ...	9,047
Hissar ...	634
Jhind ...	1,393
Bikaneer ...	.....
.....	22,628
.....	.....
.....	.....
.....	.....
.....	.....
.....	28,998

Rain-fall. Average.	During month.	Chief Crop (approximate). Name.	Area in acres.	Remarks.
0·96	0·56	Cotton ...	2,182	1,278·61 cubic feet per second passed down the escape on the Baree Doab Canal, of which 1,039·08 cubic feet per second was turned down the Mullikpoor escape for the purpose of regulating the supply.
0·22	0·25	Rice ...	100	
...	...	Sugarcane...	3,141	
		Others ...	947	
...	...	... ..	6,370	
1·6	0·5	Cotton ...	6,563	656·6 cubic feet per second discharged by the Boodha Khera escape.
1·7	0·1	Rice ...	3	
...	...	Sugar-cane .	14,827	
2·4	0·2	Others ...	1,235	
2·0	0·1			
...	...	.....	22,628	
...	0·70	.....	.....	Water admitted into the Khânwah Canal on 11th April, and reached the lower part of the Canal about the 24th. In the Inundation Canals the area irrigated during this month is so small that it has been omitted. Khurreef irrigation just commencing, so inconsiderable that it is not entered.
...	...	.....	.....	
...	...	.....	.....	
...	...	.....	.....	
...	...	.....	.....	
...	...	.....	.....	
...	...	.....	28,998	

MURREE;
The 29th June 1870.

W. BROADFOOT, *Lieut., R.E.,*
Asst. Secy. to the Govt., Punjab, P. W. D., Irrigation Branch.

No. 28 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, JULY 23, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

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GOVERNMENT OF INDIA.

HOME DEPARTMENT.

INDIAN IMMIGRANTS IN THE ISLAND OF GRENADA.

Public.
No. 58.

INDIA OFFICE;
London, the 31*st May* 1870.

To His Excellency the Right Hon'ble the Governor General of India in Council.

MY LORD,—In continuation of my despatch of the 24th of March last, No. 29, I herewith forward, for the information of your Excellency in Council, a copy of a report for the year 1869, by the Immigration Agent General in Grenada, on the Indian immigrants in that colony, with its enclosed Tabular Returns, Schedules A. and B. I am glad to observe that this report is in all respects satisfactory.

Mr. Munro, to the Colonial Secretary, Grenada, 21st February 1870, and two enclosures.

2. I await a reply to my above-cited despatch to your Lordship in Council relative to the renewal of emigration to the colony.

I have the honor to be,

MY LORD,

Your Lordship's most obedient, humble Servant,

ARGYLL.

From G. G. MUNRO, ESQ., Immigration Agent, to the Colonial Secretary, Grenada,—dated Grenada, the 21st February 1870.

I HAVE the honor to furnish you herewith, for the information of the Executive, an annual return (Schedule A.) of the Indian immigrants who were in this colony on the 31st December last, as compared with those who were in the island the preceding year, showing also those who were in gaol and those in the colony hospital on that day under treatment, with the increase and decrease among them during the year 1869.

2. *Their number in* 1869.—From recent inspection of the immigrants and from the semi-annual returns which employers are compelled by law to furnish this Department, I find that there were in the island, at the close of the past year, 902 men, 358 women, 178 boys, 183 girls under 12 years, and 89 infants, who are located on 33 sugar and six cocoa estates, making a total of 1,702 souls.

3. *The increase in* 1869.—There were no importations of coolies from India this year. Nine male Indians, however, who had taken passports from home some months previously for Trinidad in the hope to better their condition, returned to this colony and resumed their places in the ranks of Indian laborers. These are apparently privileges enjoyed by them on estates here which are not obtained in Trinidad.

The natural increase was 34 boys and 25 girls, equal to 2·46 per cent.

4. *Decrease in* 1869.—The sanitary report hereto attached (Schedule B.) exhibits the mortality which took place among the immigrants during the year. There were 42 deaths, viz., 23 men, seven women, six boys, and six girls, equal to 2·38 per cent., which is less than that of the previous year—the result no doubt of increased acclimatization among them, as well as to better care bestowed on the sick on estates, and to the unprecedented dry season of 1869.

The only casualty requiring explanation is that of the woman Beeporthy, who was found dead under one of the arches of the Paradise Bridge. She was of dissolute and vagrant habits, and, although the Coroner's Jury certified that she died from starvation, yet she was within reach of both food and medical aid had she sought for the same.

5. *Crimes and offences.*—There were 30 convictions and imprisonments of Indians during the year, namely, nine for common assaults, six for petty thefts, three for riotous conduct, three for disorderly conduct in the public streets, one for selling rum without license, and five for breach of contract. There was also one committed for assault with criminal intent, but who was acquitted after trial, and two as dangerous lunatics, but who shortly after recovered, and were, by order of the Executive, discharged, and returned to labor.

6. *Employer and employed.*—The relation between the coolies and their employers continues very satisfactory. I have had no complaints from employers. Indeed, the Indian immigrant is, on many sugar plantations, the chief reliance of the planter for continuous labor.

7. *Service-expired Indians in* 1869.—On the 18th June last, the period of service of the coolies imported by the ship *Goldawar* in 1859 expired. Although the greater number of these people were entitled to the return passage, yet, under the operation of the Act No. 390, which secured to them the back passage at the expiration of the additional term of five years' service, 130 men, 49 women, seven boys and one girl accepted bounties, and were re-indentured for one year in terms of the Act. These bounties amounted in the aggregate to the sum of £1,642-10.

Of this batch of immigrants three men and one girl alone are awaiting an opportunity to return to India, and to whom compensation will be paid in terms of the 49th section of the amended Immigration Law until a ship is provided.

SCHEDULE A.

GRENADA.

Return of the Indian immigrants located on the plantations of this colony in the several Districts thereof, as compared with the previous year showing the increase by births and decrease by deaths or departures to other colonies during the year ended 31*st December* 1869.

DISTRICTS.	NUMBERS ON ESTATES ON 31ST DECEMBER 1868.								INCREASE IN 1869 BY		DECREASE IN 1869 BY				NUMBERS ON ESTATES ON 31ST DECEMBER 1869.								COOLIES IN GAOL.		COOLIES IN HOSPITAL.		GRAND TOTAL.
	Adults.		Children.		Infants.		Total.		Births.		Deaths.		Departure.		Adults.		Children.		Infants.		Total.		31st Decr.		31st Decr.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
St. George ...	76	40	21	22	4	4	104	68	...	1	2	...	1	...	61	20	9	17	3	2	73	39	...	...	...	...	112
St. David ...	86	31	16	17	5	6	111	55	3	3	2	...	...	...	93	37	20	21	5	3	120	63	1	...	...	2	185
St. Andrew ...	426	171	69	63	15	20	518	257	16	8	19	8	...	...	424	168	79	89	25	18	532	275	1	...	2	...	810
St. Patrick ...	304	112	41	36	10	21	361	169	13	11	6	5	...	...	288	113	47	51	13	15	350	180	...	1	2	...	533
St. Mark ...	3	...	...	...	...	...	3	...	1	...	...	...	...	...	7	4	4	2	2	...	13	6	...	...	...	...	19
St. John ...	28	14	6	4	1	1	35	20	1	2	...	...	...	...	20	13	11	3	1	2	32	18	...	...	...	...	50
Carriacou ...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	1
TOTAL ...	924	368	153	142	35	52	1,133	569	34	25	29	13	1	...	894	355	170	183	49	40	1,1 21	581	3	5	5	3	1,702

(1,702)

G. G. MUNRO,
Immigration Agent, Grenada.

IMMIGRATION OFFICE, GRENADA,
The 4th February 1870.

SCHEDULE B.

General Report on the sanitary condition of the Indian immigrants located on the plantations in the colony with a statement of the increase and decrease among them in the half year ended 31st December 1869.

Number of Return.	Name of Plantation.	Number on Estate on 31st December 1869.		Births in half year.		Deaths in half year.					Remarks.
		Male.	Female.	Male.	Female.	Date of Death.	Cause of Death.	Name of Deceased.	Male.	Female.	
1	Dongaldstone	18	7	...	...	.....	.....	.....	...	...	Coolies all well.
2	Grand Bras	49	19	...	...	.....	.....	.....	...	...	
3	Mount William	1	...	...	...	.....	.....	.....	...	...	
4	Crocker	8	3	...	...	.....	.....	.....	...	...	
5	Marti	6	1	...	...	.....	.....	.....	...	...	
6	Hope	44	28	...	...	September 6 ...	Congestion of the brain ...	Soomary	...	1	There were four cases of yaws among the children on the estate, others in good health.
						„ 7 ...	Worm fits	Mary	...	1	
						December 30 ...	Dropsy	Ramsawuck ...	1	...	
7	Belmont	39	22	1	...	July 12 ...	Inflammation of lungs ...	Bungtoo ...	1	...	
8	Sameritan	10	14	...	1	.....	.....	.....	...	...	Coolies all well.
9	Mount Rodnay	22	15	...	1	.....	.....	.....	...	...	
10	Constantine	2	...	...	...	.....	.....	.....	...	...	
11	Grand Braslands	1	...	...	...	.....	.....	.....	...	...	
12	Snell Hall	11	9	...	...	.....	.....	.....	...	...	
13	Corinth	19	13	2	1	.....	.....	.....	...	...	
14	Mount Home	24	10	...	...	.....	.....	.....	...	...	
15	Clarke's Court	27	14	...	...	.....	.....	.....	...	...	
16	Mount Craven	11	3	...	...	September ...	Delerium tremens ...	Khoobtall ...	1	...	
17	Union D	2	2	...	...	.....	.....	.....	...	...	
18	L'Esteere	7	5	2	...	.....	.....	.....	...	...	
19	Columbine	6	4	...	...	.....	.....	.....	...	...	
20	La Fortune	21	12	...	...	.....	.....	.....	...	...	
21	Observatory	27	10	2	...	December 4 ...	Found dead	Beeporthy ...	...	1	Beeporthy found dead under Paradise Bridge; was a deserter and wanderer; Coroner's inquest was held and reported to executive; coolies well except Dhowlie, who left colony hospital before being well cured. He was ordered back.
22	Balthazar	36	21	...	2	.....	.....	.....	...	...	
23	Westerhall	27	27	...	...	.....	.....	.....	...	...	
24	Baillies Bacolet	28	15	...	...	.....	.....	.....	...	...	Coolies all well.
25	Bolopre	49	36	...	...	September 17 ...	Diarrhœa	Kissoonoo ...	1	...	
26	Pearls	21	10	...	...	.....	.....	.....	...	...	
27	Plaines	54	26	...	...	July 7 ...	Consumption	Sitloo ...	1	...	Coolies generally in good health, but there are three cases of yaws progressing under medical treatment.
28	Lataste	18	11	...	1	.....	.....	.....	...	...	Coolies all well.
29	River Antoine	3	...	...	...	.....	.....	.....	...	...	
30	Laclicries	30	15	2	...	.....	.....	.....	...	...	Dookun with a little fever, under treatment; others well.
31	Calising	27	18	...	1	.....	.....	.....	...	...	Four cases of yaws, under successful treatment; others well.
32	Montrose	45	17	...	...	.....	.....	.....	...	...	Other coolies all well.
33	Prospect Park	1	...	...	...	.....	.....	.....	...	...	
34	Grenville Vale	8	3	...	...	.....	.....	.....	...	...	
35	Meribeau and St. Cyr ...	10	3	...	...	.....	.....	.....	...	...	
36	Dunfermline	38	17	2	1	September 11 ...	Diarrhœa	Gassoo, female ...	...	1	
						October 2 ...	Debility	Thajoo, male ...	1	...	
						December 8 ...	Locked Jaw	Dinnoo, male ...	1	...	
						„ 11 ...	Ascitis	Boodho, male ...	1	...	
37	Requin	37	9	1	...	.....	.....	.....	...	...	Booked in estate hospital, ulcers; others well.
38	Mornefendue	20	8	...	...	November ...	Thrust	Innan, infant ...	1	1	Other coolies all well.
39	Montreuil	30	18	3	1	.....	.....	.....	...	...	
40	Piedmont	3	...	...	...	.....	.....	.....	...	...	
41	Diamond	7	4	...	...	.....	.....	.....	...	...	
42	Grand Baerlet	41	20	1	...	July 4 ...	Still-born	Infant ...	1	...	
43	Palmiste	17	13	...	1	„ 28 ...	Congestion of the brain ...	Pauljoo ...	1	...	
44	Bocaze	3	...	1	...	.....	.....	.....	...	...	
45	Simon	21	8	...	...	.....	.....	.....	...	...	
46	Paradise	34	20	1	...	October 9 ...	Dysentery	Ramdeen ...	1	...	
47	Mount Rich	33	21	...	2	„ 18 ...	Ulcerated feet	John, a child ...	1	...	
48	Carriere and Conference ...	45	19	1	1	.....	.....	.....	...	...	
49	Telescope	41	25	...	1	September 12 ...	Excessive drinking ...	Heramum ...	...	...	
	Births ...			19	14	to 31st December 1869		Deaths ...	13	5	to 31st December 1869.
	Births. ...			15	11	to 30th June „		Deaths ...	16	9	to 30th June 1869.
	TOTAL...			34	25			TOTAL ...	29	13	

The preponderance of births over the deaths among the Indians in this Return may be regarded as a favorable indication. The births equal to 2·46 per cent., and the deaths 2·38 per cent. The seasons of 1869 were unusually dry and healthy, and the immigrants were found by me during inspections in the month of January to be in general good health. Some cases of yaws were under good treatment on estates, and the disease itself much abated.

IMMIGRATION OFFICE,
Grenada, the 21st February 1870.

G. G. MUNRO,
Immigration Agent, Grenada.

Statement of Cotton Cultivation in the Province of Sind during the year 1869-70, contrasted with the extent in the previous year 1868-69.

Number.	District.	1868-69. Extent of land cultivated. Native Cotton.	Foreign Cotton.	Total.	Number of Saw-gins in use.	1869-70. Extent of land cultivated. Native Cotton.	Foreign Cotton.	Total.	Number of Saw-gins in use.	Prospect of season's crop. Raw Cotton.	Cleaned Cotton.	Remarks.
	Kurrachee Collectorate.	Acres G. A.	Acres G. A.	Acres G. A.		Acres G. A.	Acres G. A.	Acres G. A.		Acres G. A.	Acres G. A.	
1	Kurrachee	.....	29 5 0	29 5 0	...	.....	30 21 0	30 21 0	...	50 0 0	12 20 0	
2	Dadoo	2,558 24 0	.....	2,558 24 0	...	3,707 12 0	3 21 0	3,710 33 0	...	5,571 30 0	1,850 10 0	
3	Sehwan	265 32 0	.....	265 32 0	...	265 0 0	.....	265 0 0	...	863 2 1	287 27 1	
4	Mahjunda	166 15 0	4 5 0	170 20 0	...	82 35 0	.....	82 35 0	...	179 30 0	48 24 0	Acres G. A.
5	Kotree	25 36 0	1 0 0	26 36 0	...	65 20 0	.....	65 20 0	...	98 10 0	24 25 0	Increase in Native
6	Tatta	21 13 0	0 12 0	21 25 0	16	46 39 0	.....	46 39 0	16	176 0 0	44 0 0	Cotton ... 1,234 3 0
7	Sacra	.....	0 31 0	0 31 0	...	1 20 0	.....	1 20 0	...	.....	.....	
8	Ghorabaree ...	.....	.....	.....	...	1 16 0	0 15 0	1 31 0	..	.....	.....	Decrease in Foreign
9	Meerpore Buttora ...	45 5 0	.....	45 5 0	32	106 2 0	.....	106 2 0	70	517 10 0	161 35 0	Cotton ... 0 36 0
10	Beyla	32 3 0	.....	32 3 0	7	72 13 0	.....	72 13 0	13	145 18 0	36 7 0	
11	Jattee	12 19 0	.....	12 19 0	2	12 31 0	.....	12 31 0	2	35 15 0	11 32 0	
12	Shahbunder ...	.....	.....	.....	...	0 2 0	.....	0 2 0	...	0 3 0	0 1 0	
	Total ...	3,127 27 0	35 13 0	3,163 0 0	57	4,361 30 0	34 17 0	4,396 7 0	101	7,636 38 1	2,477 21 1	
	Hyderabad Collectorate.											
1	Hyderabad	3,752 6 0	4 26 0	3,756 32 0	1,671	4,393 33 0	20 0 0	4,413 33 0	1,780	33,310 24 0	8,327 26 0	
2	Goonee	676 0 0	12 24 0	688 24 0	210	1,126 0 0	0 12 0	1,126 12 0	492	4,584 0 0	1,528 0 0	
3	Buddeen	199 0 0	3 0 0	202 0 0	58	329 0 0	.....	329 0 0	135	625 0 0	240 0 0	
4	Baga Tanda ...	240 35 0	3 29 0	264 24 0	125	371 26 0	.....	371 26 0	125	1,000 0 0	259 0 0	
5	Dehra Mohbut ...	2,899 3 0	25 17 0	2,915 20 0	940	3,495 20 0	.....	3,495 20 0	950	5,432 0 0	1,358 0 0	
6	Halla	4,824 18 0	2 16 0	4,826 34 0	1,140	5,089 0 0	1 23 0	5,091 23 0	1,145	50,006 0 0	12,501 15 0	Increase in Native
7	Shhadadpore ...	4,872 5 0	4 22 0	4,876 27 0	975	5,185 8 0	.....	5,185 8 0	918	28,218 7½ 0	8,719 30 0	Cotton ... 1,501 29 0
8	Alyar-ka-Tanda ...	6,987 17 0	.....	6,987 17 0	2,220	6,671 31 0	.....	6,671 31 0	2,120	26,687 4 0	8,895 28 0	
9	Meerpore	2,734 0 0	2 0 0	2,736 0 0	465	3,954 0 0	.....	3,954 0 0	330	12,500 0 0	3,900 0 0	Decrease in Foreign
10	Nowshera	2,418 20 0	.....	2,418 20 0	328	1,150 0 0	.....	1,150 0 0	330	2,300 0 0	525 0 0	Cotton ... 36 19 0
11	Kundiara	1,031 39 0	.....	1,031 39 0	208	1,026 37 0	.....	1,026 37 0	176	3,156 0 0	870 0 0	
12	Mora	180 12 0	.....	180 12 0	40	517 5 0	.....	517 5 0	79	1,788 20 0	473 25 0	
13	Sukkrund	1,033 32 0	.....	1,033 32 0	390	981 16 0	.....	981 16 0	400	3,800 0 0	1,151 36 0	
	Total ...	31,800 27 0	58 14 0	31,859 1 0	8,770	33,302 16 0	21 35 0	33,324 11 0	8,980	173,407 15½ 0	48,741 0 0	
	Shikarpore Collectorate.											
1	Larkana	4,693 0 0	.....	4,693 0 0	...	4,039 0 0	.....	4,039 0 0	...	1,928 0 0	482 0 0	
2	Rohree	6,054 0 0	.....	6,054 0 0	...	6,544 0 0	.....	6,544 0 0	...	5,240 0 0	1,310 0 0	Decrease in Native
3	Shikarpore and Sukkur	3,073 0 0	.....	3,073 0 0	...	2,387 0 0	.....	2,387 0 0	...	1,792 0 0	448 0 0	Cotton ... 1,128 0 0
4	Mehur	3,441 0 0	.....	3,441 0 0	...	3,163 0 0	.....	3,163 0 0	...	2,000 0 0	500 0 0	
	Total ...	17,261 0 0	.....	17,261 0 0	...	16,133 0 0	.....	16,133 0 0	...	10,960 0 0	2,740 0 0	
	Frontier—Upper Sind.											
1	Thool	594 21 0	24 11 0	618 32 0	154	347 16 0	.....	347 16 0	135	1,261 4 0	420 14 0	Decrease in Native Cotton ... 209 23 0
2	Kusmore	701 27 0	23 12 0	724 39 0	74	879 38 0	.....	879 38 0	77	1,555 24½ 0	851 34½ 0	Decrease in Foaeign
3	Jacobabad	892 12 0	25 33 0	918 5 0	182	751 23 0	.....	751 23 0	153	1,240 0 0	720 0 0	Cotton ... 73 16 0
	Total ...	2,188 20 0	73 16 0	2,261 36 0	410	1,978 37 0	.....	1,978 37 0	365	4,056 28½ 0	1,992 8½ 0	
	Thurr and Parkur.											
1	Oomercote	2,000 15 0	.....	2,000 15 0	125	1,500 0 0	.....	1,500 0 0	130	3,000 0 0	2,500 0 0	
2	Chachera	.....	.....	.....	...	.....	.....	.....	...	.....	.....	Decrease in Native
3	Kippra	284 37 0	5 0 0	289 37 0	50	250 0 0	.....	250 0 0	50	180 0 0	230 0 0	Cotton ... 551 20 0
4	Sanghur	157 8 0	0 30 0	157 38 0	21	150 0 0	.....	150 0 0	20	.....	312 0 0	Decrease in Foreign
5	Nuggur	10 0 0	.....	10 0 0	2	1 0 0	.....	1 0 0	1	1 0 0	.....	Cotton ... 5 30 0
6	Mitteo	.....	.....	.....	...	.....	.....	.....	...	.....	.....	
7	Deepla	.....	.....	.....	...	.....	.....	.....	...	.....	.....	
	Total ...	2,452 20 0	5 30 0	2,458 10 0	198	1,901 0 0	.....	1,901 0 0	201	3,181 0 0	3,042 0 0	Increase in Native Cotton ... 846 29 0
	Grand Total ...	56,840 14 0	172 33 0	57,003 7 0	9,435	57,677 3 0	56 12 0	57,733 15 0	9,647	199,242 2 0	58,992 29½ 0	Decrease in Foreign Cotton ... 116 21 0

COMMISSIONER'S OFFICE,
Kurrachee, June 1870.

W. L. MEREWETHER, *Colonel,*
Commissioner in Sind.

Memorandum by COLONEL W. L. MEREWETHER, K.C.S.I., C.B., Commissioner in Sind,—No. 1683, dated Kurrachee, the 21st June 1870.

SUBMITTED to Government, in reference to their Resolution No. 2679 of the 19th July 1867. The Statement shows a net increase of 846 acres 29 goontas in Native cotton, and a decrease of 116 acres 21 goontas in foreign. From the return of cotton reports during the current year, the trade in this article will far exceed any previous one.

GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

RULES REGULATING THE RUSSOOMS OF THE DESHMOOKS AND DESHPANDIAS IN THE DOMINIONS OF HIS HIGHNESS THE NIZAM OF HYDERABAD.

Extract translation from "Gazette" of His Highness the Nizam's Government, dated 22nd "Suffur" 1287 "Hijree."

A scheme in regard to the russooms of Deshmooks and Deshpandias.

In former days, Deshmooks and Deshpandias had full power in the adjustment and collection of the revenues of the land; they held in *ijara* (contract) several talooks and villages, and whenever the revenues failed, they were bound to make good the deficit to the Sircar and to grant nuzzurs. They were also required to keep up the establishment of mohurrirs in the dufturs of the Sircar; now these officers are relieved of the above responsibilities, and are free. The russooms or allowances they enjoy are not supported by sanads; it is therefore determined that Deshmooks, whose allowances have up to the present time been above five per cent. on the net revenue of the land after deduction of *dehsadur* (stationery), &c., be allowed only five per cent.

To Deshpandias 2½ per cent., and all income which they now derive from other sources, such as abkaree, grazing tax, &c., to revert to the Sircar, and be included in the general revenue.

2. Zemindars who now receive, and have up to this time received, less than five per cent. russooms, will be permitted to receive the same as usual without deductions of any sort; but they will have no claim whatever to income from other sources of revenue, such as abkaree, *wuncharai* (grazing tax), &c., and their right to the possession of land disallowed; but when they desire to take up land for cultivation, it will be given to them in preference to others on a fixed rental.

3. The amount of russooms which the zemindars receive on lands as *bill-muktah* (tenure fixed rent) will be continued to them as heretofore; but when the amount exceeds the five per cent. allowed, the excess will be struck off. Should the allowance, however, fall short of the five per cent., the recipients will be allowed no more than what they receive, and the difference will not be made good to them; but there is no objection on the part of the Sircar to continue such lands to them on fixed tenure.

4. Others in possession of jagheers, muktahs, &c., will have their title to them enquired into, and their claims disposed of under the rules.

5. Persons who hold authentic and valid sanads in support of their russooms, and who are not willing to abide by the rules now proposed for the settlement of their claims, will intimate the same within three months to the talookdar, who will, after enquiry into the circumstances of the case, submit a final report to the Sircar, when the necessary orders will be issued, as the Sircar is willing to recognize claims based on authentic and valid documents.

6. It is also necessary that persons in possession of jagheers and muktahs should present documents supporting their claims within three months to the talookdars, who will submit the same with the necessary statements in each case for the orders of the Sircar.

7. Zemindars are hereby informed that they should within three months institute their claims before the talookdar; that after that period their representation will not be noticed by the Sircar unless upon the strongest grounds.

8. Deshmooks and Deshpandias are, by this arrangement, relieved of all their former responsibilities and interference; they will, if zealous, no doubt do well. There is no objection to their sending in applications for any appointments under the Sircar which will be glad to save them; but it is necessary that the applicant must possess a thorough knowledge of the language and ability to discharge the duties of the post for which he may apply, and must also be civil and polite in his manners. On receipt of applications as above, the talookdars will consider whether the appointment sought is within their gift, if not, they will refer the application to the Sircar. For certain reasons, it would appear necessary that such wuttundars, if appointed, should at present be posted in other localities than their own.

(True translation.)

C. WODEHOUSE,
Offg. 2nd Assistant Resident, Hyderabad.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

TRAINING IN INDIA OF NATIVES FOR THE POSITION OF FOREMEN MECHANICS.

Resolution by the Government of India, Public Works Department,—Circular No. 35, dated Simla, the 29th June 1870.

READ again—

Public Works Department circular No. 95 of 20th October 1869.

Despatch No. 159 of 29th November 1869, to Her Majesty's Secretary of State.

Read also the following despatch:—

From Her Majesty's Secretary of State for India, to the Government of India,—No. 15, dated London, the 10th March 1870.

I have duly received your Excellency's despatch No. 159 of 29th November last, forwarding copy of a Resolution recorded by your Government on the best mode of recruiting the Upper Subordinate Establishment of the Public Works Department, and recommending that thirty European artificers be engaged and sent out for service in that Department.

2. I have directed that suitable steps be at once taken for complying with this requisition, which I trust, however, is not intended to be frequently repeated. The class of men asked for are not such as it is expedient to introduce in large number into India. Probably the importation from Europe of skilled foremen may have been considered necessary at the commencement of the large railway and irrigation works about to be undertaken, but those works will themselves constitute an unexceptionable training school, and your Government will doubtless impress on the Executive Officers the importance of taking full advantage of the opportunities thus afforded of training both Natives and Europeans for the position of foremen mechanics.

3. I am informed, too, that there are generally in India a good many European artizans and artificers who, having been brought out by railway or other contractors for some special service, remain, after its termination, for a while at large. Others of the same description, who were formerly engaged in the Government Dockyard at Bombay, may not improbably still be in the country without regular employment. How far by keeping a constant look-out for men so circumstanced, and with the assistance to be obtained from Roorkee, it would be possible to recruit the Upper Subordinate Establishment, your Excellency must be best qualified to judge.

OBSERVATIONS.—In dealing with the important question of the best mode of recruiting the Upper Subordinate Establishment of the Public Works Department, it was considered that the demand for artificers, specially experienced in iron-work, machinery, brick-making, &c., which the construction of railways and large irrigation works by the State had created, could not be fully met in India, and that such skilled workmen should be drawn in a great measure from England and other places in Europe. The Secretary of State was accordingly requested to take the necessary steps in the first instance to engage and send out to India thirty men of this class who had complete practical knowledge of their several trades.

2. The Secretary of State intimates in his reply that orders have been issued for meeting the demand; but, for the reasons stated in the despatch, expresses a hope that such requisitions will not be frequent.

3. The Governor General in Council remarks that when it was determined to obtain artificers from Europe, the Government of India was fully alive to the objections to importing this class of men largely into the country, and it was the intention to look to Europe for a supply only until the Public Works Department was in a position to train such men in the large Government works about to be undertaken. There is practically, therefore, no difference in the views entertained by the Government of India and the Secretary of State on this point.

4. But His Excellency in Council considers that the opportunity may usefully be taken to impress strongly on the several Local Governments and Administrations concerned, and on the superior Officers of the Department the great advantage of endeavouring, as far as possible, to train the natives of this country in all those branches of handicraft that are necessary to the construction and maintenance of railways. It may not be possible to dispense altogether with European artizans; but there is little doubt that much more can be done than has hitherto been attempted, in the direction of employing Native artificers, especially in the lighter descriptions of iron-work.

5. As large railway and irrigation works are put in hand, it can scarcely be expected that the local supply will altogether meet the demand for specially-qualified men of the class in question; but every large work of the magnitude of a railway or canal, and every shop in connection with such, forms a training school for artizans; and from these there is no doubt that some suited for the position of foremen could be obtained. To ensure this result it will probably be necessary to attach a school to each large shop, which likely men should be encouraged to attend, and those that give promise of rising to the responsible position of foremen should be helped, and their practical knowledge supplemented with theoretical training and some instruction in drawing. The success of the experiment will of course depend mainly on the tact, judgment, and energy of the men at the head of the shops; but His Excellency in Council sees no reason to doubt the successful issue of the experiment if the object is put before these Supervisors as one to which the Government of India attaches much importance, and if the Local Governments interest themselves in securing its accomplishment.

6. Of course it is to be clearly understood that there is no desire on the part of the Government of India to raise the Natives to the responsible position above indicated, unless it can be clearly shown that their employment is not likely to interfere with efficiency of work. All that is intended is to make well-directed and persistent efforts so to qualify Natives as to justify their employment in the position of foremen.

7. His Excellency in Council cannot too strongly commend this matter to the careful consideration of the Local Governments and Administrations, and will be glad to receive, and consider any suggestions which they may desire to offer, and which are calculated to further the attainment of the important object in view.

ORDER.—Ordered, that a copy of this Resolution be forwarded to the Local Governments and Administrations marginally noted.

Governments of Madras, Bombay, Bengal, the North-Western Provinces, and the Punjab.
Chief Commissioners of the Central Provinces, Oudh, British Burmah, and Mysore and Goorg.
Resident at Hyderabad.
Agents to the Governor General for Central India and Rajpootana.

EAST INDIAN RAILWAY—FENCING OF THE LINE IN THE NORTH-WESTERN AND CENTRAL PROVINCES.

From MAJOR J. HOVENDEN, R.E., Officiating Joint Secretary to the Government of Bengal in the Public Works Department, Railway Branch, to the Secretary to the Government of India, Public Works Department,—No. 802G, dated Fort William, the 17th April 1869.

IN continuation of previous correspondence on the subject, I am directed to forward, for the information of the Government of India, a copy of a communication noted on the margin, from the Secretary to the Chief Commissioner, Central Provinces, complaining of the unfinished state of the fencing on the Jubbulpore line. No provision, I am to state, has been made for a continuous wire-fence along this line. A sum of Rs. 3,58,922 has been entered in the completion estimate of the line, which is intended to provide about 80 miles with a ditch and mound surmounted by a double wire-fence, leaving the remaining 150 miles to be fenced with only a ditch and mound, or with a loose stone-wall.

No. 113—1434, dated 9th April 1869.

2. It is well known that the simple ditch and mound fence will not prevent trespass by cattle, and the black soil through which a great protion of the Jubbulpore line runs, is peculiarly unsuited for the formation of a good fence of this description. The subject has already been brought to the notice of the Government of India, and the question of providing a good fence was discussed in the last Quarterly Inspection Report of the line. It is understood that the general question of fencing for railways is now under the consideration of the Government of India, and I am to request that specific orders may be given respecting the fencing of both the upper division of the East Indian Railway and of the Jubbulpore line.

3. With reference to the remark respecting the promise made by the railway authorities to complete the fencing of the line by the middle of September, I am to state that the Commissioner of Jubbulpore must have misunderstood the railway authorities in thinking that the promise referred to wire-fencing. The existing sanction provides only for a ditch and mound on the length referred to, and this was completed at the time the last inspection of the line was made.

Memorandum by MAJOR C. POLLARD, R.E., Secretary to the Chief Commissioner of the Central Provinces in the Public Works Department,—No. 115—1434, dated Nagpore, the 9th March 1869.

COPY of the following forwarded to Consulting Engineer for Railways, Bengal, and states the Chief Commissioner hopes that the Company may be induced to take steps to remedy the state of the fences on the line of rail.

From the Commissioner of Jubbulpore Division, to the Secretary to the Chief Commissioner of the Central Provinces in the Public Works Department,—No. 986, dated Jubbulpore, the 30th March 1869.

ADVERTING to your No. 89—1175 of the 16th March 1868, I have the honor to forward for the consideration of the Chief Commissioner, a copy of a letter No. 500 of the 18th instant, from the Deputy Commissioner, Jubbulpore, representing the inconveniences and risks arising from the unfenced state of the Jubbulpore Branch of the East Indian Railway, and I trust the Chief Commissioner will deem it expedient to bring the matter before the responsible authorities, as there seems to be no reason why there should be so much delay in completely fencing this line.

2. In September last I was in correspondence with the railway authorities, which terminated with a promise that the portion of the line under Mr. Olpherts would be wholly fenced in "by the middle of September;" and from Major Playfair's letter, which was written a little more than a week ago, the Chief Commissioner will learn that the line is unfenced near Moorwarrah, where Mr. Olpherts resides.

From the Deputy Commissioner of Jubbulpore, to the Commissioner of the Jubbulpore Division,—No. 500, dated the 18th March 1869.

MORE than a year has elapsed since the Government of India exonerated the Deputy Commissioner, Jubbulpore, from enforcement of section 20, Act XVIII. of 1852, and yet up to this time no wire-fencing has been put up in the East Indian line to Allahabad.

2. The people generally along the line complain that the low bank and narrow ditch is no sufficient barrier, and that when cattle are herded near the line, it is impossible to prevent them trespassing. I myself can vouch for this, as I saw a herd near Moorwarrah in charge of one man trespass under circumstances in which he could not be held to be in blame. One cow eyed the green succulent grass on an embankment slope for a few seconds, and then clearing the ditch at a bound and scrambling over the bank was followed by half the herd before the herdsmen knew what they were about.

3. I would point out that section 21 of the Act cannot be enforced if section 20 is allowed to remain in abeyance, and would therefore solicit that the subject may be again forced on the notice of the Railway Company with a view to the bank being crowned with a sufficient wire-fence as soon as possible.

4. Were this done it would be impossible for cattle even to be *driven* on the line except at the level-crossings, which are now being protected by stone-posts and iron-gates, and which are watched by the gate-keepers.

From MAJOR E. C. S. WILLIAMS, R.E., Under Secretary to the Government of India, Public Works Department, to the Officiating Joint Secretary to the Government of Bengal in the Public Works Department, Railway Branch,—No. 561 R, dated Simla, the 15th May 1869.

I AM directed to acknowledge the receipt of your No. 802G, dated the 17th April 1869, forwarding a letter from the Chief Commissioner of the Central Provinces regarding the unfinished state of the fencing on the Jubbulpore line, and requesting the issue of specific orders for fencing both the upper division of the East Indian Railway and the Jubbulpore line.

2. In reply, I am directed to invite attention to paragraph 1 of my letter No. 403R of the 14th ultimo, desiring that the Board of Agency may be called upon to complete without delay an efficient fence for the Jubbulpore line in anticipation of the through opening to Bombay; and, in now intimating that the only places in which fencing may be dispensed with, either on the Main or Jubbulpore lines, are those which are naturally fenced, as by swamps, to observe that the Government of Bengal is under a misapprehension in supposing that the general question of fencing is under the consideration of the Government of India.

It is for the Agency to propose an efficient fence of as cheap a description as may be possible, and for the Government of Bengal to see that it is erected without delay as soon as the ordinary procedure as to estimates has been complied with.

Nos. 562—3R.

COPY forwarded for information to the Government of the North-Western Provinces, and the Chief Commissioner, Central Provinces, in the Public Works Department, Railway Branch.

From COLONEL H. D. DALY, Officiating Agent to the Governor General for Central India, to the Secretary to the Government of India, Foreign Department,—No. 13, dated Indore Residency the 16th August 1869.

I HAVE the honor to forward a representation made by Mr. Coles, the Political Assistant and Railway Magistrate in Bundlekhund, on the insufficiency of the fencing along the line of the Allahabad and Jubbulpoor Railway.

No. 375, dated 3rd August 1869, from Political Assistant, to Political Agent, Bundlekhund, received with Political Agent's No. 313, dated 9th idem.

2. Mr. Coles, on 26th April last, directed the attention of the District Engineer, East Indian Railway at Oocheyra, to the defects in detail—

1*st*, that the ditch and embankments were not so constructed as to prevent cattle from scrambling over;

2*nd*, that the level-crossings are without gates to bar cattle from straying;

3*rd*, that at the stations with fencings, there are many unguarded gaps;

4*th*, that some stations are without fencings at all; and

5*th*, that the fencings at most of the bridges are faulty.

3. Again, on 29th May, Mr. Coles addressed the District Engineer that he had understood the Railway Company intended fixing a wire fence along the bank to keep cattle off the line; without this there could be no security, and Mr. Coles begged that early measures might be taken to effect the work.

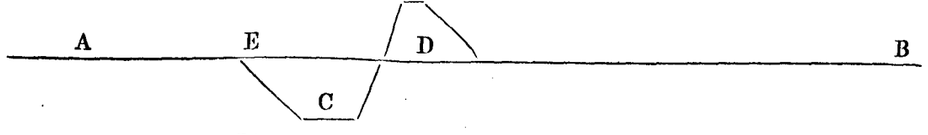
4. Copies of the above communications were forwarded to me by the Political Agent in Bundlekhund.

5. The correspondence which is now submitted is in reply to my enquiry as to whether it was desired that the matter should be brought to the notice of Government. Defective fencing along a line of Railway has, on several occasions, caused loss of life, and as the local references made in a becoming tone have been without effect, I think the Political Agent has acted wisely in bringing the defects to notice.

From C. R. COLES, ESQ., Political Assistant, to the Political Agent in Bundlekhund,—No. 375, dated 3rd August 1869.

WITH reference to Office Memorandum of the Central India Agency Office, forwarded with docket No. 624, dated 26th June, I have the honor to state that, in my opinion, a representation to Government regarding the insufficiency of the fencing of the Railway line is necessary.

2. The fence is of two kinds: in some parts, there is a wall constructed of loose stone, and this, I believe, is secure; in other parts, a ditch and earthen bank form the fencing, the bank is raised with the earth taken from the ditch. The following sketch represents, as far as I am able, the construction of the *cutcha* fence:—



Line A to B is the ground level.

C is the excavation.

D the bank raised with its contents.

E is the Railway boundary.

3. If ditch C was designed to add difficulty to ingress to Railway lands by cattle, it has failed in effect. The cattle jump easily from point E to some convenient landing place on the bank, and thence stray to the most inviting grazing places on the line, and so occasionally get run over.

4. Such occurrences seldom affect the train, but I presume it is to guard against any chance of accident that a sufficient fence is required.

5. I have myself seen cattle getting over the *cutcha* fence quite easily, and the number of cases of cattle trespass occurring, show that the *cutcha* fence is not calculated to keep cattle out.

Memorandum from DR. J. P. STRATTON, M.D., Political Agent in Bundlekhund, to the Agent to the Governor General for Central India,—No. 313, dated Nowgong, the 9th August 1869.

IN reference to your No. 796, dated 14th ultimo, regarding the insufficiency of the fencing of the Allahabad and Jubbulpoor Railway line, I forward herewith copy of Mr. Coles' No. 375, dated 3rd instant, on the subject. It is but recently that a very serious accident on a Railway in Western India occurred from a stray animal getting on the line.

From the Government of India, Public Works Department, to the Officiating Joint Secretary to the Government of Bengal in the Public Works Department, Railway Branch,—No. 1397R, dated Simla, the 15th September 1869.

THE Agent to the Governor General for Central India having brought to notice the insufficiency of the fencing along the line of the Allahabad and Jubbulpoor Railway, I am directed to request that an immediate report may be submitted as to what is being done, or is intended to be done, during the current year by the East Indian Railway Company in the matter of fencing, with reference to the orders communicated in Public Works Department No. 561R, dated the 15th May 1869.

2. The reply to this enquiry should also embrace the main line fencing in the North-Western Provinces which is also reported to be far from efficient.

3. Looking to the magnitude of the existing traffic on the main line, and what may be shortly expected on the Jubbulpoor line, also to the fact that it is carried on by night, it is absolutely essential that this matter should be no longer postponed, and in the event of any undue delay on the part of the railway authorities in doing the needful, it will be the duty of the Supreme Government to call upon the local authorities to enforce the law against the Company.

From MAJOR J. HOVENDEN, R.E., Officiating Joint Secretary to the Government of Bengal in the Public Works Department, Railway Branch, to the Secretary to the Government of India, Public Works Department,—No. 2093 G, dated Simla, the 23rd September 1869.

I AM directed to acknowledge the receipt of your letter No. 1397 R, dated 15th instant, calling for a report, as to what is being done, or is intended to be done, during the current year, on the matter of fencing both the main line in the North-Western Provinces, and the Jubbulpoor Branch of the East Indian Railway, and, with reference to the state of the fencing along the latter line, I am to forward a copy of the papers noted on the margin, from which it will be seen that the contractors have already been requested to proceed with the completion of the fencing as speedily as possible.

No. 464G, dated 23rd August 1869, from Chairman, Board of Agency, East Indian Railway.
No. 1883 G, dated 28th August 1861, to Secretary to Chief Commissioner, Central Provinces, Public Works Department.

2. A further report on the subject has, I am to add, now been called for from the Board of Agency, East Indian Railway, and will be forwarded as soon as it is received.

Memorandum by C. STEPHENSON, ESQ., Chairman, Board of Agency, East Indian Railway Company,—No. 464 G, dated 23rd August 1869.

COPY of the following forwarded to Consulting Engineer, Government of Bengal, for information, and in reference to his docket No. 1575G of 26th July last.

From G. SIBLEY, ESQ., Chief Engineer, to the Chairman, Board of Agency, East Indian Railway Company,—No. 1579, dated the 20th August 1869.

YOUR docket No. 3132 of 28th ultimo, forwarding Officiating Joint Secretary to Government of Bengal's No. 1575G of 26th July 1869.

I did not reply at once to the above, as it did not appear to call for any immediate reply, and I had, prior to receipt of same on my last inspection of the Jubbulpoor line on 5th and 6th July, called attention to the fencing, and directed that it should be made up to full height and depth immediately that the first rain fell.

With reference to the Chief Commissioner, Central Provinces' letter of 5th June, to the address of Commissioner, Jubbulpoor, I would state that it was impossible that any effective action should have been taken by the East Indian Railway between 31st May and 30th June.

The least regulation height of bund is three feet, and the least depth of ditch is three feet, a continous slope of six feet in height, with a slope of half to one is a sufficient barrier to all but wilful trespass.

In some of the lower portions the bund had been constructed with a berm or bench one foot wide at inner edge of ditch, this is being cut away and the slope made continuous.

The contractors have been desired to proceed speedily with the work.

From MAJOR J. HOVENDEN, R.E., Officiating Joint Secretary to the Government of Bengal in the Public Works Department, Railway Branch, to the Secretary to the Chief Commissioner, Central Provinces, in the Public Works Department,—No. 1883 G, dated Fort William, the 28th August 1869.

IN continuation of this Office letter No. 1813 G, dated 21st instant, I am directed to forward, for the information of the Chief Commissioner, Central Provinces, a copy of a letter noted on the margin, from the Chairman, Board of Agency, East Indian Railway, explaining the circumstances under which no steps were taken for repairing the fencing along the Jubbulpoor line at the time of the Deputy Commissioner's inspection, and adding that the maintenance contractors have received instructions to proceed with the repairs as speedily as possible.

No. 464 G, dated 23rd October 1869.

From the Government of India, Public Works Department, to the Officiating Joint Secretary to the Government of Bengal in the Public Works Department, Railway Branch,—No. 1531 R, dated the 4th October 1869.

IN reply to your No. 2093 G, dated 23rd ultimo, I am directed to enquire whether the mound fencing of the Jubbulpoor line and Upper Division of the East Indian Railway, which is described in the enclosure to the above letter, is intended to be surmounted by wires, and, if not, whether such a fence is considered efficient by the Government of Bengal.

From LIEUTENANT-COLONEL J. HOVENDEN, R.E., Officiating Joint Secretary to the Government of Bengal in the Public Works Department, Railway Branch, to the Secretary to the Government of India, Public Works Department,—No. 2279 G, dated Fort William, the 26th October 1869.

IN reply to your letter No. 1531 R, dated 4th instant, enquiring whether the mound fencing along the Upper Division of the main line and the Jubbulpoor line of the East Indian Railway is intended to be surmounted by wires, and if not, whether such a fence is considered efficient, I am directed to state, for the information of the Government of India, that it is intended to surmount the mound with a live-fence; this the Lieutenant-Governor considers will be sufficent.

2. I am to add that the Railway Company hope they will be able to induce the live-fence to grow on the mound in most parts of the line; where, however, the live-fence will not grow, the mound will be surmounted by two wires.

3. The mound alone, in the opinion of the Lieutenant-Governor, cannot be considered an efficient fence.

From the Government of India, Public Works Department, to the Joint Secretary to the Government of Bengal in the Public Works Department, Railway Branch,—No. 1921 R, dated Fort William, the 20th December 1869.

I AM directed to acknowledge the receipt of your No. 2279 G, dated 26th October 1869, reporting that the Lieutenant-Governor does not consider a plain mound fence to be efficient, and that on both the Upper Division of the main line and the Jubbulpoor line the existing mounds are to be topped by live-fences, or by wires where the latter will not grow.

2. In reply, I am directed to remark that sufficient experience must have already been acquired at least on many portions of the line to determine at once the practicability of cultivating an efficient live-hedge, and that any further experiment tending to postpone the accomplishment of the object in view should be avoided. The Government of India cannot avoid

remarking that a serious responsibility in case of the occurrence of any accident through want of an efficient fence will rest upon both the Company and the controlling Government, and His Excellency in Council will trust that there will be no further unavoidable delay on the part of the former in complying with the orders on this subject.

From MAJOR F. S. TAYLOR, R. E., Joint Secretary to the Government of Bengal in the Public Works Department, Railway Branch, to the Secretary to the Government of India, Public Works Department,—No. 684 G, dated Fort William, the 23rd March 1870.

IN reference to Public Works Department No. 1921 R, dated 20th December last, I am directed to forward, for the information of the Government of India, the accompanying copy of a Note dated 14th March 1870, by the Consulting Engineer to this Government, on the subject of fencing the main line and the Jubbulpoor Branch of the East Indian Railway, and to state that copies of the Note have been forwarded to the Lieutenant-Governor, North-Western Provinces, to the Chief Commissioner, Central Provinces, and to the Governor General's Agent for Central India, soliciting expressions of opinion on the question of the fencing of the East Indian Railway, which will be communicated to the Government of India in due course.

Note by MAJOR F. S. TAYLOR, R.E., *Consulting Engineer to the Government of Bengal, on the subject of Railway fencing,—dated 14th March* 1870.

I THINK it will be advisable, after obtaining a further expression of the views of the Lieutenant-Governor, North-Western Provinces, and Chief Commissioner, Central Provinces, to make another representation to the Government of India on the subject of the fencing of the main line of the East Indian Railway in the North-Western Provinces, and the Jubbulpoor Branch in the Central Provinces, with special reference to Mr. Sibley's letter No. 443 G, dated 25th February, received under cover of Agency Memorandum No. 137 G, dated 3rd March, as the points at issue still appear to be imperfectly understood, or the difficulties appreciated.

For instance, I find it stated in Public Works Department letter No. 1397 R, dated 15th September 1869, to this Office, that the Supreme Government contemplate enforcing the existing law against the Company on the ground that the safety of passengers is actually endangered from cattle getting on the line although the necessity for a revision of the law in the interests of the Railway Company has long been recognised, and an amendment embodied in the draft of the new Railway Bill. The most recent communications from the Government of India appear also to ignore the practical difficulty of efficiently fencing a railway through the wild grazing country so graphically described by the Officiating Magistrate of Banda in his letter No. 1518 B, dated 29th September 1869, to the address of the Commissioner of Allahabad. And quite recently the Chief Commissioner of the Central Provinces, on diametrically opposite grounds, has been taking up the question in the interests of the villagers whose cattle, when roaming at large, are often killed by the trains, and appears to contemplate action against the Railway Company on a communication No. 1726, dated 20th May 1869, from the Commissioner of Jubbulpoor. The case is further complicated by a recent communication on the subject of State Railway fencing alluded to by Mr. Sibley in his letter of 25th February, and the Board of Directors have now instructed the Agency to make an official representation on the subject of the proposed fine for trespass, so that to put the law as it stands in force, would, I submit, have a most unfortunate effect.

No. 1531 R, dated 4th October.
„ 1921 R, „ 20th December.

Letter No. 102 of 1869, forwarded under Public Works Department docket No. 78 R of 13th January.

I will therefore take this opportunity to draw attention to some remarks on the subject of fencing in the Note on some distinctive features of railway construction in the United States, which I have laid before Government in hopes that they may be found to contain a practical solution of the difficulty by indicating a principle on which a law applicable to all Railways may be framed.

If, in the case of each railway separately, the Local Government through whose territories the line runs be empowered once for all to prescribe, after due consideration of the circumstances of the country and traffic the form of fence to be adopted, the question of its maintenance can, I submit, occasion no further difficulty; nor under such conditions need any legal distinction be made between high and low speed railways, for the risk, whether to the public or the cattle, is one of degree only.

As respects the fencing of the East Indian Railway in the North-Western Provinces and the Jubbulpoor Branch, I find that Joint Secretary's letter No. 2279 G, dated 26th October 1869, is open to misconception; for it is only on lengths favorable to vegetation on the main

line in the North-Western Provinces that the East Indian Railway Company are growing a fence, while they are only placing the two wires on so much of the mound and ditch fence as they find themselves unable to maintain properly. On the Jubbulpoor Branch the Company has expended during the last two years as much as Rs. 1,50,000 on completing the dry stone fence where the material is available, or elsewhere on the ditch and mound, and I am now strongly of opinion that, if the existing fence on the whole East Indian Railway is properly maintained for the future, it will be found to answer every purpose.

Memorandum from E. PALMER, ESQ., Chairman, Board of Agency, East Indian Railway, to the Consulting Engineer to the Government of Bengal, Railway Department,—No. 137 G, dated 3rd March 1870.

IN reference to Consulting Engineer's No. 419 G of 23rd ultimo, the undersigned has the honor to forward herewith copy of Chief Engineer's letter No. 443 of 25th idem, remarking on the subject of fencing on the North-Western Provinces and Jubbulpoor lines.

From G. SIBLEY, ESQ., Chief Engineer, to Chairman, Board of Agency, East Indian Railway,—No. 443, dated 25th February 1870.

YOUR docket No. 750.

With one exception, all the complaints on the subject of fencing in the correspondence noted refer to the Jubbulpoor line.

There is no doubt but that it was not maintained in an altogether satisfactoy condition, but the attention of the local Engineers was repeatedly called to the subject until the contractors took the matter in hand. On above subject I refer to my No. 1579 of 21st August last. On my recent visit I was informed by Mr. Spencer that there had been no case of cattle tresspass during this year.

With reference to the North-Western Provinces, and on the subject of fencing generally, I beg to refer to my No. 2291 of 11th November 1865, and to my No. 2890 of 8th August 1866.

With advertence to the 2nd paragraph of Government of India's No. 1921 R, calling attention to the serious responsibility in the case of an accident through the want of an efficient fence, which will rest upon both the Company and the controlling Government, I would venture to observe that, in my opinion, we should be weak and scarcely honest if we allowed the bugbear of responsibility to frighten us into incurring a needless and wasteful expenditure of Rs. 5,000 per mile.

That it is needless is proved by the safe working in the North-Western Provinces, extending over 11 years, and for myself, I am quite ready to accept the responsibility which may attach to working with our present fence properly maintained, and planted, with cattle-fenders attached to all trains carrying passengers.

The Locomotive Superintendent and goods drivers are prepared to accept the responsibility of working the goods engines without cattle fenders.

So far on the general question as it stood formerly, but since the date of most of the letters now under reply, we have seen published in Government of India *Gazette*, page 1383 of the Supplement dated 27th November last, under authority of Officiating Secretary to Government, Public Works Department, that it is propable that there will be a change in the law with regard to fencing where slow speeds are adopted, limiting it to the vicinity of stations and other places where absolutely necessary.

Further, under the same authority, it is notified in Supplement to Government of India *Gazette* dated 19th instant, page 291, that on the Punjab Northern (State) Railway, fencing will, for the present, be put up only near villages or frequented localities, and it must be left to time to prove the necessity of fencing the rail, even on one side throughout.

From page 293 of the same *Gazette*, it appears that the sum of Rs. 16,667 is sanctioned as the fit and sufficient sum for fencing the line, 102 miles in length, which would give an average of Rs. 163 per mile, and taking the cost of an efficient wire-fence at Rs. 5,000 per mile, would suffice for rather less than 1-30th of the extent of the line. In page 295 it is stated that this charge may probably be reduced.

From R. D. SPEDDING, ESQ., Officiating Magistrate of Banda, to the Commissioner, 4th Division, Allahabad,—No. 1518 B, dated 29th September 1869.

I CONSIDER it my duty to bring to your notice the large number of cattle that are killed by the trains on that portion of the Jubbulpoor Railway within this District.

2. The subject is one to which, I think, the attention of the Consulting Engineer to Government might fitly be called, as a serious accident similar to that which lately occurred on the Great Indian Peninsula Railway may happen at any time.

3. The accompanying Statement is only prepared for a period of two and a half months, in regard to which I had special enquiries made as to how the cattle got on to the line. The period is from the 13th May till the 26th July. It will be seen that nine cattle were killed, and that in every case the fence of the place near which they were found was of earth, not of stone.

4. While at Kirwee, I have from time to time corresponded with the Engineers of the Railway, and Messrs. Easton, Brandell and Power, Contractors, regarding the state of the earth fence. I have to report that it is kept in very good order, but is, in my opinion, altogether insufficient for the protection of the line.

5. The number of cattle kept on the hills through which the line runs is much larger than those kept on villages on the plains. Immense herds of cattle are sent to graze in the jungles, and they are much more wild and unmanageable than the ordinary village kind. A fence which would effectually stop the cattle on the main line, East Indian Railway, would not afford any obstacle to the cattle near this portion of the Jubbulpoor line. The earth fence is made with a deep trench on the outside, seven feet wide at top and three feet deep, with an embankment seven feet wide at base, and three feet to three feet six inches high. This is not, in my opinion, sufficiently steep to prevent an animal walking up in a slanting direction.

6. I can only say that on several occasions I have, when in the neighbourhood of the line, had cattle driven off, and have seen them walking down it. The inference is clear,—that they can walk up. The earth in this part of the District is not sufficiently tenacious to make a secure fence. I feel sure that exceptionally heavy rain might break it down in many places.

7. During my cold weather tour I had many complaints from the people regarding this earth fence. At that time I thought that the cattle might have got over at some places where it was out of repair. It was on my representation put into thorough repair, but still the cattle continued to come on to the line. In these parts it is impossible to prevent animals from straying, and, even when they are being tended, the herdsman sometimes cannot prevent one from bolting. The zemindars and owners of cattle are in the greatest terror of allowing their cattle to go near the line at all. Besides the loss of their cattle they have the dread of being prosecuted in the Criminal Court. They say that if the stone fence were built all along the line, it would be impossible for these cattle to break in, and I believe them.

8. I will give one instance which was proved to have occurred last year. A tiger or panther frightened a herd of cows; twenty of them rushed with a bound over the earthen fence, and one was killed almost immediately after by a train. The herdsman was near, but could not prevent it.

9. The Engineer in charge of this portion of Railway (Mr. F. B. Wakely, of Manickpore) does not take the same view of the case which I do. He adopts two positions,—*first*, that the fence is sufficient to keep out cattle; and *second*, that the cattle are driven on to the line by the villagers (over the fence apparently) to eat the grass. The two opinions seem to me inconsistent, as, if the fence were sufficient protection, the cattle could not be driven over it. I enclose a copy of one of his letters in which he contends for the correctness of both opinions.

10. The last opinion would be a serious charge against our villagers. I have made enquiries, and feel certain it is without foundation. The people, as above reported, dread the punishment for trespass, and have also the fear of losing their cattle by violent death; but the best proof is that during the greatest part of the period there was no grass whatever, as far as I could see, growing on the line. I visited the railway several times in May and June, and the railway lands were as much parched as any other part of the country. During those two months, the cattle were fed on leaves of trees—fodder there was none. Further, the villagers have permission to cut grass on the line and are glad to do so, whenever there is any to cut.

11. I have gone into the subject at length, as it is one into which, I think, a special enquiry should be made. My own opinion is, that the stone fence which is to be found along the greater part of the line in this District should be continued in an unbroken line. It is perfectly secure, and no cattle can cross it.

12. If it should be found too expensive to move stone to the spots where the earth fence now is, I would suggest a five-wired fence with iron uprights similar to that used on the Delhi Railway, that would effectually prevent the inroads of the hill cattle.

N. B.—Since drafting the above, I have received from Kirwee reports of nine other cattle having been killed; between July 26th and September 18th, seven were killed on one day. This makes the total from May 13th till the middle of September, 18 cattle in this District alone.

Statement showing the number of Cattle run over and killed by trains on the Jubbulpoor Line within the District of Banda, in the months from 13th May 1869 to 26th July 1869.

Name of Police Station.	Date of occurrence.	Number of Cattle.	Remarks.
Markoondee	13th May 1869...	1 bullock ...	Killed near the gate-crossing of Mouzah Bumbeea. Earth fence reported in good order.
Ditto	25th „ „ ...	1 ditto ...	Ditto ditto.
Manickpore	28th „ „ ...	1 cow	Earth fence.
Burgurh	31st „ „ ...	1 bullock ...	Near Mouza Magnoo. Earth fence.
Oochendee	20th June „ ...	1 cow	Killed at a place two miles south of Chowkee Oochendee. Earth fence reported in good order.
Markoondee	24th „ „ ...	1 ditto ...	Killed near the gate-crossing at Tickreea. Earth fence.
Mujgaon	13th July „ ...	1 ditto ...	Killed at a distance of five miles from the station. Earth fence. Mouzah Entowan, Zillah Banda.
Burgurh	15th „ „ ...	1 bullock ...	Near Mouzah Suraee, or at a distance of five miles from station. Earth fence.
Markoondee	26th „ „ ...	1 ditto ...	Killed at a distance of 100 paces south of Markoondee. Earth fence reported in good order.

ZILLAH BANDA;
The 6th September 1869.

R. D. SPEDDING,
Offg. Magistrate.

APPENDIX I.

Abstract of Proceedings of the Chief Commissioner's Office, Central Provinces, Nagpoor, in the Public Works Department, Railway Branch, dated 5th June 1869.

No. 1.

From Commissioner, Jubbulpoor, No. 1726, *dated* 20*th May* 1869.

IN continuation of his No. 986, dated 30th March 1869, forwards copy of a letter from Deputy Commissioner, Jubbulpoor, representing the danger to cattle owners from the want of a substantial fence on the line of Railway, Jubbulpoor, and suggests that the fencing be completed as quickly as possible.

No. 2.

Reply No. 1585—191.

IN continuation of No. 1529—174, dated 31st ultimo, requests he will call upon the Deputy Commissioner, Jubbulpoor, to report after a month whether any, and what, action has been taken by the East Indian Railway Company in the matter.

CHIEF COMMR.'S OFFICE, C. P.;
Nagpore, the 13*th July* 1869.

CHARLES GRANT,
Secretary.

Extract from a letter from the Board of Directors of the East Indian Railway, No. 102 *of* 1869.

PARA. 4. *Trespass of Cattle.*—Lieutenant Pye, the Government Inspector, in his Report for the 2nd quarter of 1869, remarks that in the three months embraced by it the number of cattle killed by the movement of the trains had amounted to 31. He has great doubts whether any fence can be constructed strong enough without inordinate expense to resist the united efforts of man and beast. He ascribes all the cases of cattle trespass on the line to the wilful act or wilful neglect of the villagers. In the course of his inspection, he noticed between two stations 19 cattle on the line which had strayed from seven herds grazing near it, and seven herdsmen calmly looking on without any attempt to prevent it. The herdsmen,

he observes, succeed in keeping off the cattle from their own crops, and those of their neighbours, though they are never fenced. In America the obligation of keeping cattle off the line is thrown on the farmer, and whenever a cow is ran over, the owner is fined; but Lieutenant Pye has been informed that Magistrates in India have no authority to inflict a fine for such an offence. He considers that a slight fine would produce a great change.

5. The Board are deeply impressed with the truth of these observations, the importance of which is increased by the official source from which they emanate. They have long been convinced that the only effectual mode of preventing the trespass and the slaughter of cattle on their line is to impose the small fine recommended by the Government Inspector, and as is the practice in the United States, and they desire you to take an early opportunity of submitting the question to the consideration of Government.

From MAJOR F. S. TAYLOR, R.E., Joint Secretary to the Government of Bengal, Public Works Department, Railway Branch, to the Secretary to the Government of India, Public Works Department,—No. 1104 G, dated Fort William, the 25th May 1870.

IN continuation of this Office letter No. 684 G, dated 23rd March last, I am directed to forward the accompanying copy of a further Note dated 19th May 1870, by the Consulting Engineer to this Government, on the subject of the fencing of the East Indian Railway in the North-Western and Central Provinces, together with the correspondence noted in the margin for the final orders of the Governor General in Council.

No. 899-93, dated 4th April 1870, from Secretary to Chief Commissioner, Central Provinces.
No. 613, dated 26th April 1870, from Acting Secretary, Government of Bombay.
No. 104, dated 4th May 1870, from Secretary, Government of North-Western Provinces, Public Works Department.
No. 298 G, dated 13th May 1870, from Chairman, Board of Agency, East Indian Railway.

2. It seems to the Lieutenant-Governor quite beyond question that the ditch and mound is not an effectual obstruction to the intrusion of cattle on the line, and the real question at issue seems to be, whether the Railway Company are or are not to be required to keep up such a fence as shall prevent an effectual obstruction to the intrusion of cattle.

3. As the law* at present stands, the Lieutenant-Governor thinks there can be no doubt, reading sections 20 and 21 together, that the "good and sufficient fences" prescribed by section 20 must be taken to mean fences which will effectually prevent cattle from getting on the line by their own act merely.

* Act XVIII of 1854.

4. What the law ought to be is a question to be dealt with by the Governor General in Council primarily, and the legislature finally; but so long as the law remains in its present shape, it must, the Lieutenant-Governor believes, rest with the Magistrates to determine whether the fences actually maintained are or are not good and sufficient fences. The power given to Magistrates by the present law was clearly given in the interests of the community, and it may be doubted how far the Government could with propriety seek to restrain the action of the Magistrates in the matter so long as that action is within the obvious meaning of the law. But at present it is further clear that the Government, that is to say, the Local Governments both in the North-Western Provinces and in the Central Provinces, has no desire to restrict the action of Magistrates within the law; on the contrary, they consider that the law should be fully enforced.

5. In this state of the case, the Lieutenant-Governor thinks it is clear that if the Government of India should be of opinion that a case is made out for any relaxation of the existing law, a short enactment relating to this point specially should be passed as soon as possible.

Note by MAJOR F. S. TAYLOR, R.E., *Consulting Engineer to the Government of Bengal, Railway Department, on the subject of fencing of the East Indian Railway in the North-Western and Central Provinces, dated the* 19*th May* 1870.

THE replies of these Governments having been received, a final reference must now be made to the Government of India, as promised in my No. 654 G, dated 23rd March.

As respects Colonel Hodgson's letter No. 104, dated 4th May 1870, it should be noted that, when the control of the East Indian Railway was transferred to this Office, the main line had long been open, and I was given to understand by the Consulting Engineer in making over charge that the Government of the North-Western Provinces considered that on certain lengths (not specified in detail) the existing ditch and mound with its live-hedge was sufficient protection; that for 150 miles, where the hedge would not grow, the existing ditch and mound ought to be strengthened by two wires, and that for 50 miles of swampy ground a complete 6-wire fence

was required. The necessary indents were in due course submitted by the Agency, and were sanctioned by the Government of India in letter No. 202 G, dated 5th February 1866.

2. In 1867 (subsequent to this sanction), at the instance of the Directors, and with the approval of Her Majesty's Secretary of State, a Committee was appointed to consider whether a live-hedge was sufficient protection against cattle, and the conclusion (concurred in by the Board of Agency) was in favor of strengthening the existing ditch and mound by two wires,—a measure which the Agency were duly called upon to carry out on the main line in the North-Western Provinces, by Joint Secretary's letter No. 1334, dated 22nd July 1867.

3. The first official intimation to this Office of the wishes of the Government, North-Western Provinces, on the subject of fencing, will be found in Colonel Hodgson's letter No. 32 R, dated 5th October 1868, and refers to the Jubbulpoor line in particular. That line was opened for traffic on 1st August 1867, with little or no fencing, but the ditch and mound was reported complete in Joint Secretary's letter No. 17 G, dated 5th January 1869, in reply to the above-mentioned letter. Indents for a permanent fence of the approved pattern were submitted by the Agency in September 1867, and sanctioned by the Government of India in January 1868.

4. Colonel Hodgson's letter of 4th May 1870, now submitted, is the first intimation that I can trace of the opinion of the Government of the North-Western Provinces that the existing fence on the main line in those Provinces is deemed insufficient.

5. The first direct representation from the Chief Commissioner of the Central Provinces, on the subject of the fencing of the Jubbulpoor line, appears to be Secretary's letter No. 113, dated 9th April 1869, the reply* to which was sent to the Government of India.

* See No. 802 G, dated 17th April 1869.

A further representation was made in Secretary's letter No. 278-4246, dated 10th August 1869, and under instructions from the Government of India,* the Board of Agency were called upon in Officiating Joint Secretary's No. 2092 G, dated 23rd September 1869, to state what was being done to improve the fences both of the main line North-Western Provinces, and Jubbulpoor Branch; a distinct reply† was elicited in March last, to the effect that the Railway Company are still trying to maintain the original ditch and mound fence, and have taken no steps as yet to supplement it with wires.

* Secretary's No. 1397 R, dated 15th September 1869.

† Agency No. 137 G, dated 3rd March.

6. This reply was communicated to the Government of India and referred to the Local Governments with my letter No. 684 G, dated 23rd March 1870, for a final expression of opinion on the general question of fencing.

The Chief Commissioner in reply reiterates the opinion that the ditch and mound is insufficient, and considers that there is no security for passengers as long as the line is constantly trespassed upon by cattle. He also points out that the Great Indian Peninsula Railway have constructed an efficient wire fence on the Jubbulpoor Extension.

The Secretary to the Government of the North-Western Provinces forwards the statements of the several Commissioners, to the effect that the existing fence both on the main and Jubbulpoor lines in those Provinces is insufficient, with an expression of the opinion of the Lieutenant-Governor that the existing law which requires Railway Companies to maintain sufficient and secure fences should be insisted on.

7. To complete the case, the Board of Agency, in their letter No. 298 G, dated 13th May 1870, now request the intervention of Government against the proceedings of Magistrates until a definition of the term "good and sufficient fence" has been arrived at.

8. My own professional opinion, to which I beg distinctly to adhere, is conveyed in the concluding lines of my note of the 14th March, but I wish it to be clearly understood that I think the Railway Engineers have not bestowed sufficient attention on the maintenance of the fences, either on the main line in the North-Western Provinces, or on the Jubbulpoor Branch, and I believe that the Company would find it the most economical course to put up wire fencing at once on many parts of the line.

In this view, I submit, the action of Magistrates may safely be confined to enforcing the proper maintenance of the existing fence, and the onus will lie on the Railway Companies to add the wire gradually in all places where the soil is unsuitable to the ditch and mound.

From C. GRANT, ESQ., Secretary to the Chief Commissioner, Central Provinces, to the Joint Secretary to the Government of Bengal, Public Works Department, Railway Branch,—No. 899—93, dated Nagpore, the 4th April 1870.

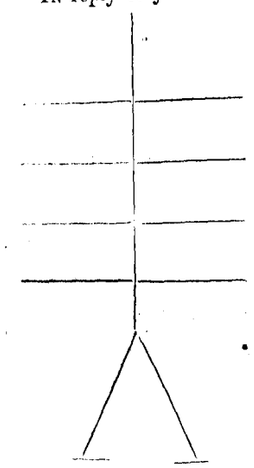
I AM directed to acknowledge the receipt of your letter No. 682 G, dated 23rd March 1870, and in reply to convey to you the Chief Commissioner's opinion on the question at issue as follows.

2. Mr. Morris cannot admit that any good case has been made out by the Railway Company for dispensing with some effectual means of guarding the line, whether by rails, fences, or walls. It seems clear as well from the experience of other jurisdictions as from that of the Central Provinces officials, and, indeed, of the Chief Commissioner himself, that the earthen walls now provided are no adequate protection whatever against the intrusion of cattle; and, even if accidents hitherto have been few in number, it cannot be contended that there is any security, especially in night travelling, on a line on which the trains are bound to run at a high speed, and which is constantly trespassed upon by cattle. This is altogether putting out of the question the annoyance to the people themselves, which cannot be dismissed as unworthy of consideration. Mr. Morris does not think that they are so successful as the Board of Directors* supposes in keeping their cattle off their neighbour's crops, but the result of a trespass of the latter kind would be at worst nothing more than a petty fine, while trespass on the line, as has been seen, often involves entire loss of the cattle. As regards the nature of the country through which the Jubbulpoor line passes, the Chief Commissioner observes that the Great Indian Peninsula Railway traverses tracts of far wilder character and greater extent, and yet the Company has not felt itself justified on this account in neglecting the proper safeguards of a line on which trains travel at a high speed and at night.

* No. 102 of 1869.

From LIEUTENANT-COLONEL F. S. TREVOR, Acting Secretary to the Government of Bombay, Railway Department, to the Joint Secretary to the Government of Bengal, Public Works Department, Railway Branch,—No. 613, dated 26th April 1870.

IN reply to your No. 870 G, dated 19th April 1870, I have the honor to inform you that, on the Jubbulpoor Extension of the Great Indian Peninsula Railway, the fencing consists of four-wire strands supported by iron standards or by wooden posts; a live-fence is also being planted throughout the entire length of the line, which, in a few years, will of itself prove a perfect obstacle to cattle. I may add that the wire-fence above alluded is found to be very efficient in keeping out cattle, and that its cost is about Rs. 1-13 per yard.



Endorsed by the Bengal Public Works Department, Railway Branch,—No. 959 G, dated 2nd May 1870.

COPY of the above forwarded to the Chairman, Board of Agency, East Indian Railway, for information.

From COLONEL C. J. HODGSON, R.E., Secretary to the Government of the North-Western Provinces, Public Works Department, to the Joint Secretary to the Government of Bengal, Public Works Department, Railway Branch,—No. 104, dated 4th May 1870.

I AM directed to acknowledge the receipt of your letter No. 681 G, dated the 23rd March last, regarding the fencing of the Railway line in the North-Western Provinces, and to forward, for your information, a copy of the printed Proceedings of this Government, Nos. 1 to 9, for January 1870, containing the opinions of the several Commissioners of the North-Western Provinces on the subject; also report as in margin, from the Magistrate of Banda of a recent accident on the Jubbulpoor Railway.

No. 450, dated 16th April 1870.

2. I am to state that it is not gathered from your communication what course is advocated by the Bengal Government and yourself; but in the opinion of this Government, the provisions of the law, as it at present stands, which requires Railway Companies to maintain sufficient and secure fences, should be insisted on.

3. Cattle seem to find little difficulty in making paths across the ditch and mound fence, even where this can be maintained to its proper section. A quickset hedge can, it

appears, be made an effective fence; dry stone walling is reported to be so, but where neither of these can be resorted to, an addition of wires to the ditch and mound seems the best contrivance.

4. The accident reported by the Magistrate of Banda shows that the ditch and mound were leaped by terrified cattle, and that the cow-fender attached to the locomotive did not serve to prevent a part of the train being thrown off the rails, and I am to express a hope, therefore, that there may be no further delay in affording the security of proper fences.

From E. B. THORNHILL, ESQ., Officiating Magistrate of Banda, to the Deputy Consulting Engineer to the Government of the North-Western Provinces, Railway Department,—No. 450, dated 16th April 1870.

IN reply to your docket No. 83, dated the 4th instant, I have the honor to forward a copy of a report from Mr. Spedding, the Joint Magistrate of Kerwie, No. 119, dated the 13th instant, from which you will see that the cattle run over, and the running over which caused the accident to the mail train on the Jubbulpoor line on the 3rd instant, were probably pack-bullocks which had broken loose in consequence of fright during the hail storm which raged on the evening of the 2nd instant.

Frightened cattle would cross a fence that cattle grazing would not cross.

I am quite of Mr. Spedding's opinion that a mere earthen bank is not sufficient protection against the trespasses of the active jungle cattle of Bundlekhund (for the pack-bullocks are turned out in the jungle during part of the year). The fact of the fence being crossed without a way being purposely made through it, affords ample proof that the fence is not sufficient.

I am therefore consulting the Commissioner on the subject, and should he think that the matter is not beyond my competence at present, in consequence of the previous reference to Government regarding the fence, I shall serve a notice on the Railway Company, through the District Engineer, under section 20 of Act XVIII. requiring the Company to erect a proper fence against cattle within a reasonable time, to be specified in the notice.

Memorandum from C. STEPHENSON, ESQ., Chairman, Board of Agency, East Indian Railway, to the Consulting Engineer to the Government of Bengal, Railway Department,—No. 298 G, dated 13th May 1870.

THE undersigned has the honor to forward herewith copy of letter* No. 1040 of 10th instant, from the Chief Engineer, pointing out the great inconvenience that would arise if Magistrates were allowed to lay down the law as to what should be considered a good and sufficient fence, and to request the interference of Government in the matter.

* An annexure.

From G. SIBLEY, ESQ., Chief Engineer, to the Chairman, Board of Agency, East Indian Railway,—No. 1040, dated 10th May 1870.

WITH this I send copy of Mr. Spencer's No. 335 C of 6th instant, giving cover to an order issued by the Magistrate of Kerwie to District Engineer of Jubbulpoor line between 36th and 85th mile, directing him under certain pains and penalties to substitute some particular kind of fence for that now existing, and defining, for the purpose of that order, what a good and sufficient fence shall be held to be.

I would suggest that all orders of this kind shall be sent through the Consulting Engineer who is supposed to be the adviser of Government in such matters, and could, from his personal knowledge derived from inspections and returns which are submitted to him, prevent the issue of absurd or inconsistent orders.

I think that it will lead to great inconvenience if each Magistrate and Justice of the Peace is allowed to lay down the law as to what shall be considered a good and sufficient fence in his own District.

In the present case, the Magistrate states that the existing fencing has been found insufficient to protect the said railway from the trespass of cattle; he does not state how it has been so found, and the only apparent possible ground for such a conclusion is the fact that cattle have been run over.

But that that fact is not conclusive evidence of the insufficiency of such a fence, is shown by the fact that, in the Bengal Division (577 miles), which has, what the Magistrate's orders shall be held to be, a good and sufficient fence, there have been 15 cases of running over cattle,

while in the same period there have been in the North-Western Provinces (557 miles) 16 cases, of which two were wild boars, and on the Jubbulpoor line (223 miles) there were five cases.

From C. J. SPENCER, ESQ., District Engineer, Jubbulpoor Line, to the Chief Engineer, East Indian Railway,—No. 335 C, dated the 6th May 1870.

I BEG to forward herewith copy of order received this morning from the Magistrate of Kerwie with reference to railway fence in Banda District.

I shall be glad of your orders on the subject.

Order issued to the East Indian Railway Company, under the provisions of section 20, Act XVIII. of 1854, by R. SPEDDING, ESQ., Magistrate and Justice of the Peace, Kerwie,—dated the 29th April 1870.

WHEREAS the earthen fence at present constructed on each side of such portions of the Jubbulpoor Extension, East Indian Railway, as lie between the 36th and 85th mile has been found insufficient to protect the said Railway from the trespass of cattle, the East Indian Railway Company are hereby required to erect a good and sufficient fence in place of the said earthen fence within three calendar months from the date of receipt of the present order, and failing therein the said Company will be liable to a fine of Rs. 25 for every day after the expiration of such period.

This order does not apply to such portions of the railway as are already fenced by a stone wall.

A "good and sufficient fence" under the terms of the present order shall be held to be—

(1) a stone fence similar to that already constructed on certain portions of the said railway; or

(2) a five-wired fence similar to that on the Delhi Railway in place of the present earthen fence; or

(3) a wire-fencing of not less than two strands to be securely fixed on the summit of the present earthen fence as an addition to the said fence.

This order shall be served on the District Engineer within whose length the portions of the railway above defined lie, and such officer, in regard to compliance or non-compliance with the said order, shall be considered as the representative of the East Indian Railway Company.

From MAJOR F. S. TAYLOR, R.E., Joint Secretary to the Government of Bengal, Public Works Department, Railway Branch, to the Secretary to the Government of India, Public Works Department,—No. 1110 G, dated Fort William, the 26th May 1870.

IN continuation of this Office letter No. 1104 G, dated 25th instant, I am directed to forward, for the orders of the Government of India, a copy of the letter noted on the margin, from the Secretary to the Government, North-Western Provinces, in the Public Works Department, on the subject of the fencing of the East Indian Railway in the North-Western Provinces.

No. 148 G—R, dated 18th May 1870, from Government, North-Western Provinces, Public Works Department.

From COLONEL C. J. HODGSON, R.E., Secretary to the Government of the North-Western Provinces, Public Works Department, to the Joint Secretary to the Government of Bengal, Public Works Department, Railway Branch,—No. 148 G—R, dated the 18th May 1870.

IN continuation of my letter of the 4th instant, No. 104 G—R, I am directed to forward copy of memorandum by the Deputy Consulting Engineer to this Government on the fencing of Jubbulpoor line, as well as copy of papers noted in the margin on the same subject, and I am to remark that His Honor the Lieutenant-Governor, North-Western Provinces, considers that the ditch and mound can only prove efficient when the slope is steep and angles sharp; and these features (unless perhaps in exceptionally stiff soil) are lost in the course of time, and in soft, loose and sandy soil are hardly present even at the first.

No. 96 of 4th May 1870, from Commissioner, Allahabad Division, with enclosures.

2. His Honor has no doubt that the proper remedy is the wire-fence proposed by Major Bonus, and until it is put up, no prosecution for trespass is likely to hold. If this state of things after due warning is continued, it will be necessary to prosecute the Railway Company for neglect of its legal obligations.

Memorandum by MAJOR J. BONUS, R.E., Deputy Consulting Engineer to Government, North-Western Provinces, Public Works Department, Railway Branch.

HAVING recently passed over this line and inspected the fences, I have the honor to offer the following remarks on the subject:—

The fencing consists chiefly of a ditch and bank in section thus, but in the hilly districts a dry stone wall has been put up.



The dry stone wall forms, I think, an efficient fence. I have seen it used in other lines, and it has always stood well where there is no danger of rapid floods; there is no fear of such floods where the walling is used in the Jubbulpoor line. In some places, the wall is crowned with earth with the view, of course, of keeping the top stones from falling off. I think this is a mistake, the earth permits of the growth of reed and small plants which work their roots down into the wall, and as they increase in size, force the stones outwards till they fall. I do not think it necessary to cope this walling at all, but if it is done, it should be done with ordinary mortar.

But the chief fencing of the Jubbulpoor line is the ditch and bank which I consider a most unsuitable fence. When first made in stiff soil, it is doubtless a sufficient protection, but it contains the elements of its own destruction. The bank is soon overgrown with grasses and plants; rain falls and washes the material from the bank back into the ditch, and in a very short time the section is reduced to one which offers scarcely any impediment to the active half-wild cattle which graze in the vicinity of the line.

In order to keep such a fence in anything like an efficient state, parties of laborers must be constantly employed in clearing the ditch and scarping the bank, and the expense of maintenance must be of necessity very great indeed.

I noticed at several points along the line that men were thus engaged, but the greater part—for the greater part—of the ditch and bank fence was covered with a luxurious growth of grass tempting the cattle to cross the ditch and offering really but a trifling obstacle.

The best thing that can be done is to crown the bank with a wire-fence with iron standard. Wooden posts should not be allowed; they decay, get eaten by white ants, or destroyed by fire, when the grass around is ignited by sparks from the engines the fence soon assumes a wretched appearance, and the expense of new posts has to be incurred. Iron standards should be used then, and these should be of sufficient height to take at least four wires, in the first instance a couple of wires would be sufficient I think, but as the ditch gradually fills up, it will probably be found necessary to add a third and then a fourth wire. This wire fence is an excellent one, I have seen it in use in grazing countries for years, and I have never known it fail. The expense of maintenance is very trifling.

It is not impossible that the Railway Company will object to the first expense of the wire fence. In the end, however, they will benefit, the maintenance being so much less costly than that of the bank and ditch. The fact is that the bank and ditch is not maintained as it ought to be, if it is to be preserved in a state at all approaching efficiency. I think, therefore, with a view of enforcing proper maintenance that the Civil Officers should be instructed to levy fines upon the Company in every instance in which they consider that the due maintenance of the fence is neglected.

From F. O. MAYNE, ESQ., C. B., Commissioner of 4th or Allahabad Division, to the Officiating Secretary to the Government of the North-Western Provinces,—No. 96, dated 4th May 1870.

IN continuation of this Office No. 88, dated 25th April, I have the honor to submit a copy of Mr. Spedding's report No. 1518 B, dated 29th September last, on the subject of railway fences on the Jubbulpoor line, East Indian Railway.

2. No reply has ever been received from the Consulting Engineer. The subject is an important one, and I would suggest that the Bengal Government be addressed regarding it.

3. The case of cattle trespassing is somewhat different in these hill tracts to what it is with ordinary village herds. The graziers ordinarily are able to keep cattle out of fields, and to prevent trespass; but in the jungles in the southern tracts of Tirohan large herds are sent to graze, and the herdsmen have little control over these wild animals. The section of the ditch and fence given in the Resident Engineer's letter to Mr. Spedding is manifestly insufficient to prevent animals coming on to the line, a loose stone rubble wall would be far better.

From the Government of India, Public Works Department, to the Joint Secretary to the Government of Bengal in the Public Works Department, Railway Branch,—No. 1185 R, dated Simla, the 5th July 1870.

I AM directed to acknowledge the receipt of your letters No. 1104 G and No. 1110 G, dated the 25th and 26th May 1870, respectively, with copies of a Note by the Consulting Engineer, and of correspondence with the Government of the North-Western Provinces and the Chief Commissioner of the Central Provinces, on the subject of the fencing of the East Indian Railway, and in reply to state that, after full consideration of these papers, the Governor General in Council is of opinion that, so far as this important trunk line of Railway is concerned, the requirements of the existing law should be complied with without further discussion, and the Railway Company should be at once called upon to provide an efficient fence without delay. The definition of what constitutes an efficient fence may, in each case, be left to be settled by the Local Governments concerned. So long as the safety of the travelling public and the proper protection of the agriculturists and their cattle is sufficiently considered, no interference on the part of the Government of India will be called for. It having been decided by the Local Government what constitutes an efficient fence, it must be left to them and their magisterial officers to take such steps, under the law, as may seem called for, to ensure its provision within a reasonable period.

2. The Government of India are not satisfied, however, that, as a rule, proper care has been taken to ensure the success of a live-fence, and they consider that a ditch with mound surmounted by a couple of wires would form as efficient a fence as the ordinary wire-fence of four strands.

Nos. 1186-7 R.

COPY forwarded, for information and guidance, to the Government of the North-Western Provinces, and to the Chief Commissioner of the Central Provinces.

EXTENSION OF RAILWAYS IN HYDERABAD AND CENTRAL INDIA.

Resolution by the Government of India, Public Works Department,—Nos. 1259-61 R., dated Simla, the 15th July 1870.

READ again—

From the Government of India, to the Secretary of State for India,—No. 40, dated Fort William, the 29th March 1870.

We are greatly gratified to be able to inform your Grace that certain negotiations which have been in progress for some months past, relating to the extension of railways in two important Native States, have recently been brought to conclusions which appear to us in every respect highly satisfactory.

2. The first of these cases is that of the line from the Great Indian Peninsula Railway to Hyderabad.

3. In the earlier discussions regarding this Railway, it had been intimated that the British Government would expect the Nizam's Government to bear at least one-half of the cost of construction. When, during last year, we received the authority of Her Majesty's Government to carry out this line as a State work, we again invited the Nizam's Government to consider the terms on which the needful funds could be supplied, and we have now the honor to inform your Grace of the conclusion that has been come to.

4. His Highness Sir Salar Jung proposes that the Nizam's Government shall provide the whole of the capital required, partly from the means of the Hyderabad State, partly by aid of subscriptions of local capitalists. It may amount to about one million sterling. The Railway will be considered to be the property of the Hyderabad State, and the profits of the working will go entirely to that State. But the construction, management and working of the Railway will be carried on exclusively by the British Government under the general supervision of the Resident at Hyderabad, acting in communication with the Nizam's Government.

5. Thus the construction of this important line will be provided for without placing any charge or liability on the British Government or the revenues of India,

a result which we do not doubt your Grace will agree with us in regarding as highly satisfactory.

6. The surveys for this line of railway, as your Grace has already been informed, are in progress, and the commencement of work may be expected in the course of the present year.

7. The other case refers to His Highness the Maharaja Holkar, who has intimated to the Governor General's Agent in Central India that he is desirous of placing at the disposal of the British Government a sum of one million sterling as a contribution for the construction of a railway to unite the Great Indian Peninsula Railway with Indore.

8. The terms which the Maharaja has proposed are, that he shall receive from the British Government 4½ per cent. interest on the capital thus to be contributed by him, and shall share in half the surplus net profits in excess of that amount. We have readily assented to this, which practically places His Highness in the position of a holder of guaranteed capital under terms financially the same as those granted to the existing Guaranteed Companies.

9. The Maharaja proposes to contribute the million as follows :—

	£
In 1870-71	250,000
„ 1871-72	200,000
„ 1872-73	110,000
„ 1873-74	110,000
„ 1874-75	110,000
„ 1875-76	110,000
„ 1876-77	110,000
Total ...	1,000,000

10. The yearly sums are to be paid in quarterly instalments. The capital is left at the disposal of the British Government in perpetuity.

11. The necessary measures will at once be taken by us for commencing the survey of the line of railway in question. The country is difficult, and part of it extremely unhealthy for several months of the year; but we hope to be able to make arrangements under which some part of the line at least may be fixed in time to admit of the commencement of actual operations after the close of the ensuing rainy season.

12. We are at present unable to say what the railway to Indore is likely to cost, but it is not improbable that the outlay will exceed the sum to be given by the Maharaja. The intrinsic importance of the line, however, is so great, and the political advantage to be secured by the arrangement proposed so manifest, that we have not hesitated to give our assent to the Maharaja's terms, and to undertake to proceed at once with the construction of the line, accepting the liability of finding the sum, whatever it may be, necessary for completing the junction between Indore and the Great Indian Peninsula Railway. It will be our chief aim to take every precaution for keeping down the cost of first construction, so as to ensure, as far as possible, the early financial success of the undertaking.

13. We may, we think, properly congratulate your Grace on these events. Two Native Governments have, of their own accord and without solicitation on our part, offered to subscribe £2,000,000 of capital for railway construction in their own territories. It is satisfactory to us to note that in the first year, after the Government had announced its intention of carrying out further extensions of railways in India by its own agency, two Native States should have subscribed such a sum, on terms so favorable as those that we have described, for the construction of lines of railway which, while they will benefit considerably their own States, may also be regarded of primary importance to India as a whole. We cannot but trust that the example set by the Maharaja of Indore and Sir

Salar Jung will be followed by other enlightened rulers, and that we may for the future hope for the more active coöperation of the Native Chiefs and Princes of India in all works of industrial enterprize.

14. We shall take care to keep your Grace informed of our further proceedings in these matters, and of the formal conclusion of the arrangements, an outline of which we have now had the honor to report.

Read also—

From the Secretary of State for India, to the Government of India,—No. 39, dated India Office, London, the 9th June 1870.

I have learnt, with much gratification, from your despatch No. 40 of 29th March last, to how great an extent their Highnesses Sir Salar Jung, on the part of the Nizam, and the Maharaja Holkar, have agreed to coöperate with your Government in the construction of railways through their respective territories.

2. The arrangement made by Sir Salar Jung, on behalf of the Hyderabad State, is especially satisfactory. That the Government of the Nizam should voluntarily take upon itself the entire cost and risk of a railway to connect the capital of Hyderabad with the Great Indian Peninsula line, and should at the same time, propose to entrust the construction and subsequent management of the work to the British authorities, exhibits at once very enlightened liberality on His Highness's part, and affords a very gratifying proof of the confidence which he has learnt to repose in the British Government. The most appropriate return that can be made to His Highness will be the construction of the railway within the shortest time and in the most efficient manner possible, and every exertion will, no doubt, be made for the purpose.

3. The undertaking of the Maharaja Holkar to place a million sterling at the disposal of your Government, in aid of the expense of a railway to unite the Great Indian Peninsula line with Indore, is also entitled to cordial recognition. The terms on which he has arranged to make this contribution, *viz.*, the annual payment to him of 4½ per cent. on its amount, and of one moiety of any surplus profits realized, although, as you say, practically placing His Highness in the position of a holder of guaranteed stock, constitute at the same time an example of a form of guarantee free from some of the worst defects of the system. It will be of no small advantage to your Government to have under its own exclusive control funds obtained on guarantee.

4. I heartily concur with your Excellency in regarding it as a matter for congratulation that two Native Governments should, of their own accord and without solicitation, have already exhibited so decided an interest in railway extension, and I concur similarly in accepting the example set by them as an earnest of active coöperation in future on the part of the Native Princes of India generally, in all works of industrial enterprise.

ORDER.—Ordered, that these despatches be communicated for information to the Foreign Department, the Resident at Hyderabad, and the Agent to the Governor General for Central India.

GOVERNMENT OF INDIA.

LEGISLATIVE DEPARTMENT.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Tuesday, the 19th July 1870.

PRESENT:

His Excellency the VICEROY and GOVERNOR GENERAL of India, K.P., G.C.S.I., *Presiding*.
His Excellency the COMMANDER-IN-CHIEF, G.C.B., G.C.S.I.
The Hon'ble JOHN STRACHEY.
The Hon'ble SIR RICHARD TEMPLE, K.C.S.I.
The Hon'ble J. FITZJAMES STEPHEN, Q.C.
The Hon'ble B. H. ELLIS.
Major-General the Hon'ble H. W. NORMAN, C.B.
The Hon'ble F. R. COCKERELL.

COINAGE AND MINT BILL.

The Hon'ble MR. STEPHEN introduced the Bill to consolidate and amend the law relating to Coinage and the Mint, and moved that it be referred to a Select Committee with instructions to report in a month. He said that one object of the Bill was to consolidate the five Regulations and Acts relating to coinage and the mint. No alteration had been made in the substance of the existing law, with the exception of the introduction of a section by which power was given to public servants to deface light-weight, counterfeit and called-in coin. His hon'ble friend, Sir R. Temple, would, Mr. STEPHEN hoped, consent to serve on the Select Committee, and would thus have an opportunity, if he thought fit, of suggesting any alterations which might be desirable from a financial point of view.

The Motion was put and agreed to.

LOCAL ACTS CONFIRMATION BILL.

The Hon'ble MR. STEPHEN also moved for leave to introduce a Bill to confirm certain laws affecting European British subjects. He said that in introducing the Bill he would trespass on the time of the Council for a few moments, as the subject was one of very general importance and interest.

The Council would be aware that the High Court at Bombay had lately held that the local Legislature of Bombay had no power to pass Acts by which European British subjects were subjected to criminal punishment. A European British subject had committed some trifling offence against a local law for which he was fined one rupee. The High Court held that the local Legislature was not competent to pass an Act inflicting such a penalty; that the conviction must be quashed and the fine repaid. The steps by which they arrived at this conclusion were these: The Indian Councils' Act which created the local Legislatures, restrained them from affecting the jurisdiction of the High Court. The High Courts had exclusive jurisdiction in criminal matters over Europeans. Therefore, every Act of the local Legislatures which inflicted criminal punishments on Europeans affected the jurisdictions of the High Courts, and was illegal. Upon each of these

points the High Court entered upon an elaborate examination of all relevant authorities and principles, and they arrived at length at the conclusion above stated. MR. STEPHEN thought that they had a perfect right to do so, and he and the Government generally wished to treat their decision with the utmost respect. He, however, could not help saying that the subject was one on which other Courts might arrive at a different conclusion. He had seen careful and elaborate opinions by two of the most eminent lawyers in India, the effect of which was that the Local Governments had the right to pass Acts of the class in question, inasmuch as they did not affect the jurisdiction of the High Courts, but merely conferred concurrent jurisdiction upon the local Courts, and that there was no ground for the opinion that the jurisdiction of the High Courts was exclusive.

MR. STEPHEN's own opinion was that the point of law was one on which difference of opinion might naturally prevail, inasmuch as it had in all probability escaped the attention of Parliament when the Indian Councils' Act was before them. The matter might probably come before the High Courts at Calcutta and Madras, and if they should take a different view from the High Court of Bombay, the result would be unseemly and highly inconvenient. If, on the other hand, the other High Courts were to concur with the High Court of Bombay, the result would be calamitous, as (amongst others) the Police Acts, the Municipal Acts, and the Gaol Acts, would become a dead letter as regards Europeans. He (MR. STEPHEN) could not regard such a consequence without dismay. Considering that Calcutta and Bombay had each a large sea-faring European population, amongst whom order was preserved principally by the operation of the Police Acts, the consequence of repealing those Acts would be nothing less than disastrous.

Under these circumstances MR. STEPHEN thought it was the clear duty of the Government to interfere. They could not increase the powers conferred by Parliament on the local Legislatures. They could, however, confirm their Acts retrospectively, and give them the same validity as they would have had if they had been passed by the Governor General in Council.

As the Government had no intention of interfering with the privileges of European British subjects, care would be taken to draw the Bill in such a manner as not to subject them to any judicial officer who would not otherwise have jurisdiction over them. Its effect would be to make them punishable for the same offences for which Natives would be punishable under local Acts, but only by the Justices of the Peace who would have jurisdiction over them in respect of offences against the general criminal law.

The Bill would of course contain a clause indemnifying Magistrates who had acted under the Acts intended to be confirmed.

The Motion was put and agreed to.

BENGAL REGULATIONS REPEAL BILL.

The Hon'ble MR. COCKERELL moved for leave to introduce a Bill to repeal certain obsolete Regulations of the Bengal Code. He said that the proposed measure was another step towards the execution of the scheme recently laid before the Council by his hon'ble and learned friend MR. STEPHEN for the consolidation of the existing law. There was certainly no part of the Indian Statutes to which the consolidating process could be more advantageously applied than the Regulations of the Bengal Code. Though not embracing any great variety of subjects—for, excluding revenue matters and punishments for heinous offences, the Regulations could not be said to contain much substantive law,—yet their numerical strength and bulk were excessive. It had been frequently asserted that there was at the present time a tendency to over-legislation. If this could be said with any reason in regard to our modern legislation, what must be said of the legislation of the Regulation era? That period extended—at least as regards extant Regulations—from 1793 to 1833. In 1834 there were on the Statute-book 561 Regulations, excluding those which had been rescinded previous to that time, and

also the Regulations of the Madras and Bombay Codes. If we contrasted those figures with the nett result of the legislation which had taken place from that year up to the present time, a period almost corresponding in length with that in which the Regulations were enacted, we should find that, notwithstanding the vast extent of territory which had been added to the British dominions in India since the period just referred to, and the obviously increased requirements of a more advanced state of civilization, the total number of the unrepealed Acts of the Governor General in Council enacted from 1834 up to the present time, was considerably less than the number of Regulations which were in force in 1834.

It was true that in this comparison he (MR. COCKERELL) had not taken into account the enactments of the different local Legislatures, but, on the other hand, he had excluded the Regulations of the Madras and Bombay Codes. He had simply contrasted the nett result of the legislation of the Governor General in Council for all India during the last thirty-six years, with that of the legislation during the previous forty years for the Bengal Presidency only.

Since 1834 considerable progress had been made in reducing the number of the Bengal Regulations. For a large portion of them, the three great Codes,—the Civil Procedure Code, the Indian Penal Code, and the Criminal Procedure Code,—had been substituted. A still larger number had been extinguished as obsolete, or practically useless, by the repealing Act (No. VIII of 1868), and many others had been absorbed in such consolidating enactments as the Rent Law, the Consolidated Customs' Act, the Abkárí Act, the Registration Act, the Stamp Acts, &c. With all these reductions, however, the aggregate of unrepealed Bengal Regulations was still no less than 224—a number equal to, in fact exactly corresponding with, the number of the extant *general* Acts of the Governor General in Council. Of this number, about 62 might eventually be extinguished or absorbed on the passage through this Council of three Bills now before it, namely, the Bill for declaring the local extent of the general Regulations and Acts, the Jails' Bill, and the Coinage Bill. There would still remain 162 Regulations; and the object of the Bill, which he now asked leave to introduce, was to remove by express repeal so much of these enactments as had become obsolete or was unfit for retention as no longer necessary to meet the requirements of the present time, and thus to clear the way for condensing and reducing into the smallest practicable compass as much of the residue of these Regulations as was capable of being re-abridged by consolidation.

This project did not commend itself to approval solely on the ground of the advantage to be derived from the reduction of the *number* of the existing operative Regulations. Much as there was to admire in many of these Regulations as regards their comprehensive and perspicuous style and the benevolent intentions expressed on the preambles, which generally contained a sort of Statement of Objects and Reasons by which their framers were actuated, it must, he (MR. COCKERELL) thought, be admitted that the terseness of expression and scientific arrangement of matter which marked modern drafting were more suited to the practical age in which we lived than the diffuse language and unconnected sequences in which the substance of the Regulations was expressed and arranged. The Bill would provide for the absolute repeal of 43 Regulations, besides the partial repeal of 95 others. The number of Regulations or parts of Regulations thus left might be about 119, which would be classed as follows:—

Relating to	Land Revenue	57
Ditto	Civil Judicature	12
Ditto	Constitution and Jurisdiction of Courts	6
Ditto	Police, including police functions and responsibilities of landholders	9
Ditto	Pensions	7
Ditto	Personal obligations of the Members of the Covenanted Civil Service	4
Ditto	Native officers	4
Ditto	Rájá of Benares	3
Ditto	Nawáb Názim	3
Ditto	Miscellaneous Revenue and Customs	3

and eleven others relating to different subjects which it was perhaps unnecessary to detail here.

It would be seen that the majority of these Regulations related to land revenue. There was, he (MR. COCKERELL) believed, at the present time, a scheme under preparation in England for the consolidation of the entire revenue law of the North-Western Provinces. This work, which presumably included all the matters contained in the Regulations just referred to, would probably at no distant date become the subject of legislation by this Council. This projected Revenue Code was intended for application to the North-Western Provinces only, whereas many of these Revenue Regulations were in operation in both divisions of the Bengal Presidency. But if the Code was adopted by this Council, and superseded the existing revenue Regulations in the North-Western Provinces, the local Legislature of Bengal proper might be expected to undertake a similar consolidation of the revenue law applicable to those Provinces, and in this way the entire body of Regulations relating to revenue might be eventually extinguished.

The twelve Regulations relating to civil judicature could be conveniently absorbed in the amendment of the Civil Procedure Code whenever we were in a position to proceed with that long-projected measure. As regards the Regulations relating to (1) the Constitution and Jurisdiction of the Courts, (2) Police, (3) Pensions, (4) the personal obligations of Members of the Covenanted Civil Service, (5) Ministerial and other Native officers, he (MR. COCKERELL) hoped, as soon as the present Bill was sufficiently matured to clear the way for further action, to bring forward consolidating enactments on each of these subjects.

If these measures should be eventually adopted by the Council, the Bengal Regulations would be reduced thereby to the narrowest possible limits; and MR. COCKERELL ventured to say that a most useful work, both as regards the convenience of the public and the lessening of the labours of those who had to administer the law, would have been achieved.

The Hon'ble MR. STEPHEN said that the Hon'ble Mr. Cockerell deserved the acknowledgments of the Council for the very great pains which he had taken and for the special knowledge which he had brought to bear on the preparation of his scheme. If the Bill now proposed were passed, the Regulations of Bengal would be brought to the desirable condition to which those of Madras had for some time been reduced, all the dead wood, so to speak, having been cut away. As the present number of Regulations would never be increased, one difficulty in the way of their consolidation would be absent. He hoped that the Government would soon be able to publish all the extant Bengal Regulations in one compact and well-arranged volume.

The Motion was put and agreed to.

HINDU WILLS' BILL.

The Hon'ble MR. STEPHEN moved that the further report of the Select Committee on the Hindú Wills' Bill be taken into consideration. He said that, with regard to the provisions of the Bill, he had nothing to add to what he had said at their last meeting in Calcutta. It had been thought desirable to let the Bill stand over in order to give the Government of Bengal and all persons interested in the measure ample opportunity of expressing their views thereon. No communications on the subject had reached the Legislative Department since the 22nd of March last: the Council had waited quite long enough; and it would be wrong to postpone the passage of the Bill.

The Motion was put and agreed to.

The Hon'ble MR. STEPHEN also moved that in section two, line 16, and in section three, last line, for 'May' the word 'September' be substituted.

The Motion was put and agreed to.

The Hon'ble MR. COCKERELL moved that in section two, line 13, after 'shall,' the following words be inserted:—

'notwithstanding anything contained in section three hundred and thirty-one of the said Act;'

He said that this amendment was rendered desirable by the provision of section three hundred and thirty-one of the Succession Act, which barred the application of the Act to the very persons to whom this Bill was intended to apply.

The Hon'ble MR. COCKERELL also moved that after section three the following section be inserted:—

'4. On and from that day, section two of Bengal Regulation V of 1799 shall be repealed so far as relates to the executors of persons who are not Muhammadans, but are subject to the jurisdiction of a District Court in the territories subject to the Lieutenant-Governor of Bengal;'

and that the numbers of the subsequent sections be altered.

He said that the portion of the Bengal Regulation (V of 1799) which it was proposed to repeal, prohibited any interference on the part of the Civil Court with an Executor acting under a will. This provision would appear to extend to the grant of probates which would be thereby stopped. It might be said that the application of the Succession Act superseded the provision of the Regulation referred to; but the second section of the Succession Act restricted its operation to cases to which no other law for the time being in force was applicable. The proposed repeal was therefore desirable to avoid any difficulty to which this conflict of the provisions of the two enactments might give rise.

The Hon'ble MR. STEPHEN expressed his approval of Mr. Cockerell's Motions, which were then put and agreed to.

The Hon'ble MR. STEPHEN then moved that the Bill as amended be passed.

The Hon'ble MR. COCKERELL said, that as his official duties had been chiefly in connection with the Lower Provinces of Bengal, to which this Bill was intended to apply, he wished to take this opportunity of expressing his great satisfaction in the course taken by his hon'ble and learned friend, the mover of the Bill, in regard to its passage through this Council. Under the strong conviction that, as the practice of disposing of property by will was greatly on the increase amongst the Hindús of Lower Bengal, the restraints imposed by the Indian Succession Act were not only applicable to those territories, but that their application was urgently needed there, he (MR. COCKERELL) advocated in Committee the extension of the Bill to its present dimensions; and when, in April last, the passage of the Bill seemed likely to be indefinitely postponed on account of the strong objections raised on the subject of perpetuities, it was on the sole ground of expediency, to prevent delay in the application of the general provisions of the Bill for regulating the wills of Hindú testators, that he moved an amendment for the temporary exclusion of the clause containing the rule against perpetuities. He was now very glad that the amendment, which he should certainly not have moved could he have anticipated so early a solution of the question, had not been agreed to. He would not, however, take up the time of the Council by saying any more on the subject of that amendment—a subject which had been so ably and exhaustively dwelt upon by his hon'ble and learned friend Mr. Stephen on a former occasion. It was quite clear, as had been said by his learned friend, that we had waited long enough for any further representation on the part of the Local Government, or any refutation by the opponents of the measure of the arguments which had been set forth in support of the clause above referred to. He considered not only that we were fully justified in proceeding to pass the Bill, but that its early coming into operation was on every account most desirable; and he was confident

that the results of its working would be such as to justify the extension of its provisions to Madras and other parts of the Empire.

The Hon'ble MR. STRACHEY said that he did not intend to occupy the time of the Council with any remarks upon the general question regarding which there had been, on former occasions, so much discussion. The admirable speeches of his Hon'ble friend, Mr. Stephen, had really left nothing to be said, and he was sure that every member of this Council, and every reasonable man outside its walls, would agree in thanking Mr. Stephen for the service which those speeches had done to the cause of truth and progress in this country. Those speeches had made it impossible that there should be any difference of opinion in this Council, and had rendered it certain that the Legislature would not hesitate to refuse to take the retrograde step which had been urged upon it by a certain section of the community more distinguished for volubility than for wisdom.

There was only one point which MR. STRACHEY wished to notice, because he thought that it possessed some interest and importance, and it had not been referred to in the discussions which had taken place. The Council would remember the series of Executive and Legislative measures adopted, during the last two years, of Lord Lawrence's Viceroyalty, with the object of settling the many vexed questions which had given rise to trouble and anxiety in Oudh. The last of those measures which, notwithstanding the part which he (MR. STRACHEY) had taken in originating them might, he hoped he might say, now be pronounced to have been successful,—the last of those measures was that which became law as Act I of 1869. It was intended to define the rights of the taluqdárs of Oudh in their estates, and to regulate their powers of bequest, gift and transfer. It was passed by the Legislature after the full and unreserved approval of the taluqdárs to all its provisions had been communicated to the Government by themselves. MR. STRACHEY would ask the Council to allow him to read the twelfth section of that Act.

> "12. No transfer or bequest under this Act shall be valid whereby the vesting of the thing transferred or bequeathed may be delayed beyond the life-time of one or more persons living at the decease of the transferee or testator, and the minority of some person who shall be in existence at the expiration of that period, and to whom, if he attains full age, the thing transferred or bequeathed is to belong."

Now this section was identical with the rule against perpetuities contained in section one hundred and one of the Indian Succession Act, regarding the introduction of which into the present Bill there had been so much discussion.

The high-spirited nobles of Oudh had showed, on many occasions, how well and intelligently they were able to look after their own interests. They had agreed to adopt the rule against perpetuities without (so far as MR. STRACHEY remembered) the slightest objection being even raised, although every portion of the Act had formed for nearly two years the subject of constant and careful discussion with the taluqdárs. This rule, therefore, which we had been told was a violation of Hindú law and Hindú usages, and Hindú ideas of propriety, had been freely adopted by one of the most important and influential bodies of Hindús in India, and it had been for some time past the law to which two-thirds of the landed property of Oudh was subject.

But the Oudh law went further. MR. STRACHEY would not disguise his opinion that there was one blot upon the present Bill. It placed no check upon the power of bequest to religious uses, and MR. STRACHEY thought there was no country where such checks were more required than in this; for the prevention of the gross and shameful abuses which too often occurred. He did not share the opinion that there would have been anything objectionable in placing some check in Lower Bengal upon this power of bequest, and in illustration of his

opinion he would again appeal to the law of Oudh. He w…ould read to the Council section twenty of the Act which he had already quot…ed—

> "20. No taluqdár or grantee, and no heir or lega…tee of a taluqdár or grantee, having a child, parent, brother, unn…arried sister, or a nephew, being the naturally born son of a …brother of such taluqdár or grantee, heir or legatee, shall have p…ower to bequeath his estate or any part thereof or any interest th…herein exceeding in amount or value the sum of two thousand ru…pees to religious, or charitable uses, except by a Will execute…d not less than three months before his death, and registered wi…thin one month from the date of its execution."

Unless we were to suppose that the Hindú taluqdárs of …HEY could not enlightened than the educated gentlemen of Bengal, MR. STR…R to their own believe that a rule which the taluqdárs were willing to appl…ence with the property would have been looked on in Bengal as an interfe…ul religion of the people.

The Motion was put and agreed to.

The following Select Committee was named :—

On the Bill to consolidate and amend the law relating to Co…nd Cockerell, Mint :—The Hon'ble Sir R. Temple, the Hon'ble Messrs. Strachey …nage and the and the Mover.

The Council then adjourned to the 2nd August 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. …gulations. for making Laws and R…Genl.

SIMLA,
The 19th July 1870.

No. 29 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, JULY 30, 1870.

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GOVERNMENT OF INDIA.

HOME DEPARTMENT.

THE COTTON SEASON OF 1869-70 IN THE CENTRAL PROVINCES, AND THE BERARS.

From HARRY RIVETT-CARNAC, ESQ., Cotton Commissioner, to the Secretary to the Chamber of Commerce, Bombay,—No. 1892, dated Camp Boolundshuhur, N. W. Provinces, the 25th June 1870.

As the Cotton season has now closed, I have the honor to submit, for the information of your Chamber, a brief Report on the Cotton trade in the Central Provinces, and the Berars, during the past year. On my return from camp, the Annual Report of this Department, containing a detailed account of the experiments undertaken at the Seed-Farms during the year, and other particulars connected with Cotton cultivation and the Trade, will be prepared and submitted to Government, and copies will, in due course, be forwarded to your Chamber. As, however, I am aware that you are anxious to receive, as promptly as possible after the close of the season, a *resumé* of the operations of the year, the following Report has been prepared, which it is hoped may be found to embrace the points of the most immediate interest to your Chamber.

2. *First*, in regard to the area under Cotton cultivation during the year. In my letter dated the 3rd December last, you were informed that the cultivation had been considerably extended. At that date the figures for all the Districts had not been received. A complete Statement is now annexed, from which it will be seen that in the Central Provinces there has been an increase of 73,152 acres, or about 9½ per cent.; in the Berars, an increase of 129,044 acres, or about 10½ per cent.; or, taking the two Provinces together, a total increase of 202,196 acres, or 10 per cent. Thus in the Central Provinces, Cotton now takes up about 6½ per cent. of the cultivated area; in the Berars, about 30 per cent. of the cultivated area.

Area under Cotton cultivation.

STATEMENT SHEWING THE AREA UNDER COTTON CULTIVATION IN THE CENTRAL PROVINCES AND THE BERARS DURING THE YEAR 1869-70, AS COMPARED WITH 1868-69.

DIVISION.	Districts.	Acres, 1868-69.	Acres, 1869-70.	Increase.	Decrease.	REMARKS.
NAGPORE	NAGPORE	86,081	102,949	16,868	.....	
	BHUNDARA ...	.....	.....	.....	.....	
	CHANDA	39,169	57,527	18,358	.....	
	WURDAH	173,514	225,332	51,818	.....	
	BALAGHAT ...	.....	.....	.....	.....	
	TOTAL ...	298,764	385,808	87,044	.....	
JUBBULPORE ...	JUBBULPORE ...	28,180	24,963	.....	3,217	
	SAUGOR	24,389	28,995	4,606	.....	
	DUMOH	14,200	16,600	2,400	.....	
	SEONEE	5,317	6,431	1,114	.....	
	MUNDLAH ...	1,685	1,262	.....	423	
	TOTAL ...	73,771	78,251	8,120	3,640	
NERBUDDA... ...	BAITOOL	537	.....	.....	537	
	CHINDWARA ...	37,053	29,534	.....	7,519	
	HOSHUNGABAD ...	16,708	10,896	.....	5,812	
	NURSINGPORE ...	61,828	63,895	2,067	.....	
	NIMAR	25,625	26,946	1,321	.....	
	TOTAL ...	141,751	131,271	3,388	13,868	
CHUTTEESGURH.	RAEPORE	83,436	85,800	2,364	.....	
	SUMBULPORE ...	79,540	76,350	.....	3,190	
	BELASPORE ...	72,922	65,974	.....	6,948	
	TOTAL ...	235,898	228,124	2,364	10,138	
	UPPER GODAVERY	691	573	.....	118	
	TOTAL ...	750,875	824,027	100,916	27,764	Nett increase, acres 73,152.
EAST BERAR ...	OOMRAOTEE ...	182,183	325,692	143,509	.....	
	ELLICHPORE ...	309,172	187,942	.....	121,230	
	WOON ...	131,161	134,543	3,382	.....	
	TOTAL ...	622,516	648,177	146,891	121,230	
WEST BERAR ...	AKOLA ...	406,862	411,690	4,828	.....	
	BOOLDANA ...	195,123	291,762	96,639	.....	
	BASSEIN ...	62,241	64,157	1,916	.....	
	TOTAL ...	664,226	767,609	103,383	.....	
	TOTAL, BERARS...	1,286,742	1,415,786	250,274	121,230	Nett increase, acres 129,044.
	CENTRAL PROVINCES ...	750,875	824,027	100,916	27,764	
	BERARS ...	1,286,742	1,415,786	250,274	121,230	
	GRAND TOTAL, CENTRAL PROVINCES AND BERARS ...	2,037,617	2,239,813	351,190	148,994	
	INCREASE IN CENTRAL PROVINCES..	.....	.....	73,152	.....	
	INCREASE IN THE BERARS ...	.....	.....	129,044	.....	
	TOTAL INCREASE IN THE CENTRAL PROVINCES AND BERARS ...	.....	.....	202,196	.....	

CAMP BOOLUNDSHUHUR;
The 25th June 1870.

HARRY RIVETT-CARNAC,
Cotton Commissioner.

3. It is satisfactory, too, to notice that in the Central Provinces the increase in the cultivation has chiefly taken place in the Nagpore, Wurdah, and Chandah Districts of the Nagpore Division, which supply the best class of, or Hingunghât Cotton.

In the Central Provinces.

The Jubbulpore Division shows an increase, whilst in the Nerbudda and Chutteesgurh Divisions a small decrease is noticeable. In the latter Division, however, the settlement has not been completed; and, as the totals include the estimated area under cotton cultivation in the Tributary States, the figures cannot pretend to great accuracy.

In the Berars.

4. In the Berars an increase is shown in both Divisions, and there can be no doubt that there the crop is a most remunerative and popular one, and likely long to hold its own. The figures now given will be found to differ slightly from the estimates prepared early in the season. The present totals are those most recently received from the District authorities, and are believed to be sufficiently correct to give a fair idea of the area under Cotton cultivation. The increase in the Oomraotee District and the decrease in Ellichpore is owing chiefly to territorial exchanges, a considerable Cotton-growing tract having, during the past year, been transferred from Ellichpore to the former District.

Damage to the Crop by the Rain and Boll-worm.

5. With such a considerable increase in the cultivation, a larger supply of Cotton than usual was, of course, looked for. You are already aware of the causes that have led to the disappointment of these expectations, and my Monthly Reports, and the Export Statements furnished to you by Mr. Dunlop, will have shown your Chamber the effect on the crop and on the trade, of the unseasonable rain that fell late in the season, and continued with more or less persistency until March. The season opened with excellent prospects. There was at first just enough sun and rain, and the crop throughout the country promised well. Then came the heavy rain when the plant was in flower, which did considerable damage not only in Central India, but in the North-Western Provinces and other Cotton-growing tracts. For long it was hoped that the increased area under Cotton cultivation would more than counter-balance the damage done by the rain. Even comparatively late in the season, it was felt that continued fine weather would revive the plants, and perhaps give a larger crop than had been known in any former year. But rain, and what was equally destructive to the Cotton, damp, cloudy-weather continued to the end of March, and the crop, already damaged by the rain, suffered most severely from the "boll-worm," too well known in America, but which has never before been regarded with much anxiety in Central India. Although from the first I had been most anxious not to cause unnecessary alarm, still by the commencement of February there had been so little improvement

that it then became sufficiently apparent that there would be a decrease in the exports; and writing to your Chamber on the 9th of that month, I was obliged to state that there would probably be a falling off of about one-fifth, or, taking the annual exports from the Central Provinces and the Berars towards Bombay at from 250,000 to 275,000 bales, the exports for the season would probably fall to about 200,000 or 220,000 bales.

6. The result has unfortunately proved this reduced estimate to be only too correct. The annexed Statement (**B.**) shews in detail the exports of cotton by Railway from these Provinces to Bombay, made up to the 19th instant, according to the calculation explained in my former Reports. The quantity carried by Railway this season is taken to represent about 208,884 bales of 400lbs. each, or 104,000 Bombay kandies. To this must be added the exports by road from Berar across the Sawurgaon Ghât into the Bombay Territory. The totals then stand thus—

Falling off in the exports.

EXPORTS OF COTTON FROM THE CENTRAL PROVINCES AND THE BERARS TOWARDS BOMBAY, DURING THE SEASON 1869-70.

	Full-pressed Bales.	Half-pressed Bales.	Dokras or loose bags.
By Railway	122,880	69,351	49,959
By Road	.....	.....	17,094
TOTAL BALES ...	122,880	69,351	67,053

Taking the dokra at one-third of a "bale," and the full-pressed bale and half-pressed bale to be equal to about half a "Bombay kandy," or a bale of about 400lbs., the exports towards Bombay for the season 1869-70 are then as follows:—

By Railway	208,884	bales
By Road	5,698	„
Total ...	214,582	bales

making a total of 214,582 bales, and showing a decrease on the exports of the previous year of 61,130 bales, or about 22 per cent., as will be explained by Statement (**C.**) given in the opposite page.

Statement B.

STATEMENT SHEWING IN DETAIL THE QUANTITY OF COTTON EXPORTED TOWARDS BOMBAY FROM THE STATIONS OF THE GREAT INDIAN PENINSULA RAILWAY IN THE CENTRAL PROVINCES AND THE BERARS, DURING THE SEASON OF 1869-70, AS COMPARED WITH THE EXPORTS OF 1868-69.

STATIONS.	EXPORTS IN THE SEASON OF 1868-69.			EXPORTS IN THE SEASON OF 1869-70.		
	Full-pressed Bales.	Half-pressed Bales.	Dokras or loose bags.	Full-pressed Bales.	Half-pressed Bales.	Dokras or loose bags.
NAGPORE	.....	.....	680	.....	258	920
SINDEE	.....	.....	296	.....	.....	.....
WURDAH	4,224	17,409	1,095	9,856	10,769	25
POOLGAON	.....	8,759	1,536	.....	6,188	487
CHANDOOR	.....	4,379	654	.....	1,368	708
BUDNAIRA	23,384	37,608	883	37,986	11,945	132
MOORTIZAPORE	.....	13,980	1,483	.....	11,040	2,931
AKOLA	.....	4,804	2,237	.....	3,360	733
SHEOGAON	14,772	50,860	3,921	18,322	16,691	5,465
KHANGAON	.....	.....	.....	36,948	2,553	2,397
NANDOORAH	27,801	39,976	17,554	19,768	5,179	1,307
MULKAPORE	.....	.....	4,261	.....	.....	1,718
KHUNDWAH	.....	.....	35,400	.....	.....	10,406
BOORHANPORE	.....	.....		.....	.....	6,084
HURDAH	.....	.....	.....	.....	.....	626
SEONEE	.....	.....	.....	.....	.....	649
ETARSEE	.....	.....	.....	.....	.....	818
SOHAGPORE	.....	.....	.....	.....	.....	7,091
GARRAWARRA	.....	.....	.....	.....	.....	7,462
TOTAL BALES ...	70,181	177,775	70,000	122,880	69,351	49,959

TOTALS.

	1868-69.		1869-70.
Full-pressed Bales	70,181	...	122,880
Half-pressed Bales	177,775	...	69,351
Dokras or loose bags $\frac{70,000}{3}$ =	23,333	... $\frac{49,959}{3}$ =	16,653
	271,289		208,884
Decrease in 1869-70, Bales	62,405		

Statement C.

COMPARATIVE STATEMENT OF THE COTTON EXPORTED FROM THE CENTRAL PROVINCES AND THE BERARS TOWARDS BOMBAY DURING THE SEASONS 1868-69—1869-70.

	Season 1868-69.	Season 1869-70.
	Bales.	Bales.
By Railway	271,289	208,884
By Road	4,423	5,698
TOTAL BALES ...	275,712	214,582
DECREASE IN 1869-70, BALES ...	... ...	61,130

CAMP BOOLUNDSHUHUR;
The 25th June 1870.

HARRY RIVETT-CARNAC,
Cotton Commissioner.

7. An examination of Statement **B.** will shew that this decrease has been distributed pretty evenly over the whole Cotton-producing country, and that, as compared with the returns of last year, each station shows a falling off in the exports. In fact, the damage to the crop was general throughout the Districts of the Central Provinces and the Berars that supply Bombay with Cotton. It will be noticed that "Khangaon" now appears in the list of Railway stations, and considering that the season was a bad one, and that the station was opened late in the year, the little line may be considered to have done pretty well, having carried about 40,000 bales of cotton, besides a certain quantity of other traffic. From Nandoorah 25,000 bales were despatched during the season, but nearly the whole of this was exported before the line to Khangaon was opened, and in all probability the whole of this quantity would have been sent from Khangaon had not an unfortunate delay occurred in the construction of the Branch Line.

Decrease, Season 1869-70.

Traffic on the Khangaon Branch Line.

8. For the first time, too, some of the Stations in the North-East of the Nerbudda Valley are included in the Annual Statement of Exports. The quantity of Cotton sent to Bombay from these stations is small, and even before the Main Line to Jubbulpore was opened, they contributed some few bales which were sent down by cart to the Railway at Khundwah. But the effect of the opening of the line, and the extension of Cotton Agencies in the interior will, doubtless, be to stimulate the trade, and to encourage the cultivation of Cotton in the neighbouring Districts. I am sorry I am not able to include in this Statement the exports from Jubbulpore towards the West, or to give details of the Cotton sent this season by Railway from the North-Western Provinces to Bombay. I am unwilling to delay this report for this information, which will, however, be given hereafter in my Annual Report. I may mention, however, that I learnt at Mirzapore that the imports to that mart, this season, of Cotton from Jubbulpore and the neighbourhood had much fallen off. This was to some extent to be attributed to the bad season. But it was generally believed that much of the Cotton that would otherwise have come to Mirzapore had been drained off towards Bombay. At Cawnpore and Agra also, I learnt that one or two consignments of Cotton had been sent from those markets to Bombay. But this subject will be treated of more at length in my Report on the North-Western Provinces.

Nerbudda Valley Cotton.

9. Some of the Cotton, for which credit has been taken in the Statement of Exports from the Central Provinces, and the Berars was, doubtless, grown in the Nizam's Territory, South of Berar, and sent to our markets for sale. I am not able at this moment to give the exact figures of such imports, but they will be published hereafter, when the Trade Returns are received. The Territory of His Highness the Nizam, which adjoins the Berars, has almost as much interest for your Chamber as the Berars themselves. As much of the very excellent Cotton

Cotton from the Territory of His Highness the Nizam.

which is exported to Bombay by the Nagpore Extension of the G. I. P. Railway, and the Poonah-Sholapore Line is grown in this Territory, I availed myself of an opportunity, during the presence in the Berars of His Excellency Sir Salar Jung, G.C.S.I., the Minister of His Highness the Nizam, to represent to His Excellency how valuable returns of the area under Cotton cultivation, and periodical information regarding the condition of the growing crop, would be to your Chamber, and to all interested in the Cotton trade. Sir Salar Jung was pleased to express his willingness to consider the matter favorably, and I hope to be able to send you hereafter full information regarding the Cotton prospects in that part of India.

10. Another point to be noticed in the Statement of Exports is the proportion borne by pressed to unpressed cotton. In my last Annual Report it was noticed how the system of full-pressing and half-pressing the Cotton in the interior had extended throughout the Central Provinces and in the Berars. During the season 1868-69, 8 per cent. of the Cotton sent by Railway went down in *dokras* or loose bags, 66 per cent. in half-pressed bales, and 26 per cent. in full-pressed bales: or 8 per cent. of the quantity was sent down as "loose Cotton" and 92 per cent. was "pressed." This season sees a still further advance in the proportion of full-pressed Cotton, 7½ per cent. only of the exports having been sent down in *dokras* or loose bags, 33½ per cent. in half-pressed bales, and the large quantity of 59 per cent. in full-pressed bales. Indeed, although the total exports this season by Railway have fallen short of last year's supplies by 62,405 bales, still 52,699 more full-pressed bales were sent down this year to Bombay than last year, the figures for 1868-69 and 1869-70 being respectively 70,181 full-pressed bales and 122,880 full-pressed bales.

Progress in the system of pressing Cotton.

11. The great progress made during the last few years in pressing Cotton in the Districts will be seen by the accompanying Table.

PERCENTAGE OF COTTON EXPORTED BY RAILWAY DURING THE UNDER-MENTIONED YEARS.

	Dokras or loose Bags.	Half-pressed Bales.	Full-pressed Bales.	Total Dokras or loose Bags.	Total pressed.
In 1865-66	100	0	0	100	0
„ 1866-67	85	13	2	85	15
„ 1867-68	27½	55½	17	27½	72½
„ 1868-69	8	66	26	8	92
„ 1869-70	7½	33½	59	7½	92½

Or, in other words, in 1866 the whole of our Cotton went down to Bombay in loose bags or *dokras*.

In 1867, the system of pressing was commenced. At first "full pressing" did not make much way, 2 per cent. only of the crop passing through the full

presses. The half-presses, however, secured 13 per cent. of the Cotton, and the nett result that in that year 15 per cent. of the crop went down pressed, more or less, against 85 per cent. of *dokra* Cotton.

In 1868, the proportion of full-pressed and half-pressed Cotton advanced to 17 per cent., and 55½ per cent. of the crop, respectively, against 27½ per cent., the figures to which *dokras* had sunk, or nearly three-fourths of the crop was pressed against a balance of one-fourth of loose Cotton.

In 1869, the number of full-pressed bales rose to 70,500, and the half-pressed bales to 177,000 of a crop of 270,000 bales; that is to say, 26 per cent. of the crop went to the full-presses, and 66 per cent. to the half-presses, making the percentage of pressed Cotton to *dokras* as 92 to 8.

Now, during the season that has just closed, the number of full-pressed bales rose to 122,880; the number of half-pressed bales sank to 69,351; and only 49,959 *dokras* were sent by Rail. That is to say, 59 per cent. of the crop exported went to the full-presses, 35½ per cent. to the half-presses, making the proportion of pressed Cotton to *dokras* as 92½ to 7½.

12. The number of full-presses, too, has considerably increased, and the markets of Khangaon, Sheogaon, Akote, Oomraotee, Wurdah, and Hingunghât are now all supplied with machinery for packing the bales for export; and, as noticed in my last Report, the Cotton grown in the vicinity of these markets can now be purchased and pressed under the superintendence of European merchants on the spot, and the full-pressed bales may be conveyed by Railway from the press-houses in the Berars to the wharf at Bombay, and put on board ship without any chance of the bales being tampered with, and the Hingunghât or Oomraotee Cotton which they contain being mixed with Cottons of inferior growths. Believing as I do that this system of purchasing the Cotton at the fountain head, and packing it for export on the spot, is calculated to sustain the fair reputation of the Cotton supplied by our Provinces, and to some extent, at least, to check adulteration, I confess that, with my present lights, I regard the extension of this system with unmixed satisfaction. I believe that contrary views are held by some gentlemen of great experience, and for whose opinions I have the greatest respect. I am not as yet so prejudiced in favor of any particular system as not to be open to conviction, and I should be glad to receive from your Chamber, which, on all occasions, has been good enough to afford me the most cordial assistance, an expression of opinion regarding the working of this system, and of its effect on the Cotton trade.

Increase in the number of Presses.

Merits of the system of pressing in the Districts.

13. It is but fair that I should here mention that there has been no recurrence of the blocks on the Railway line which some years ago used to form a prominent subject in my Report, and that the working of the traffic has been satisfactory.

Satisfactory working of the Railway Traffic.

14. From the Reports that have been from time to time submitted to you, your Chamber must be aware of the steps that, under the orders of His Excellency the Viceroy, have been taken during the year to improve the cultivation of the Cotton crop, and to assist the trade in these Provinces. It may, however, be convenient to follow the plan pursued on former occasions, and, at the close of the season, to recapitulate briefly the chief measures that have been adopted towards these ends. You will, doubtless, remember that, on the samples of exotic Cotton grown in the Berars being submitted to you last season, your Chamber expressed very decidedly the opinion that "no exotic variety that could be grown in the Berars will equal in value and usefulness the indigenous varieties of the country known as Oomraotee and Hingunghât; and the Committee are of opinion that whatever can be done to maintain the present high character of these varieties, or if possible to improve it, would be one of the most important services that can be rendered to the cause of improved Cotton cultivation in the Districts of country under the Cotton Commissioner's superintendence."

Measures adopted to improve the cultivation.

Opinion of the Chamber on the subject.

15. The season in which the samples submitted to your Chamber had been grown had not been a favorable one, and it was therefore determined to try these foreign varieties yet once more. And they have now had another and very careful trial during a season which, although unfavorable to the indigenous plant, may, from the excessive moisture, be considered to be unusually in favor of the exotic varieties. But with all the advantages of constant rain, which the plants seemed thoroughly to appreciate, the result has been unfavorable, the out-turn small, and the produce inferior. Your Chamber will, perhaps, reserve its opinion on the subject until the receipt of the samples of the produce which have been prepared for you. But I shall be surprised if the result should affect the views now held by you on the subject. The exotic plants will receive a further trial this season, and, perhaps, with the assistance of the experienced Gardeners who have recently arrived, some success may yet be achieved.

Failure of the exotic plant.

16. The hybrid plants, sent out by Major Trevor Clarke, have been watched with great attention. It is almost too early yet to give a decided opinion regarding their merits, but the plants are being most carefully studied by the Seed Gardeners, who have already had some experience in such experiments.

The hybrid plants.

17. In accordance with your recommendation, the greatest attention has been paid to the indigenous varieties. Besides the three Assistants appointed at the commencement of last season, the staff of the Cotton Department has recently been strengthened by the appointment of four experienced European Gardeners as Superintendents of experiments. These Gardeners have been placed under the orders of the Assistants to the Cotton Commissioner at the Model Farms of Sheogaon,

Improvement of the indigenous plant.

Oomraotee, and Hingunghât, and the fourth has been attached to the Farm recently established at Boolundshuhur, in the North-Western Provinces. At these Model Farms, indigenous seed, selected during the former season on the plan advocated by Major Trevor Clarke, has been most carefully sown and cultivated.

Selection of Seed.

Various experiments have been tried with more or less success with manures, deep ploughing, &c. Notwithstanding an unusually bad season, the result has been satisfactory, the staple has been pronounced to be excellent, and the out-turn of cleaned Cotton to the acre from the selected seed has been large, and in one case the combined effect of good seed and deep ploughing resulted in an out-turn of 25[illegible]lbs. of cleaned Cotton to the acre. The case was, it is true, an exceptional one, as the soil of the field in which the crop was sown was superior to the ordinary run of the Cotton-growing tracts. But from ordinary fields in the Farm during this, an unfavorable, season, as much as 176lbs. of cleaned Cotton was picked from the acre. The results are, therefore, encouraging.

18. The greatest care has been taken in selecting the seed on the pedigree system from this season's crop, the inferior bolls being kept separate and the *Kapas*, or Cotton in the seed, being divided into four classes. Much of the best selected seed has been distributed among the most intelligent landholders of the neighbourhood, and the remainder has been reserved for sowing in the Model Farms.

19. Whilst the most strenuous efforts are being made to improve the *quality* of our produce—the length and strength of the staple of the indigenous Cotton, at the same time the hardly less important question of the increase of quantity—the out-turn to the acre, has, as will be seen from the above remarks, received some attention; for the measures adopted for the improvement of the staple will, it is hoped, have some effect on the out-turn also; and it may not unreasonably be expected that the produce of the healthy seed, thus carefully selected, may show a marked improvement in quantity as well as in quality. A variety of experiments have been undertaken at the Farms to ascertain the means by which the increase of the out-turn may be most successfully and economically ensured. The respective merits of the various manures are being carefully tested; the "Fertilizer" sent by the Cotton Supply Association; the Australian guano, of which a consignment was received from the Government of India; and the Jail *poudrette*, of which great hopes as an effective and economical manure are entertained, have all been put down at the Seed Gardens. The imported manures were unfortunately received too late in the season to admit of the experiments being made as thoroughly as could have been desired, and the same difficulty prevented the combined effect of irrigation and manure on the Cotton plant receiving a perfectly satisfactory trial.

Increase of the out-turn.

By use of manures.

Experiments with manures.

20. During the ensuing season, however, the experiments with irrigation will be conducted on more advantageous terms. The Seed Farm at Sheogaon has this season been extended to 230 acres. The site is admirably situated, and it is hoped that by damming up the

With irrigation.

neighbouring stream an effective and economical water-supply may be ensured. The Special Irrigation Engineer recently appointed to Berar is now engaged in examining this site. Besides Cotton, a variety of experiments will be undertaken at this and the other Farms with the Rhea plant and a variety of other produce.

At the Sheogaon Farm.

21. The Farm at Oomraotee this season consists of 280 acres of land, and arrangements have been made for a variety of experiments with the assistance of irrigation, manure, &c.

At Oomraotee.

22. The Farm in the Hingunghât country has been moved to a village named Mudnee, in the vicinity of Wurdah, the Head Quarters of the Wurdah District. At Mudnee a special irrigation scheme has been sanctioned and completed, and the experiments will have the advantage of an abundant supply of water.

In the Hingunghât Country.

23. The Farm at the place where I now am (Boolundshuhur, North-Western Provinces), is in the heart of the Cotton country, near the great market of Khoorjah, and on the canal, from which a permanent supply of water is available. The site possesses every advantage. About 150 acres are being sown with selected Cotton seed.

At Boolundshuhur.

24. So far as can at present be judged, it would appear that deep ploughing is of great benefit to the plant, and those parts of the Seed Farms which have been thus treated show very favorably by the side of the fields cultivated according to the ordinary Native method. The plants on the well-ploughed fields were much stronger and healthier than their neighbours, and, as already noticed, 180lbs. of clean Cotton per acre was picked from these fields. This season an ordinary Native field hardly yielded 50lbs. to the acre. The experiments of this season have indeed been so encouraging that it is proposed to order from England a Steam Plough for use in the Central India country.

Deep ploughing.

25. The Seed Farms are also used as Al-fresco Agricultural Schools. The sons of some of the principal cultivators are employed on the Farm, and the various experiments are explained to them, and to the villagers who occasionally visit the Farm to learn the results of our operations, and who express considerable astonishment at the excellent crops, not only of Cotton, but of tobacco, Carolina paddy, and other produce raised at the Seed Gardens.

Al-fresco Schools.

26. The remaining measures adopted by the Cotton Department during the year relate chiefly to the encouragement given to the extension of the trade in Central India. The greatest importance is attached to these measures, as it is believed that the establishment of Mercantile Firms in the interior, who are willing to pay a good

Measures to assist the trade.

price for good Cotton, offers the very best inducement to t[he] nd Berars are far cultivate this crop carefully, and to extend its cultivation as [a]ntity of Cotton At the same time the improved machinery for preparing [a]ny previous year. Cotton introduced by these Firms ensures, there can be [u]ld, undoubtedly, arrival of a large portion of the crop in the European marke[t] [e]ed, the cultiva- condition. [h]ave ruled so high [g]e damage to the [r]ospect of even a

27. Every endeavour has, therefore, again been made to r[emove] which has just from the path of the trade's progress, and to supply its requirem[ents]. Thus the means of communication in the C[otton] Districts have been much improved by the lo[cal] authorities. The arrangements for the Cotton traffic on the Great Indian Peninsula Railway, as already noticed, have been p[er]fected.

Improvement of the means of communication in the Cotton Districts.

28. The construction of the branch line of Railway to Kha[ngaon] was but the commencement of a system for jo[ining] our now isolated Cotton markets to the main l[ine]. As you are aware, this little line was opened in March last, and has alr[eady] done its share in the carrying of this season's Cotton traffic.

The Khangaon Line.

29. The branch to Oomraotee h[as] been surveyed, and it is hoped that the line may be ready for next season's work.

The Oomraotee Line.

30. The line through Hingunghât to Chanda also has been survey[ed], and there is a hope of that market soon enjoying the advantages of Railway communication. I am aware that the importance of the recent discoveries of Coal in this quarter are fully [a]ppreciated by your Chamber. Besides the cheapening of the carriage of goods by Railway which may be expected to follow the employment of this Coal, the discoveries will, it is hoped, prove of great advantage to the Steam Factories for cleaning and pressing Cotton which are now at work in the Central Provinces and the Berars. Surveys of both sides of the Wurdah River are now nearly completed, and it is anticipated that work may be commenced in the early part of 1871. The direction taken by the proposed line of Railway will much depend on the result of the further investigations that are now being made regarding the extent and direction of the Coal Field.

The Branch to Hingunghat.

The importance of the Coal discoveries.

31. The scheme proposed some years ago by Sir Richard Temple for a light Railway or Tramway from Nagpore to the Chutteesgurh country is again under consideration; and, as it has an indirect bearing on the Cotton question, it may be noticed here. Chutteesgurh does not produce much Cotton, but the available supply of grain in those Districts is very large. If this grain-producing country could be tapped by a Railway, and the large supplies of grain poured

The Chutteesgurh Line.

have now commen[ced] to the Nagpore country, the cultivators would be able to fall is given below [to] much of the land which is now taken up with food grains, [ad]on of this line, in addition to the other advantages promised, "Up[on] to extend the cultivation and increase the supply of Cotton. On[e]

[Br]anch Railway from Khundwa to Indore, and that from Goolburgah to Hyderabad, have also some interest for [Ind]ore and the Cotton trade, as both these lines will carry some Cotton. The surveys are now being pushed on.

33. During the past season the Offices of the Government Telegraph were at work in the Cotton markets of Khangaon, Akote, Oomraotee, and Hingunghât, and I think it will be generally admitted that, on the whole, the service was well performed. Some delay in the transmission of messages was temporarily caused during the construction of a new line, which was set up by the Telegraph Department with the special object of providing a separate wire for the Cotton Merchants, and preventing the messages from the Cotton Districts being delayed by the through traffic between Bombay and Calcutta, which sometimes happened when but one wire was available. And some inconvenience was occasioned by the premature closing of the Telegraph Office at Akote. The latter subject has, however, been brought to the notice of Government, and it is not anticipated that any similar inconvenience will occur in future.

Telegraph communication with the Cotton Districts.

34. As your Chamber is aware, I have been for some time past on tour in Bengal, the North-Western Provinces, and the Punjab. A Farm, on the principle which has been found successful in Central India, has, as already noticed, been established in the North-Western Provinces; and it is hoped that other measures conducive to the improvement of the cultivation and the assistance of the trade in Cotton may soon be adopted.

Tour in the North-Western Provinces.

35. In regard to stocks there is, I believe, very little Cotton remaining in the Districts. The prices that have ruled throughout the season have been so favorable that there has been little inducement to either the cultivator or the dealer to keep his Cotton back, and the improved communications now prevent any delay in transit. My Assistants, who have made careful enquiries on this subject, estimate the quantities in stock as follows:—

Stocks.

In the Hingunghât country	2,000	bales.
„ East Berar	4,000	„
„ West Berar	2,000	„

36. In conclusion, I would notice that, although the past season has been, as the preceding paragraphs will have shown, an unfavorable one, and although the exports have fallen short of the supplies of former years, still the

prospects of the Cotton trade in the Central Provinces a[nd] Berars are far from discouraging. A larger qu[antity] of Cotton was sown in 1869-70 than in a[ny previous year.

Conclusion.

And had it not been for the exceptional weather, the crop wo[uld, undoubtedly,] have been the largest ever exported from Central India. Ind[eed, the cultiva-]tion has been steadily increasing year by year, and prices h[ave ruled so high] during the season that has just closed, and, notwithstanding th[e damage to the] crop, the cultivators have done so well, that there is every p[rospect of even a] still larger area being sown with Cotton during the season [which has just] commenced. But on this and other subjects connected with t[he state of the] weather and the prospects of the crops, I shall hope to keep [your Chamber] fully informed in my future Reports.

I have the honor to [be,]

SIR,

Your most obedient Se[rvant,]

HARRY RIVETT-C[ARNAC,]

Cotton C[ommissioner.]

Dated Camp Boolundshuhur, 25th June 1870.

P. S., dated Simla, the 4th July 1870.

THIS Report has been delayed for a few days, in order that the la[test informa-]tion regarding the prospects of the season 1870-71, which may n[ow be consi-]dered to have fairly commenced, might be supplied to your Chamber. [Abundant] rain has fallen, and as yet, at least, the prospects are favorable.

HINGUNGHAT.—The Assistant to the Cotton Commissioner, wr[iting under] date the 20th instant, states,—

"On the night of the 17th, we had the first burst of the monsoon, and the weather since then has been almost continuously drizzling rain.

"The cultivators have not yet begun sowing, and will not begin to do so until three or four more heavy showers of rain have fallen, for as yet the rain has not penetrated to any great depth. At the Mudnee Farm we are quite ready to begin sowing as soon as a favorable opportunity occurs."

EAST BERAR (OOMRAOTEE).—Writing under date the 23rd instant, the Assistant to the Cotton Commissioner reports,—

"From the 12th up to date, we have had very heavy showers of rain, by which the soil has become so thoroughly saturated that some of the cultivators

have now commenced to sow their fields with Cotton. The detail of the rain-fall is given below—

				Inches.	*Cents.*
"Up to the 12th June	...	...	...	2	33
On the 16th "	...	...	...	0	5
" 17th "	...	...	...	4	35
" 18th "	...	...	...	0	25
" 20th "	...	...	...	0	33
" 21st "	...	...	...	1	30
" 22nd "	...	...	...	0	7
Total Inches			...	8	68

"The rain which fell on the 17th was exceedingly heavy. Rain fell continuously for nearly 48 hours, and the water has soaked well into the ground.

"The Monsoon has commenced this time earlier than was expected. On account of the heavy unseasonable showers that fell during the past two or three months, the cultivators seemed to fear that the rains might fail us towards the middle or close of the season, when they will be urgently required. This unexpected early rain has hurried on the sowing operations, and many of the fields are yet to be got into order, and the cultivators are now busily engaged in sowing or preparing their fields.

"The work in our Seed Garden was stopped for four days owing to the heavy rain, as was the case everywhere in the country. I am glad to report that since yesterday at noon the weather has been fine, and the work in our garden is now going on rapidly.

WEST BERAR.—The Assistant to the Cotton Commissioner, under date the 10th, writes,—

"On the night of the 7th, we had 1 inch 90 cents. of rain, consequently the ground has been pretty well saturated; in fact so much so that I have not been able to do any thing with it for the last two days."

And again, under date the 24th, he adds,—

"We have had very heavy rain, as much as 8½ inches."

Very heavy rain has fallen in the North-Western Provinces, and in Central India, and, as far as I can learn, all over the country; and the prospects in every direction are reported to be favorable.

The following reports have just been received by Telegraph:—

HINGUNGHAT, 4TH JULY.—Rain-fall up to date 8·49 inches. From the 22nd to the 1st no rain fell. During the last four days the rains have set in again steadily, and the prospects of the crop now look well.

OOMRAOTEE (EAST BERAR), 4TH JULY.—Rain-fall up to date nine inches. Cotton crop most flourishing.

AKOLA (WEST BERAR), 4TH JULY.—Rain-fall 8·75 inches. Weather fine during last fortnight, and Koonbies (cultivators) busy sowing. Rain is now threatening. Prospects could not be more favourable.

SIMLA,
The 4th July 1870.

HARRY RIVETT-CARNAC,
Cotton Commissioner.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

PROTECTION FROM HEAT OF SERVANTS OF RAILWAY COMPANIES AND OF PASSENGERS IN TRAINS.

From MAJOR F. S. TAYLOR, R.E., Joint Secretary to the Government of Bengal, Public Works Department, Railway Branch, to the Offg. Secretary to the Government of India, Public Works Department,—No. 1067 G., dated Fort William, the 18th May 1870.

IN acknowledgment of Resolution No. 614 G, dated April the 5th, on the subject of the protection of Europeans from heat, I am instructed to forward, for the information of the Governor General in Council, the accompanying copy of a letter No. 277 G, with its enclosure, from the Board of Agency of the East Indian Railway Company, expressing an opinion unfavorable to the introduction of tatties.

2. It is, however, the conviction of the Consulting Engineer to this Government, as expressed in the accompanying Note dated 2nd May, that great improvements are possible in the existing first class carriages at a moderate cost, and that carriages so altered might be easily ventilated and cooled with tatties. The Lieutenant-Governor therefore, while regretting the indisposition evinced by the Agency to meet the views of the Government of India, would recommend that these additional papers on the subject of American carriages be forwarded to Her Majesty's Secretary of State in continuation of those sent with my letter No. 594 G, dated 11th March 1870, for communication to the Directors of all Indian Railways for their consideration.

From E. PALMER, ESQ., Chairman, Board of Agency, East Indian Railway, to the Consulting Engineer to the Government of Bengal, Railway Department,—No. 277 G, dated Calcutta, the 3rd May 1870.

IN acknowledging receipt of your No. 918 of 23th ultimo, and in reference to previous correspondence on the subject of the protection of passengers during the hot season, I have the honor to enclose copy of Chief Engineer's No. 978 of 2nd instant, remarking on the matter, and to state that the Agency entirely concur in the views therein expressed.

Upon receipt of Locomotive Superintendent's report, the Board of Agency will be in a position to discuss more fully the question of affording extra protection from the sun for engine drivers.

From G. SIBLEY, ESQ., Chief Engineer, to the Chairman, Board of Agency, East Indian Railway,—No. 978, dated Calcutta, the 2nd May 1870.

YOUR docket No. 1332 of 14th ultimo.

I delayed replying formally to the above hoping to have received the Locomotive Superintendent's views as to whether he thought any modification of the hoods of the locomotives was necessary with the view to mitigate the severe trial which the running and working of the train is supposed to prove, especially to drivers and firemen.

I have not yet had reply, but I hear that he is away up-country and is investigating the question.

With reference to the suggestions to fit tatties to the windows of all first and second class carriages with appliances for watering them, I do not think that the advantage to be derived is commensurate with the outlay necessary for constructing the large reservoirs that would be required over each compartment, with the corresponding feeding, tubing, &c., and, further, with the great practical difficulty of replenishing these at frequent intervals.

That the public would be ready to pay the extra charge requisite to cover such expenses, when spread over only six weeks or two months of the year, I take leave very strongly to doubt. Such luxuries of travelling can be applied to a viceregal suite of carriages built and run regardless of all costs, but would never be paid for by the general public.

As evidence that they are not necessaries of travelling, I may state that I am myself in the habit of travelling at all seasons of the year, and I do not use them.

Note by MAJOR F. S. TAYLOR, R.E., Consulting Engineer to the Government of Bengal, on the subject of the improvement of First Class Carriages in India,—dated Calcutta, the 2nd May 1870.

SINCE the discussion on the subject of an experimental palace car (or grand saloon) for India, which closed with my letter to the Board of Agency, No. 473, dated 28th February, I have taken the opinions of several practical railway men, and have carefully sounded the views of gentlemen in the habit of frequently travelling by rail, both on the East Indian and Great Indian Peninsula Railways.

As there seems, at first sight, no important difference in the latest improved first class carriages on the two lines, I was surprised to find that the balance of private opinion was in favor of the Great Indian Peninsula carriages; but on closer inquiry I ascertained that it was nothing but the longitudinal sleeping couches of the Great Indian Peninsula saloon carriage that had turned the scale in their favor, and on careful consideration I now feel quite satisfied that *the longitudinal sleeping berth* is an absolutely essential feature in the "through carriage" of the future.

In a compartment of the best East Indian sleeping carriage (the full paying load of which is only eight fares in two separate compartments), the two berths next the engine are almost unbearable in the hot weather from want of ventilation, while a great deal of floor space is taken up in providing double the quantity of sitting accommodation required. The Great Indian Peninsula saloon carriage, on the other hand, with a smaller paying load, is unnecessarily lavish of floor space, and is open to the same objection as respects the cross berths next the engine. In neither carriage is any scientific ventilation possible.

These are all radical defects which cannot be removed.

During my recent journeys on the line, while endeavouring to solve the problem at issue and at the same time overcome the objections raised by the Chief Engineer to the interior arrangements of my first design for a palace car, my attention was accidently drawn to the first class American carriage constructed on Mr. Rendel's designs in 1868, described in my Note of 9th April, but now banished from the main line, and it at once struck me that this carriage, if properly fitted up, would be far better adapted to the requirements of the through traffic in India than any English carriage, however improved, and that a single seat in it would be more worth securing than a compartment in the other.

I accordingly prepared a sketch of the alterations I wished to recommend and forwarded it to the Board of Agency, but failed to obtain their consent to the experiment being tried until the Board of Directors have expressed their views on the general question of palace cars for India. They at the same time express an unfavourable opinion of the design.

See my letters No. 876, dated 20th April, and No. 261, dated 26th April, in reply, annexed.

The subject cannot, however, be allowed to rest here, as His Excellency the Governor General in Council has already interested himself in the question of improvement, and I therefore now bring forward standard designs for an ordinary "through saloon" carriage, and a "grand saloon," the latter to be carried on trucks on the American palace car principle,—and challenge further criticism on both.

From a railway point of view, it must be noted that in these designs the paying load as well as the first cost are identically the same as in the existing stock of the English pattern. The public, on the other hand, have the advantage of $1\frac{1}{2}$ feet additional width, owing to the doors being placed at the ends of the carriage; the seats are properly proportioned to the actual number of occupants, thereby doubling the open floor area; all the sleeping berths are arranged longitudinally under the windows; the ridge ventilator raises the height of the carriage in the centre to 9 feet, and the whole carriage can be scientifically ventilated from end to end, and cooled with tatties fixed in the end doors. In an American carriage the air entering from the front is purified by passing it forcibly over water which saturates the dust and deposits cinders and sparks. The supply of air so obtained would be insufficient in this country if the side windows were closed, because a strong current is required; but I am in hopes that the well-known Indian expedient called a tattie will be found an efficient filter as well as refrigerator, and may be used all the year round as a preventive to dust. If these tatties can be damped efficiently by mechanical means, some trouble may be saved, but it is also quite practicable to employ a coolie to water them from the platform.

The grand saloon is simply the equivalent of two ordinary saloon carriages placed upon trucks on the American system, with a view to secure greater smoothness of motion and freedom from jar and noise. These grand saloons would be run probably in connection with the English mail steamer only, and the advantages offered to passengers would be the run "through" with the mails, avoiding hotel expenses at the port; the Railway Company guaranteeing through booking, and finding suitable conveyances to and from the steamers. On board the steamers the Purser might be constituted the Railway Company's Agent for through booking.

Throughout this discussion my aim has been to show that a radical improvement in the system of first class transport was not only feasible, but really necessary if the Railway Companies hoped to compete with the sea route. It has been shown, I think, conclusively that no such expense as that stated by the Chief Engineer need be entailed on the Railway Companies, for existing stock can be altered at a moderate outlay, and new stock built without any additional expense; and also that there is a radical defect in the English pattern of carriage which cannot be overcome by such alterations as those approved by the Chief Engineer; and I must point out, in conclusion, that if the Board of Agency really desire to have the public verdict, they must no longer withhold their consent to an experiment on an adequate scale.

The Chief Engineer, whose views are supported by the Board of Agency, would wish it to be inferred that perfect privacy is obtained in the English carriages; but in fact, unless a whole compartment is taken and paid for, no privacy whatever is secured; and it remains to be seen whether, in a carriage, such as I recommend, fitted with every comfort where a single seat can always be secured and a reasonable amount of isolation and privacy obtained, the standard of manners in this country is equal to the strain of journeying by rail under conditions similar to those obtaining on board ocean steamers.

APPENDIX.

From MAJOR F. S. TAYLOR, R.E., Joint Secretary to the Government of Bengal, Public Works Department, Railway Branch, to the Chairman, Board of Agency, East Indian Railway,—No. 876, dated Calcutta, the 20th April 1870.

ADVERTING to previous correspondence on the subject of American passenger carriages, and with special reference to my No. 834 G, dated 16th instant, forwarding a Government Resolution No. 614 R, dated 5th April, on the subject of the protection of passengers during the hot season, I have the honor to solicit your attention to the accompaying Note dated 9th current, and to inform you that I shall be happy to undertake to superintend the re-fitting of the first class carriages of the American pattern if the Board of Agency will authorize the work being put in hand. The cost will be trifling, and I have every reason to hope that a most comfortable vehicle, fitted with tatties, and adapted for through traffic to accommodate twelve people, can be turned out.

Note by MAJOR F. S. TAYLOR, R.E., Consulting Engineer to the Government of Bengal, on the subject of the construction of passenger carriages on the American pattern,—dated Calcutta, the 9th April 1870.

I FIND that, in the year 1868, sufficient carriages of first, second, and third class for running one train were built by the East Indian Railway Company, with end doors and platforms and a passage down the centre, on the American system, but that the train has never been fairly tried as a whole. The first and second class carriages have already been condemned, and the third class are now being run next the engine on a mixed train, the guard in the front break-van having through communication.

Mr. Pearce, the able Superintendent of the Carriage Department of the East Indian Railway, who built the above-mentioned carriages, had not, I believe, at that time seen drawings of a real American carriage, nor has he or the Traffic Manager had any practical experience of the working of American railways; it can therefore hardly be a matter of surprise that the experiment has failed, for, in my opinion, the only feature of the American system which is unsuited to existing Indian railways, or unnecessary under the English system of working, has been adopted.

The central passage, which here sacrifices so much valuable sitting space, is provided for in American carriages by increased width, some of the larger class of stock having a breadth of 11', with a gauge of 4' 8½"; but unfortunately no such lateral expansion is now possible, even on future Indian railways of the standard gauge of the 5' 6", because the vehicles would not be interchangeable, and this objection, coupled with the fact that the trunk lines are already fully stocked on the English method, are obviously insuperable obstacles to the general introduction of American carriages; but it must, I submit, for ever remain a source of profound regret that Indian railways are debarred from increasing the carrying capacity of their vehicles by lateral expansion, for experience shows that 12' is not an extreme width for a passenger carriage on a 5' 6" gauge, and I fully believe that on the low speed system (now almost universal in America) goods wagons of the same width could also be run with perfect safety.

Although, however, I have endeavoured to show that this first experiment on the American system is a failure, I am very far from saying that Indian railways cannot profit by American experience in carriage-building. To begin with, I have already urged the construction of an experimental palace car (or grand saloon), the main feature of which is the adaptation of the American truck system to the principal working parts of an ordinary vehicle so admirably effected by Mr. Pearce in the design submitted to Government, by which expedient I hope to attain far greater smoothness of motion, and freedom from jar and noise. Another marked feature of the palace car design is the lofty ridge ventilator or lantern extending from end to end of the carriage, raising the roof in the centre to a height of 9 feet, allowing a free circulation of air, and admitting of scientific ventilation. Of the internal fittings, and distribution of the State rooms as designed by me, I will at present say nothing, because on this important question of personal comfort so much difference of opinion exists; but an experiment is now being tried, with the concurrence of the Board of Agency, on an officers' carriage, and I wait the result in perfect confidence that, in respect of comfort also, American experience will prove of the greatest value.

On the question whether any real advantage is gained by the substitution of end doors and a through passage, I will observe that for through or reserved carriages the arrangement adds to the privacy, and admits of additional width, for which reasons I have embodied this feature of an American carriage in the design for an experimental "grand saloon" for India, but I think the plan as applied to an ordinary carriage is a positive disadvantage. Nothing whatever is gained by collecting the tickets inside the carriage; on the contrary, unless the Conductor is extremely sharp, anybody may evade him during his rounds, and slip out at his destination without taking a ticket, and the precautions practised by Conductors "out West" are, as I have seen and felt, more ingenious than agreeable; the fact being, that the through passage was solely designed for the issue of tickets *en route*, and then their collection becomes an idle form.

On the other hand, the system of dividing the third class carriages into distinct compartments, each with its separate door, was adopted after most careful consideration as the only effectual check against over-crowding helpless Native travellers, and it also affords the greatest possible facilities for ingress and egress. I note further that Mr. Batchelor has pointed out the risk of a serious catastrophy in event of a panic among the Natives in a carriage with an open platform, and against all these objections has to be set the very doubtful advantage of an occasional patrol of the train by the guard, who, if anything is really the matter, should be at his brake, or communicating with the driver.

From E. PALMER, ESQ., Chairman, Board of Agency, East Indian Railway, to the Consulting Engineer to the Government of Bengal, Railway Department,—No. 261, dated Calcutta, the 26th April 1870.

IN acknowledging receipt of your letter No. 876 of 20th instant, and enclosures, I have the honor to inform you that as the proposal contained therein appears to present the same objectionable features as your former one, the Agency are of opinion that it would be advisable to await the views of the London Board on the question of the introduction of palace cars in India now before them, as advised to you in Agency letter No. 128 G of 28th February last.

From MAJOR F. S. TAYLOR, R.E., Joint Secretary to the Government of Bengal, Public Works Department, Railway Branch, to the Secretary to the Government of India, Public Works Department,—No. 1088 G, dated Fort William, the 23rd May 1870.

IN continuation of this Office letter No. 1067 G, dated 18th instant, I am directed to forward, for the information of the Governor General in Council, the accompanying copy of a further communication from the Chairman, Board of Agency, East Indian Railway, on the subject of the employment of tatties on engines for the protection of drivers from heat.

No. 301 G, dated 14th May 1870.

Endorsed by E. PALMER, ESQ., Chairman, Board of Agency, East Indian Railway,—No. 301 G, dated Calcutta, the 14th May 1870.

COPY of the following forwarded to the Consulting Engineer, Government of Bengal, for information, in continuation of Agency letter No. 277 G of 3rd instant.

Extract from MR. CAMPBELL's letter No. 2041—673 A, to G. SIBLEY, ESQ., Chief Engineer, East Indian Railway, dated 7th May 1870.

IN reply to your No. 312 of the 21st ultimo, and the Government of India's No. 614 of the 5th idem, I beg to state that after obtaining the views of the majority of our leading enginemen, and from my past experience, I am fully of opinion that our present arrangement of engine awnings affords almost as complete a protection from the sun as could be desired. The only thing wanting is a back purdah to each engine, which I have arranged to supply.

With reference to the use of *khus-khus* tatties for reducing the temperature on the foot plates of our engines, I beg to point out that it is quite understood among the men in the North-West portion of the line that *khus-khus* can be obtained for the asking, but as it has a great tendency to cause rheumatism, it consequently is not much used.

I may mention that it is not while our engines are in motion that our men suffer from the heat, but while they are at a stand at road side stations, oiling their engines, and shunting wagons; while so employed, they are subject to the direct rays of a burning sun with no other protection than small caps which the men usually wear in preference to the usual *sola topies*, they find the latter inconvenient.

Although I am not in favor of weather boards in this country, I intend fitting one or two of our engines with them as a trial, and will see how far they help to add to the comfort of the men, and I will let you know the result as early as possible.

Endorsed by G. SIBLEY, ESQ., Chief Engineer, East Indian Railway,—No. 1087, dated Calcutta, the 9th May 1870.

FORWARDED to the Chairman, Board of Agency, in continuation of this Office No. 978 of 2nd instant.

From the Assistant Secretary to the Government of the Punjab, Public Works Department, Railway Branch, to the Offg. Secretary to the Government of India, Public Works Department,—No. 2096, dated Lahore, the 27th May 1870.

I AM desired to acknowledge the receipt of your letter No. 615R, dated 5th April 1870, suggesting that the attention of the Punjab Railway officials be invited to the necessity of protecting, by every means in their power, railway travellers and servants from extreme heat in trains, and in reply to forward copies of the papers detailed in the margin, which will acquaint the Government with the steps that have been taken in the matter.

Note by Deputy Consulting Engineer, dated 27th May 1870.
* Agent's, No. 2208, dated 26th May 1870. (Not published.)
Minutes of Meeting held on 27th April 1870.
Minutes of Meeting held on 14th May 1870.

2. From the papers it will be observed that the railway authorities have at present been wholly unable to suggest any practical expedient for reducing the extreme temperature that prevails in the carriages during the summer, but that further experiments are being conducted with this end in view, the result of which will be further reported to the Government of India.

Note by the Deputy Consulting Engineer on Government of India's letter No. 615 R, dated 5th April 1870,—dated Lahore, the 27th May 1870.

THE subject of the protection of railway travellers from heat was considered at two meetings held on the 27th April and 14th May, but at neither of these meetings was any plan brought forward which was found, on experiment, to be capable of being practically adopted.

2. As regards the addition of an upper roof to the third class carriages, it is doubtful whether in a carriage with open sides any diminution of temperature can be effected by this means. In experiments made in one of the sidings in the Lahore Station-yard, I was unable to observe any difference exceeding a degree between a single-roofed third class carriage with open sides, a single-roofed third class carriage with fixed venetians, the lower compartment of a double-storied third class, and a double-roofed guards' van. The difference in the temperature as shown by the thermometer when hung in similar positions in the various carriages was less than the difference when hung in different places in the same carriage. Unless some very decided difference can be shown to result from the additional roof, I should be unwilling to see the estimated amount of Rs. 28,800 expended for this purpose.

3. The experiment of fitting a tattie to a passenger carriage has been tried on these railways. The tattie was fixed in an opening made for the purpose in the front end of the carriage, and watered by a bheestee sitting on a low sided truck in the train in front. The effect was that, after a very short run, the tattie got choked with dust. But apart from the trouble of keeping the tattie clean, there would exist an almost insuperable difficulty in keeping the tatties wet were they generally employed. No practical self-acting method appears yet to have been devised without requiring an extravagant supply of water, and to employ the passenger himself to wet his own tattie is hardly feasible. Were the carriage unoccupied, or were the passengers to fall asleep, the tattie would most probably be soon on fire.

The expense of the arrangements, the liability of the tattie when dry to catch fire, the stoppages at stations required to fill the tattie tanks and clean or change the tatties, the waste of motive powers in hauling so much additional weight, are objections sufficiently grave to discourage the use of tatties in carriages, even were the Company's Medical Officer in favor of, instead of opposed to, their adoption on sanitary grounds alone.

4. To subject drivers, guards, and firemen, &c., to the effect of a tattie would, even if practicable, expose them to constant and violent changes of temperature, far more injurious in its consequences than mere heat, the detrimental effect of which can be greatly mitigated, if not entirely removed, by the simple expedients published last year by Dr. Plank.

5. At the first meeting held on the 27th April, the Chief Engineer pointed out that the number of deaths of passengers in carriages during the cold weather of 1868 was actually double of the number during the six hot months of the year, and this remarkable fact is certainly supported by the mortuary returns of the Punjab, so far as showing that the mortality from April to September does not exceed that from October to March.—(*Vide* Table accompanying.)

6. But even if the risk of life is not increased by extreme heat, the object of decreasing the temperature in railway carriages is one so obviously desirable that no efforts will be spared by the Punjab Railway authorities to attain it if practicable. But that this end will be achieved, as long as English models are slavishly adhered to in the construction of carriages, I consider more than doubtful. The construction of the present carriages, small in themselves and divided still further into separate compartments thus necessitating a cooling apparatus for each compartment, and a consequent multiplication of parts, increases the difficulty of cooling the carriages to such an extent that the question becomes one rather of a better construction of stock than of inventing a cooling apparatus which would be worth while to apply to a carriage on an American model.

7. At present I am unaware of any expedient which promises to be more successful than the American plan of forcing the air entering the carriages through a spray of water, thus both cleaning it from dust and cooling it, being both self-acting and requiring a minimum of water.

Mortuary Returns of the Punjab during the three years—1866, 1867, *and* 1868.

Months.	1866.	1867.	1868.	Total.
October	16,909	33,668	21,667	72,244
November	17,975	28,478	25,011	71,464
December	21,826	25,656	20,488	67,970
January	15,632	20,746	43,464	79,842
February	13,754	15,812	18,861	48,427
March	14,463	16,366	19,405	50,234
Total for six cold months ...	100,559	140,726	148,896	390,181
April	17,636	20,368	17,282	55,286
May	18,764	29,616	27,702	76,082
June	17,900	30,269	25,624	73,793
July	12,750	27,505	20,415	60,670
August	12,591	26,787	17,887	57,265
September	17,589	31,134	18,905	67,628
Total for six hot months ...	97,230	165,679	127,815	390,724

No. 20P—20D of 1870.

PUNJAB AND DELHI RAILWAYS.

Extract from the Proceedings of a Special Meeting held on the 27th April 1870, to consider the observations contained in letter No. 615 R, Government of India, Public Works Department, dated 5th April 1870, on the subject of protection from heat of passengers and servants of Railway Companies in trains during the hot season.

Present:

Major-General S. A. Abbott, *Agent.*

L. Conway-Gordon, *Dy. Consg. Engr. for Railways, Punjab.*

R. Bocquet, *Locomotive Superintendent.*

A. Saunders, *Assistant Traffic Manager.*

The mortuary returns of railways for 1868 having been read, show deaths, on all lines, as follows:—

Six cold months ... {November, December, January, February, March and April ...} at 62

Six hot months ... {May, June, July, August, September, and October ...} at 31

I.—The Locomotive Superintendent represents that cost of double roofs to third class carriages would be about Rs. 150 each, and for seventy-four of the Punjab and one hundred and fifteen of the Delhi line the cost would be Rs. 11,100 + 17,700 = 28,800.

II.—That to supply the tattie arrangement to first and second class carriages at about Rs. 96 each, the cost for twenty-six of the Punjab and forty-seven of the Delhi line would be Rs. 2,496 + 4,518 = 7,014 on the plan produced. Proposes an angular tattie to project beyond the window, moveable at pleasure, to be watered by a flexible tube at will of passenger; but his opinion is decidedly against.

It will also be a source of great sickness consequent on sudden changes of temperature, and would be very liable to catch fire, and to keep clean of dirt or dust, would require to be submerged under water, or a hose played upon them about every 30 miles run.

It would also add a weight of half or two-thirds of a ton weight of water to each passenger carriage, representing seven to eight passengers without luggage.

Locomotive Superintendent thinks that hats and *kummarbands* for drivers should be insisted upon, but particularly objects to drivers having tatties on the engines. He would like to have the Medical Officer's opinion on the subject.

The general impression of the meeting is, that tatties are impracticable, but think—

1*st*, that medical opinion should be taken;

2*nd*, that two third class carriages be subjected to experiment of thermometer, one with and another without double roof;

3*rd*, that experiment be made according to two proposals put forward by Messrs. Bocquet and Saunders, and the subject be adjourned for further consideration.

(True Extract.)

L. CONWAY-GORDON,
Dy. Consg. Engr. to Govt., Punjab.

S. A. ABBOTT, *Major-General,*
Agent, Punjab and Delhi Railways.

No. 21P—21D of 1870.

PUNJAB AND DELHI RAILWAYS.

Extract from the Proceedings of a Special Meeting held in continuation of Meeting of the 27th April 1870, dated Lahore, the 14th May 1870.

Present:

Major-General S. A. Abbott, *Agent.*

L. Conway-Gordon, *Dy. Consg. Engr. for Railways, Punjab.*

G. Stone, *Officiating Chief Engineer.*

R. Bocquet, *Locomotive Superintendent.*

G. Finch, *Auditor.*

H. P. Ashworth, *Store-keeper.*

A. Saunders, *Assistant Traffic Manager.*

Read—

Letter of 4th May 1870, from Dr. C. M. Smith, Consulting Physician to the Punjab and Delhi Railways, reporting that he considers tatties to railway carriages impracticable, and that if they could be worked, they would prove more prejudicial than otherwise; but suggesting more ventilation by through draft fore and aft, and that drivers and stokers should wear good *solá hats* and *kummarbands*.

Read also—

Locomotive Superintendent's letter No. 88 of the 11th May, reporting as follows:—

Two descriptions of tatties were applied to a carriage with a trough above, and flexible tube to be used by the passengers.

While in motion the cooling effect was good; but on stopping at a station, the carriage was most uncomfortably hot and steamy, and one tattie caught fire the first half hour.

Proposes, however, to make an experiment with cloth on rollers, revolving in a water trough.

Is opposed to the cutting up of the ends of the carriages as suggested by Dr. Smith, and adds that, if through draft was so obtained, the passengers would suffer from dust, sparks, &c., which would more than counteract any benefits of increased current of air.

Locomotive Superintendent has not made the experiment with thermometer on the third class carriages; but Agent is informed that the experiment made by the East Indian Railway, gave a difference of 1½° in favor of double roof.

No. 174 P—215 D.

RESOLVED that this meeting is fully impressed with the belief that the application of tatties, or any substitute for them, is impracticable; and if practicable, would endanger the health and safety of the passengers.

That under the pressure put upon the Company to exercise economy, the addition to the third class carriages of a second roof, at a cost of Rs. 28,800 would not be compensated for by a diminution of 1½° of temperature to that class of passengers, who, when travelling, are ordinarily content with a thin umbrella or a *sirkee* tattie, or, as in the Government Bullock Train, with a thin canvas cover.

The meeting considers that drivers, firemen, and guards should be made to wear thick head-dresses of approved material and waist bands, and that the Locomotive Superintendent and Traffic Manager be instructed accordingly.

(True Extract.)

S. A. ABBOTT, *Major-General,*
Agent, Punjab and Delhi Railways.

From the Acting Secretary to the Government of Bombay, Railway Department, to the Offg. Secretary to the Government of India, Public Works Department,—No. 790, dated Bombay Castle, the 1st June 1870.

IN reply to Resolution No. 618R of the Government of India, I am directed to inform you that the matter of protecting railway passengers from heat during the hot season is still under discussion with the railway authorities, but that there has not been time yet to carry out the necessary alterations.

2. As regards existing stock, there will probably be a little difficulty in designing an efficient tattie; the attempt was made on a first class family carriage on the Great Indian Peninsula and proved a failure. In the second class carriages, the proportion of European travellers is so small that there would hardly be a demand for such a convenience.

From the Government of India, Public Works Department, to the Acting Secretary to the Government of Bombay in the Public Works Department,—No. 1115 R, dated Simla, the 23rd June 1870.

I AM directed to acknowledge receipt of your letter No. 776, dated 30th May 1870, trasmitting a copy of a plan of proposed sleeping-carriages for the Great Indian Peninsula Railway, with estimate for constructing 14, amounting to Rs. 1,05,700, and requesting that early sanction to put the carriages together may be given, as the frames, now in Bombay, are liable to injury during the monsoon, and as it is expected that increased traffic on the extended railway will render more passenger carriages necessary.

2. In reply, I am directed to state that, although a six-passenger unit compartment is not likely to afford, generally, so much privacy as is usually looked for by English travellers, the proposed arrangements for 12 passengers, and the interior conveniences shown on the tracing, appear to be commodious, nevertheless the Governor General in Council is disappointed with the design. The attention of all railway authorities in this country was lately forcibly drawn to the want of protection of passengers travelling in the hot weather, and, judging from the tenor of your letter No. 790, dated 1st June, the Government of India believed that both the Government of Bombay and the Agents of the Railways in that Presidency were impressed with the necessity of remedying obvious deficiencies in the passenger carriages. An excellent opportunity is afforded now that a proposal to build 14 new carriages, expressly for long journeys, is brought forward, but the old pattern is still closely adhered to, although a decidedly improved distribution of the partitions and sleeping berths is designed.

3. The ill-effects of vibration, noise, heat and dust are felt very severely during the long journeys taken by European travellers in India. The inconveniences experienced from these annoyances (heat excepted) may, it is known, be reduced by the introduction of swivelling trucks beneath the floor of the carriage by extra springs, clamped close-fitting windows and ventilators, by use of modern improvements in India rubber, and by filtration of air through water. The fact that the frames of the vehicles to be erected are already made, may forbid the adaptation of any of the special contrivances adverted to; but the matter is so important that it is well worthy of consideration whether it would not be expedient to use these frames in some other way, and adopt a totally new design for the required carriages. This point, I am to request, may receive the attention of the Government of Bombay and the Railway Officers.

4. But the inconveniences which the suggested modification of design would remove are minor annoyances compared with the suffering and even danger resulting from excessive heat. To protect passengers from the sun, carriage-builders have remained content with the simple expedient of a double roof and sun-shade, but these are insufficient, and more is required. Artificial means of cooling carriages may certainly be applied, be the design what it may, and if the existing carriage frames must be utilized in the manner proposed by the local authorities, it ought not to be difficult to arrange the means of introducing artificially cooled air.

5. With the above remarks, and trusting to the Government of Bombay to see that the best attention is given to the introduction of devices for the protection of passengers from heat, the Governor General in Council instructs me to convey sanction to the erection of these 14 new carriages. Copies of papers and plans, explanatory of modifications in passenger stock on the American model, recommended by Major Taylor, Consulting Engineer in Bengal, are herewith sent for consideration. The Government of India have no doubt that a composite carriage may be designed on bogie trucks, with a proper proportion between the net and gross load, while the increased width obtained by abolishing side-doors opening outwards, will admit of very much improved accommodation being afforded to the occupants. But as to the interior arrangements for privacy, the Government of India are disposed to think that the public will prefer the greater seclusion afforded by carriages on the English model, and they see no reason which should militate against their being ventilated and cooled by proper appliances as readily as carriages on the American model, if not with more facility.

6. This sanction has been registered as No. 12 B—R of 1870.

From the Acting Secretary to the Government of Bombay, Public Works Department, to the Officiating Secretary to the Government of India, Public Works Department,—No. 961, dated Bombay Castle, the 7th July 1870.

I AM directed, in reply to your letter No. 1115R, dated 23rd ultimo, to observe that the plan of the sleeping carriages, forwarded to you with my letter No. 776 of 30th May 1870, was prepared in England, and that the carriages were built at Home to that design.

2. The Railway Company are not unwilling to put up tatties, or introduce any other devices that can be suggested for the comfort of their passengers, but they have not yet settled on any design for tatties, and their attempts in that direction have hitherto been failures. Your letter has been communicated to them, and this Government will endeavour to carry out the wishes of the Government of India, as far as they possibly can do; but they fear that, with the exception of tatties, it is not now possible to do anything to add to the conveniences of the carriages that are about to be put together.

Resolution by the Government of India, Public Works Department,—Nos. 1285—90 R, dated Simla, the 22nd July 1870.

READ again—

Public Works Department Resolution Nos. 614—23R, dated 5th April 1870.
" " " letter No. 1115R, dated 23rd June 1870.

Read also—

Letter from the Government of Bengal, Public Works Department, Railway Branch, No. 1067G, dated 18th May 1870.

Ditto from ditto, No. 1088G, dated 23rd May 1870.

Ditto from the Government of the Punjab, Public Works Department, Railway Branch, No. 2096, dated 27th May 1870.

Ditto from the Government of Bombay, Public Works Department (Railway), No. 790, dated 1st June 1870.

Ditto from the Government of Bombay, Public Works Department (Railway), No. 961, dated 7th July 1870.

OBSERVATIONS.—Early in April last, the Governor General in Council invited the attention of Railway Companies through the Local Governments to the urgent necessity for devising some means for the better protection, from extreme heat, of passengers and of Railway servants employed in working and running trains during the hot season. No definite measures were enjoined, as His Excellency in Council preferred to leave complete scope to the ingenuity and resource of the talented body of men whose services are at the disposal of the Railway Companies in India, and trusted that the Agents would themselves be solicitous on the subject, and would see that the matter was at once taken up with zeal and intelligence by the heads of departments concerned. The obvious advantage which would result from the application of tatties to the windows of carriages and break-vans was, however, alluded to, and special attention was directed to the cabs of the locomotive engines. It was the especial desire of the Government that something should be done during the then impending hot season, as well as hereafter, to mitigate the discomfort, suffering, and danger experienced from extreme heat in travelling by railway.

2. The responses to the invitation of the Governor General in Council are most disappointing, and, in one case, that of the East Indian Railway are characterized by apparent indifference.

The Bombay Government reports that difficulties are experienced, that one attempt has failed, that the subject was still under discussion, but that there had not been time to carry out the necessary alterations. Nothing has, in fact, been done, but there seems to be a prospect of something being done some day.

In Bengal, the Locomotive Superintendent of the East Indian Railway appears to be unable to recommend any improved or additional means of protection for his subordinates. The Chief Engineer, without sufficient reason, appears to assume that the public would not pay any extra charge for the cooling of their carriages. In this opinion His Excellency in Council does not concur; and His Excellency in Council fears that the dissatisfaction and discomfort of the public will not be relieved by the knowledge that the Chief Engineer is not in the habit of using any cooling apparatus in his own private carriage.

The Government Controlling Officer dwells upon the inconvenient form of the existing carriage-stock, and makes proposals for its improvement. This is doubtless a matter for serious consideration, but such improvement must be a work of much time, as well as of very heavy expense unless new stock

be required. What is wanted is the immediate application of some mechanical contrivances capable of easy and general introduction.

In the Punjab experiments have been tried, and others are being conducted. The opinion is recorded that tatties are impracticable, that they are objectionable on sanitary grounds, and that considerations of economy forbid the application of double roofs to third class carriages. The one measure ordered is, that railway servants liable to exposure shall be compelled to wear a suitable head-dress and a sash round the waist. The exposure and suffering entailed on people travelling otherwise than by rail, are referred to as proofs that improvements in the direction indicated are not absolutely demanded in railway carriages; and the trouble and expense of alterations are dwelt upon as if such considerations were of primary importance, compared with the saving of human life. The facts that people suffer and die elsewhere, and that the rate of mortality in some parts of India is less in the hot than in the cold season, appear to be accepted as a sufficient reason for regarding, as not of pressing importance, the removal or mitigation of such a serious cause of suffering and mortality as that under consideration.

3. Whatever may be the habits of individuals, or the possible risks of exposing either passengers or railway servants to alternations of temperature by the adoption of devices for its reduction, there should be no question that such contrivances should be at command, even if it does not suit everyone to employ them; and the opportunity of obtaining the verdict of the travelling public as to their efficacy and, if efficient, as to the prudence of taking advantage of them, should at least be afforded. So far as can be ascertained from the papers, not even a single carriage, fitted with appliances designed to secure the object in view, has been placed at the disposal of the public experimentally.

4. The Governor General in Council would fain hope that the interests of humanity have not been intentionally disregarded by anyone in this matter. Be this as it may, the hot season of the present year has been lost, and the action taken to meet the expressed wishes of the Government has been so inadequate that, so far as this side of India at least is concerned, the subject can no longer be allowed to rest wholly with railway authorities whose coöperation has, at the best, been so lukewarm. Measures should therefore be at once taken to have the various means of effecting the object in view fully considered by competent persons, so that, when the season permits, experiments may be initiated and conducted under their supervision. It is, in the opinion of the Government of India, the undoubted duty of the Railway Companies to prosecute such experiments at their own charges; but rather than risk that another hot season shall come and find the question in the same unsatisfactory state as at present, the Governor General in Council has resolved to authorize a grant of public money not exceeding Rs. 5,000 for the purpose. This expenditure should be limited to the actual cost of experiments. No additional salaries can be granted for such a purpose. The Oudh and Rohilkhund Railway Company is probably as much interested in the practical solution of the question at issue as any other Company; and the Chief Commissioner of Oudh should be requested to arrange for the formation of a Committee, consisting of an Officer of the Consulting Engineer's Department, and such Officers of the Railway as the Agent may nominate, under the presidency of Major-General Beadle himself, if agreeable to him. This Committee should enter on the consideration of the subject without delay, and, as positive conclusions are arrived at, report them for information, bearing in mind that the chief essential is, that the question shall be practically advanced in time to admit of action being taken on other railways before next hot season.

ORDER.—Ordered, that this Resolution be communicated to the Governments of Bengal and Punjab for information.

Also, to the Chief Commissioner of Oudh for information and further needful action.

Also, to the Financial Department for information, with intimation that no additional funds will be required unless the ordinary State grant for Guaranteed Railways should be found insufficient to meet the charge.

Also, to the Governments of Madras and Bombay for information.

Also, that it be published in the Supplement of the *Gazette of India* with the connected papers.

No. 30 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, AUGUST 6, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

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No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

REPORTS ON THE CONDITION OF INDIAN IMMIGRANTS IN THE COLONIES OF GRENADA, ST. VINCENT, JAMAICA, TRINIDAD, AND BRITISH GUIANA.

Public.

No. 68.

INDIA OFFICE;

London, the 28rd June 1870.

To His Excellency the Right Hon'ble the Governor General of India in Council.

MY LORD,—In continuation of my despatch No. 58, dated the 31st ultimo, I forward, for the information of your Excellency in Council, copy of a letter from the Colonial Office, with its enclosures, transmitting several reports on the condition of Indian immigrants in the Colonies mentioned by Mr. Herbert.

Dated 31st May 1870.

2. The report for Grenada for the period ending 31st December 1869, was transmitted with my despatch above-cited.

3. I also forward copy of an Ordinance* which has been enacted by the Governor of Trinidad, relating to the feeding of indentured immigrants in the Colony, as well as copy of the report† on immigration for the year ending 30th September 1869, together with a letter‡ from the Chairman of the Emigration Board on both subjects.

* No. 3 of 1870.

† Dated February 1870.

‡ Dated 20th May 1870.

I have, &c.,

ARGYLL.

From A. MUNRO, ESQ., to His Excellency LIEUTENANT-GOVERNOR MUNDY, &c., &c., &c.,—No. 18, dated Grenada, the 27th February 1869.

I HAVE the honor to transmit to your Excellency the Immigration Agent's report on the state and condition of the Indian immigrants in this Island to the 31st December last. I am glad to observe that it exhibits a favorable aspect, as compared with the returns for the same period of the preceding year.

2. Mr. Munro has again drawn attention to the inadequacy of his salary, from which he has to disburse the expense of horse keep. I have no doubt that this subject will receive every consideration when the new Immigration Bill comes before the Legislature.

From G. G. MUNRO, Esq., Immigration Agent, to the Colonial Secretary,—dated Grenada, the 20th February 1869.

I HAVE the honor, whilst reporting upon the immigration service for the year 1868, to furnish you herewith the annual return of Indian immigrants who were in this Colony on the 31st day of December last (Schedule A.), with a comparative Statement of the Indians who were in the Island the preceding year, their increase and decrease in 1868, distinguishing those who were in the Colony Hospital under medical treatment, from those who were engaged in agricultural labor on the plantations.

2. *Their numerical Strength.*—According to the semi-annual returns furnished by employers, there were in the Colony on the plantations on the last day of the year 924 men, 368 women, 153 boys, 142 girls, and 87 infants; 17 men and 7 women were in the Colony Hospital, and 4 men in the common gaol, making in all 1,702 Indians.

3. *Their Increase.*—There were no Indians imported during the year, and the natural increase among them was somewhat less than in the preceding year, namely, 23 boys and 30 girls.

4. *Their Decrease.*—There was one vessel despatched to India during the year—the *Lincelles*—with 40 men, 19 women, and 17 children, returning to their native country; and 3 men departed with pass-ports to the neighbouring Colony, Demerara, making in all 79 souls.

The sanitary reports attached hereto (Schedule B.) for the half years ending 30th June and 31st December, exhibit a decrease by deaths of 31 males and 18 females, equal to 2·08 per cent., against the mortality of 50 males and 30 females of the previous year.

This marked decline in the death-rate is owing in great measure to better medical attendance given to the coolies on estates in the large parishes of St. Patrick's and St. Andrews's, one of the beneficial results of the changes effected among the medical staff of the Colony, and also, no doubt, to increased acclimatization among the last imported people by the ship *Countess of Ripon*. The season in the latter part of the year, which is generally wet and sickly, was remarkably dry, and this also may have contributed to this improvement in the sanitary condition of the Indian laborers.

5. *Crimes and Offences.*—There were only 18 commitments of Indians to gaol during the year, against 46 of the previous, namely, 1 violent and 3 common assaults, 2 petty thefts of rum, 1 drunkenness, 8 breaches of contracts (unlawful absence from work), 1 vagrancy, 1 trespass, and 1 debt.

This calendar exhibits a marked diminution also of offences among the Indians, and is indicative of some little advance in civilization. Receiving no moral or religious instruction, this immunity from offences of a more grave character, among a race so regardless of the value of life, is not a little surprising, and may be conclusive of the immigrants in this Colony being under proper control.

6. *The application of Coolie-labor.*—There has not been any change in the rates of wages paid to the Indian laborers, those of the 1st class, from 16 years and upwards, receive 10 pence;

2nd class, from 8 years to 16 years ... ... 8 „

3rd „ children under 8 years .. .. 6 „

per diem; nor do employers avail themselves of the full amount of labour secured to them by law. Saturday is not considered a working day. On some plantations where daily tasks are given, the robust coolie is able to earn from one shilling to one shilling and three pence per diem; but, in general, employers demand the legal number of hours for labor, namely, nine, with which the coolies are better satisfied.

7. *The relation between Master and Servant.*—It is satisfactory to be able to report favorably on this head. A number of the last imported Indians per *Countess of Ripon*, whose first period of indenture expired on 23rd January of the present year, were desirous of changing employers, a privilege extended to them by the 22nd section of the Act No. 230, and had left without giving the legal notice. Their employer having demanded the proper notice, and finding that the immigrants were not benefiting themselves by the change, they were ordered back to their original employer, to whom they will be re-indentured for another year.

With this exception I have had no complaints, but, on the contrary, learn from all parts that the coolies are working steadily whilst engaged in the legitimate service for which they were introduced into the Colony, namely, the development of the resources of the plantations.

8. *The Back Passage.*—I have annexed hereto a return (Schedule G.) of the number of Indians (76) who availed themselves during the year of the right to the return passage to India, and who embarked on the 21st November last. The return exhibits the amount of passage-money payable to the owners of the ship *Lincelles* by this Colony, £869-7-6; the gratuity to the Superintendent Surgeon, £45-2; deposits of their earnings by the emigrants into the local Treasury for remittance to Calcutta, £804-14-0; together with amount of gold, £424, and value of jewellery, £48-10 carried with them on board, presenting a feature in the immigration service alike creditable to the immigrants as to the Colonial Government.

9. *Service-expired Indians remaining.*—A greater number of the coolies per *Fulwood*, 1858, whose ten years of industrial service expired on 21st May last, had given the notice for the return-passage; but, upon the passing of the County Act No. 390 by the Legislature on the 4th August last (which also secured the back passage to such of them as were wishful of

remaining in the Colony other five years), a large number withdrew such notices and accepted the bounty offered. Accordingly, 131 males and 81 females of this batch received bounties, namely, adults £10, and non-adults, above 10 years, £5 each, amounting to £1,865 paid out of the immigration fund, and who have been re-indentured in terms of the Act, and will annually pass under indentures for a further period of five years—a measure which must prove as beneficial to the immigrants as to the Colony in preventing the former from contracting idle and roving habits, and in securing for the latter their labor on the plantations.

The Act No. 390, however, although extending to the Indians the right to the back passage, makes no provision whatever for contributions to the immigration fund by employers as the Act No. 256 does, namely, the payment of 29-2 on re-indenture. I do not know whether this is an omission on the part of the framers of the Act, but I consider it my duty to call the attention of the Executive to the subject, involving as it does a large draft hereafter on the immigration fund for the service-expired Indians per ships *Maidstone* and *Fulwood*.

10. *Service-expiring Indians.*—On the 18th June of the present year, the Indians who arrived in this Colony in the ship *Jalawar*, 1859, will have completed their term of ten years' industrial service. Of this batch there were on the plantations 133 men, 57 women, 41 boys, 32 girls, and 9 infants, the greater number of whom have claimed the right to the return passage. I do not, however, expect that more than 16 men and 8 women with 2 children will leave the Colony. I shall, for the information of the Executive, in due time prepare a nominal roll of those intending to return homeward, when the immigrants have made the necessary preparatory arrangements for a supply of warm clothing for the voyage.

11. *Insufficient provision for the Immigration Service.*—To the honor of Her Majesty's Government, I do not think that it often occurs that a public servant is permitted in vain to call attention as often as I have done to the disbursements which he has found indispensably necessary, to make to enable him properly to discharge the duties of his office and in obedience to the order of his official superior. There is nothing in the immigration law from which any obligation on me to purchase and keep horses for this service could be implied. Yet, for upwards of three years, it has been necessary for me to disburse out of a small salary of £250, not less than £70 per annum: trusting that the Colonial Legislature, seeing the necessity for the outlay, would reimburse me.

I have by memorial repeatedly, through the Executive, brought this claim for reimbursement before the House of Assembly; but, composed as that body is of those with whom I have had occasion to come in contact whilst protecting the Indian immigrants, my chance of obtaining relief is slender; and as I cannot allow the service to suffer by discontinuing the keep of two horses, and consequently those periodical inspections of the immigrants and their habitations on the plantations which are found indispensable, I am constrained to solicit that the subject may be brought specially under the notice of His Grace the Earl of Granville, who presides over Colonial affairs, fully persuaded that His Grace will not allow a public servant to become embarrassed by disbursements which are not binding on him, although found so essentially necessary for the efficient working of immigration service of the Colony.

From SIR J. W. C. MURDOCH, to SIR F. ROGERS, BART., &c., &c., &c.,—dated Emigration Board, the 27th April 1869.

I HAVE to acknowledge the receipt of your letter of 19th instant, with a despatch from the Lieutenant-Governor of Grenada, enclosing the report of the Immigration Agent of that Island for the six months ending 31st December last.

2. It appears from this report that the number on estates on 31st December last was 1674; that 24 were in the Colonial Hospitals, and 4 in Jail; that there returned to India, in the *Lincelles* in November, 76, and that 3 had emigrated to British Guiana. The deaths during the six months had been 29, equal therefore to a mortality of 1·60 per cent.

3. The coolies are said to be working steadily, and their relations with their employers are satisfactory. The wages paid are to first class laborers 10*d.* a day.* Children between 8 and 16 years, 8*d.*; and to children under eight years, 6*d.* a day. Of those who had become entitled to back passages, and who had given notice of their intention to claim them, 131 males and 81 females withdrew their notices on the passing of the Act granting bounties on re-engagements.

* i. e., those above 16 years of age.

4. The report as regards the coolies is satisfactory. As regards the administration of the immigration law, the Agent again calls attention to the inadequacy of his salary, and to the hardship of leaving him to depend for any increase of it on the good-will of the Legislature, composed almost exclusively of planters. On this point, I would beg to refer to my report of 12th of May 1868.

5. The Administrator, in transmitting the Agent's report, says that the subject will receive consideration when the new Immigration Bill comes before the Legislature. Nevertheless, if Earl Granville should be of opinion that the present remuneration of the Immigration Agent (£250 a year) is inadequate, having reference to the expenses which, he says, he is compelled to incur in the keep of horses for the proper performance of his duties, the expression of his Lordship's opinion to that effect would no doubt assist the Agent very much.

From S. WALCOTT, Esq., to SIR F. ROGERS, BART., &c., &c., &c.,—dated Emigration Board, the 10th May 1870.

I HAVE to acknowledge your letter of the 2nd instant, enclosing the copy of a despatch from the Governor of Grenada with the report of the Immigration Agent of the Colony for the year ended 31st December 1869.

No. 30, dated 22nd March 1870.

2. It appears from this report that the number of Indian immigrants in the Island was 1,702, located on 33 sugar and six cocoa estates; that the births in the year were 59, and the deaths 42: one of the deaths, that of a woman of dissolute habits, was found by a Coroner's Jury to have occurred from starvation. On this the Immigration Agent observes that she was within reach both of food and medical aid, had she sought for them.

3. There were 30 convictions in the year, all for petty offences, including five for breaches of contract.

4. There were no Indian immigrants introduced during the year; but nine coolies, who had gone to Trinidad in the hope of bettering their condition, returned to Grenada and resumed their places among the laboring population.

5. In June last, of the 299 immigrants who arrived in the ship *Jalawar* in June 1859, and whose term of service had expired, 187 commuted their right to back passages for bounties, amounting, in the whole, to £1,642-10, and were re-indentured for one year. Only three men and one girl were waiting for back passages to India, and until an opportunity of sending them home occurs, they will receive the compensation for delay provided by the 49th section of the amended Emigration Act.

6. The satisfactory features in the Agent's reports are the increase of births over deaths,—the former being at the rate of 2·46 per cent. against 2·38 per cent. of the latter, and the satisfactory relations which exist between employers and laborers.

7. The papers call for no action or remark on the part of the Secretary of State; but I would suggest that copies be forwarded for the information of the Secretary of State for India, in reference to the remarks contained in Mr. Merivale's letter to the Colonial Office of the 18th March last.

No. 581, dated Government House, St. Vincent, the 1st April 1869.

From—GEORGE BERKELEY, ESQ.,

To—His Excellency LIEUTENANT-GOVERNOR MUNDY, &c., &c., &c.

I HAVE the honor to transmit the report of the Immigration Agent for the half year ended 31st December 1868.

This document, together with the accompanying returns, presents, I trust, no unfavorable contrast to the previously existing satisfactory state of things in connection with the scheme of immigration in this Island.

Dated St. Vincent, Immigration Office, the 29th March 1869.

From—JAMES H. BROWN, ESQ., Immigration Agent,

To—The HON'BLE E. LABORDE, Colonial Secretary.

I HAVE the honor to present five Schedules,* prepared in usual form, shewing the details of immigration for the half year ended 31st December last.

* A, B, C, D, E.

These Schedules tell so plainly for themselves as to leave little room either for comment or suggestion.

I. *Schedule A.*—Deaths—shews 11, 5 adults and 6 infants; 1 infant died on Orange Hill, three days after birth, from tetanus. The one styled an infant on Langley Park was a boy of five years, and succumbed to low fever. One was a premature birth; one died from convulsions in teething, another from tetanus, and one from ulceration.

Upon the various estates the medical visits were regularly performed, and competent sick nurses are provided.

Amid the adults, there have been five deaths; and when it is considered that two arrived in the Colony with all the symptoms of their disease, consumption, and that another fell a victim to a disease beyond medical control, dirt-eating, I am justified in remarking that the facts speak highly for the sanitary state of the plantations, the care of the employers, and the judicious administration of all regulations. I may here record that, amongst the largest number of coolies placed upon any property, *viz.*, 48 on Orange Hill, in January 1866 (15 of whom were sickly), no death has occurred.

	Total indented.
Coolies and children ...	717

II. *Schedule B.*—Births—gives the number as 23, an increase of 12 as compared with deaths.

III. *Schedule C.*—To account for the decrease of earnings alluded to, I would mention that, as a body, the people last arrived per *Newcastle* are not so industrious as those received per *Countess of Ripon*, and also that the latter half of the year only comprises a small portion of the sugar-making season, when high wages are earned about the mill-yards.

IV. *Schedule D.*—Crime—gives 15 cases, but none of an aggravated character.

Africans	24
Portuguese	3

V. *Schedule E* shews the number of Africans and Portuguese under indenture on 31st December 1868, as compared with numbers on the previous 30th of June.

VI. I am happy to report, as formerly, that the most satisfactory relations continue to exist between the immigrants and their employers, and that I have not had occasion to complain of any evasion of the law.

Schedule A.

Deaths.

NAME OF PLANTATION.	Male.	Female.	Cause of Death.
Orange Hill	.....	1 Infant ...	Tetanus.
Langley Park ...	1 Infant ...	.....	Spasms.
Unions	.....	1 Ditto ...	Premature birth.
Ditto	.....	1 Ditto ...	Tetanus.
Ditto	.....	1 Ditto ...	Ulceration.
Ditto	1 Adult ...	.....	Chronic disease of disgestive organs.
Argyle	1 Ditto ...	.....	Diarrhœa.
Ditto	1 Ditto ...	.....	Consumption.
Calder	.....	1 Ditto ...	Convulsions.
Belleacre	1 Ditto ...	.....	Debility caused by eating dirt.
Pembroke	1 Ditto ...	.....	Consumption.
	6	5	
Total...	11		

Schedule B.

Births.

NAME OF ESTATE.	Males.	Females.
Tourama	.....	2
Rabacca	1	.....
Lot 14	.....	1
Orange Hill	.....	2
Unions	3	1
Argyle	1	.....
Carapan	1	4
Montrose	3	.....
Pembroke	1	.....
Rutland Vale	2	.....
Mount Wynne	.....	1
	12	11
Total	23	

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Indentured Indian Immigrants in this Colony on 31st December 1868, with Deaths, with particulars of

Name of Estate.	Nos. on the 30th June 1868.	Births to 31st December.	Deaths to 31st December.	Removals in half-year.	Nos. on the 31st December 1868.	No. of days labor performed.
Tourama	49	2	...	...	51	4,048
Orange Hill	89	2	1	...	90	6,896
Rabacca	39	1	...	...	40	4,034
Lot 14	59	1	...	...	60	5,408
Langley Park	50	...	1	...	49	3,644
Unions	66	4	4	....	66	6,582
Argyle	72	1	2	2 from	73	4,032
Amos Vale	24	...	...	14 men indented	24	1,477
Calder	19	...	1	...	18	1,598
Carapan Rivulet	50	5	...	...	55	4,950
Belleacre	27	...	1	...	26	1,982
Montrose	27	3	...	...	30	2,955
Rutland Vale	33	2	...	...	35	2,102
Mount Wynne	20	1	...	...	21	1,959
Richmond	26	...	...	...	26	1,843
Pembroke	27	1	1	...	27	2,146
Not indented	4	...	Not indented		2	
Peter's Hope	24 { 15 & 9 removed from Mount Wynne.		Peter's Hope ...		15 & 9 } 24	2,078
	705	23	11	2	717	58,634

Increase of 12

VINCENT.

DULE C.

Statement of numbers at end of last half-year, the intermediate Births and Removals, Labor, and Earnings.

Sickness and holidays.	Days of Idleness.	No. of working days in half-year.	Total Earnings. Dollars.	Total Earnings. Cents.	Average earnings.	Remarks.
2,067	764	6,879	623	60	15⅛	For eight cases the payments are in excess of last half-year. For three, they are the same. For the others, they have decreased.
2,104	5,114	14,114	836	15	12⅛	
390	40	4,464	494	62	12¼	
2,613	88	8,109	775	90	14	
3,107	.....	6,751	564	87	15½	
2,861	385	9,828	946	54	14½	
3,561	2,183	10,676	1,047	29	21¼	
945	958	3,380	237	40	16	
204	410	2,212	229	71	14⅓	It is to be remarked that the gross numbers on each plantation comprise 1st, 2nd, and 3rd class laborers and infants.
1,800	1,100	7,350	743	03	15	
885	157	2,734	256	37	13	
1,127	.....	4,082	398	64	13½	
1,130	772	4,004	328	88	15⅝	
308	402	2,669	382	02	15	
1,165	424	3,432	378	60	20	1st Class ... ... 10*d.*
890	284	3,320	290	00	13½	2nd ,, ... 5*d.* 3rd ,, ... 3*d.*
915	775	3,768	301	24	14½	The number of children who are effective for field labor is generally large.
25,272	13,856	97,762	8,734	86		No immigrants received during half-year.

by Births.

SCHEDULE D.

Crime.

Nature of Offence.	No. of Cases.	Remarks.
Breach of contract	8	*Nil.*
Using threats	4	These occurred between coolie and coolie.
Assault	1	Ditto.
Debt	2	Ditto.
	15	

SCHEDULE E.

Indented Africans and Portuguese Immigrants on Estates, *30th June* 1868, *&* *31st December* 1868.

Name of Plantation.	Nos. on Estates on 30th June 1868.		Passed from Indenture.		Nos. on Estates on 31st December 1868.	
	Africans.	Portuguese.	Africans.	Portuguese.	Africans.	Portuguese.
Belle Vue	7	...	...	...	7	...
Sans Souci	3	...	...	...	3	...
Argyle	8	3	...	3	8	...
Union	...	3	...	...	...	3
Rabacca	3	...	...	...	3	...
Amos Vale	...	2	...	2	...	...
Camden Park	6	...	6	...	...	...
Rutland Vale	1	...	...	...	1	...
Ratho Mill	2	...	...	...	2	...
	30	8	6	5	24	3

Dated Emigration Board, the 8th May 1869.

From—T. W. C. Murdoch, Esq.,

To—Sir F. Rogers, Bart., Colonial Office.

I have to acknowledge your letter of the 1st instant, with a despatch from the Lieutenant-Governor of St. Vincent, enclosing the report of the Immigration Agent of that Colony for the six months ending 31st December last.

2. The number of immigrants onestates on 30th June 1868 was 705. During the six months there were 23 births and 11 deaths, making the number on estates on 31st December last 717. The death-rate was, therefore, 1·51 per cent. rather more than in the previous half-year, when it was only 1·12. Considering, however, the unhealthy condition in which a portion of these

people arrived in the preceding year, this must be regarded as satisfactory. The earnings of the laborers during the last half-year had not been so large as the previous, the portion of crop time comprised in the second-half of the year being less than in the first. There was but little crime among the immigrants, and the relations between them and their employers are said to be very good.

3. On the whole, the report may be considered altogether satisfactory.

No. 864, dated Jamaica, Immigration Office, the 18th October 1869.

From—H. B. Shaw, Esq., Acting Agent General of Immigration,

To—The Hon'ble E. E. Rushworth, &c., &c., &c.

In handing you the following report on the Immigration Department for the year ending 30th September, 1868, for the information of his Excellency the Governor, I have the honor to state that, in consequence of my having only taken charge of the Department in July of that year, and not knowing a report was required from me, I much fear this report must not only be a brief one, but also in a measure unsatisfactory, as what remarks I have to make on Coolie Immigration belong more properly to the next year's report, 1868-69, than to this one.

I find by the records of this Office that, from 1860 until 1863, there were introduced three thousand, three hundred and six males, one thousand, two hundred and thirty-three females, and ninety-six infants, total four thousand, six hundred and thirty-five coolies; the deaths have been seven hundred and six males, two hundred and twenty-five females, total 931 or 20·8 per cent.; and the births have been one hundred and ninety-seven males, one hundred and seventy-nine females, total 376 or 8·11 per cent. Desertions four hundred and sixty-one males and one hundred and thirteen females, total 574 or 12·38 per cent.

In 1867, during the months of May, June, and July, three ships arrived with coolies from Calcutta, *viz.*, the *St. Hilda*, the *Corona*, and the *Salamanca*, landing here one thousand and ninety-one males, four hundred and ninety-eight females, and thirty-six infants, a total of one thousand six hundred and twenty-five coolies. Of these, since their location up to the 30th September 1868, two hundred and thirty-nine males and seventy-five females have died, a total of 314 or 19·32 per cent., and there are thirteen desertions or eight per cent.

I may here remark that the immigrants by the *St. Hilda* and *Salamanca* were a very fair lot, but the people by the *Corona* were a miserably-diseased and wretched set, and have been an endless source of expense and annoyance to those who were unfortunate enough to employ them.

The deaths amongst them were, as could only be expected, numerous, and those that are left are neither strong, nor ever likely to become good agricultural laborers.

Up to the 30th September 1868, applications for one thousand three hundred and forty-two East Indian immigrants had been received and forwarded to India.

Report on Immigration for the year 1868 *by* Mr. H. Mitchell, *Agent General of Immigrants,—dated February* 1869.

I have the honor to submit for His Excellency's information the following remarks on the annual abstract of quarterly returns, together with such general observations as the immigration system of this Colony for the year ending 30th of September 1868 seems to warrant:—

1*st.*—From the above-mentioned abstract, which was submitted to Council in December last, it appears that the number of Indians embarked at Calcutta for Trinidad during the preceding season was 1,196 men, 518 women, 57 boys, 39 girls, and 30 infants = 1,840 souls. Of these there died on the passage 21 men, 18 women, 5 boys, 4 girls, and 6 infants = 54 souls, giving a death-rate of 2·9 per cent. against which may be placed 16 births at sea.

Two of the ships embarked 623 souls. On arrival they reported six deaths and seven births; altogether the Transport Service appears to have been carefully and creditably conducted.

2*nd.*—*Mortality on Estates.*—This amounted to 405 on an estate's population of 14,693 of all ages, indentured and free, = 2·7, or a trifle under that of last year.

It may be remarked that the mortality of this season when it passed the ordinary percentage was confined to 15 estates, on many others it was singularly limited; thus on 68 estates the mortality was 62 on an indentured total of 4,239 Indian immigrants = 1·4 per cent. and on 28 of these same estates, with an indentured population of 1,154 adults, there was no casualty whatever. It remains to be seen how far the measures initiated this year by the Government of the Colony for feeding the new arrivals, together with the care and co-operation

of the employers, may tend to reduce the average death-rate of the whole body of indentured labor towards such limits. In the Wards of Chaguanas, Oropouche, and St. Patrick's, which were, till within the last few years, considered most unhealthy, the death-rate has fallen even lower than in the Naparimas, and this result has been attributed, and I believe justly so, by the Inspector partly to increased care in the direction of Estates' Hospitals, but principally to the increasing abundance of food, the indentured laborers in the two former Wards having raised more provisions than met their own wants, while in Cedros the old coolies who had finished their contract service, instead of leaving the District, had rented land here and there in small patches and occupied themselves as market gardeners. The fact of the Indian immigrant thus more generally engaging in agriculture on his own account is satisfactory as indicating that growing state of independence which alone will induce him to colonize eventually the land where he has served his contract. In one of the latest constituted Wards of the Island, that of Montserrat, upwards of 30 Indians have settled and purchased Crown lands amounting to between three and four hundred acres. Should this movement continue and any considerable number be induced to follow in their wake or to accept an equivalent in land for their return passage, the Colony may congratulate itself on having made its most important step in securing a permanent supply of labor by erasing or deadening a sentiment more potent than that of caste, and hitherto animating all castes alike, *viz.*, the desire of returning to Calcutta and replacing that desire by the possession of a few acres of land not likely to be soon in demand by any one else.

3*rd*.—The hospitals or Estates' sick houses have now gradually taken their places as part of the household accommodation on all estates employing indentured immigrants. With one or two exceptions they, at present, satisfy the Regulations which preclude the distribution of newly-arrived coolies to all estates on which the arrangements are not in complete accordance with established rule. When a single hospital has been set apart for two or more estates, even when belonging to the same proprietor, the results appear rarely so satisfactory as when each estate has its own hospital, that is to say, the results of treatment in such cases appear to be in favor of the estate on which the General Hospital has been erected.

Whether this be due to the conductor of the central estate being more anxious about his own people, or to the more distant estate sending its patients later, or to their suffering from the transport, does not appear; but the fact is so, and in more than one instance parties having central hospitals have altered that arrangement and erected separate buildings. How far the experience should militate against the proposal to establish District Hospitals, I am not prepared to say; but when a similar proposition was made in the Mauritius, although promising many advantages, it was finallly abandoned as too expensive. This might be expected, for such an institution, on anything like a proper footing and on the scale enforced by the Estates' regulations, would require for Couva and Savanetta alone, with their contract population of 2,000, more extensive accommodation than is now provided in Port-of-Spain for its 20,000 inhabitants; but that such arrangements even if practicable are unnecessary may be gathered from paragraph No. 2, where a population of over 4,000 shows only 1·4 per cent. of death-rate. On analyzing this last more minutely, it appears that, with few exceptions, the estates in this last category rarely number 100 indentured laborers. While, as a rule, the heaviest death-rates occur on estates more densely handed; but this I think merely shows that, as the numbers increase, increasing care is required during the earlier or seasoning years of the coolies' industrial residence, for the two largest estates in the Colony, each numbering individually over 200 contract servants, had a death-rate under two per cent.

That District climate goes for little in calculating the salubrity of any part of this Colony for Indian laborers may be inferred from the fact that one of these estates is in the healthiest District of the Island (Tacarigua) and the other on Mosquito Creek and the Great Lagoon; on another estate adjoining this latter, and, if possible, more unfavorably situated for European constitutions, with a population of over 200, the death-rate was, last year, under three per cent., and during the previous year still lower. As the death-rate ranges much higher among contract laborers during the earlier period of their industrial residence, it is to be hoped that the regulation for feeding newly-arrived contract laborers during the first twelve months of their indenture till they become seasoned to the climate and to the unaccustomed variety of labor required from them, will produce the happiest results, and guard against the well-known tendency of the Indian laborer to hoard his wages at the risk of losing strength and health.

4*th*.—The number of absentees is lower than last year and not much more than half what it was in 1866. Without defining any particular cause for this improvement, it may be supposed to indicate diminished inducements on the part of contract laborers to shirk their engagements. That this is to some extent the case, may be assumed from the fact that indentured servants who have been for years absent on the neighbouring continent, have returned in small batches; among these a family consisting of father, mother, and three sons who, shortly after their arrival from India, were induced to leave the estate to which they were assigned in Trinidad and push their fortunes in Venezuela, have returned, after an absence of three years, to their original employer, by no means satisfied with the results of their experiment. The party who took them away had ensured them higher pay, light work, and above all perfect freedom from indentures. But it seems he sold them to an official of some standing who sent them to work

on his Cocoa Estate, and my informant adds that he so worked for three years without further remuneration than his food and clothing. At the end of three years he was promoted to 30 cents per day, when he took the earliest chance of effecting his return along with the other members of his family. He stated further, that there were some 500 coolies in the District where he lived; some of the Cocoa Estates having from 20 to 25 of these laborers. The laws, too, were remarkably simple, at least as affected coolie laborers; those who did not work were flogged, and those who ran away and plundered the provision grounds were shot.

5*th*.—One curious fact elicited from this man and bearing, if reliable, on a question at present deeply interesting to those who employ Indian immigrants and who look to their continuous introduction as essential to the welfare of this Colony is, that in the district of Venezuela where he lived for three years, there have been no cases of coolies murdering their wives, although the country is in itself most lawless and the number of women under 10 per cent. on an Indian coolie population said to be over 500. The same freedom from bloodshed marked the earlier days of Indian immigration into this Colony, when the ratio of females was under 20 per cent., and this I believe to a certain extent to be the experience of the smaller Colonies, where the introduction of Indian immigrants is yet on a limited scale. Should this evidence hold good on more careful examination, it will go far to shake the prevalent opinion that the violence occasionally shown by the men to the Indian women, is due solely, or in great measure, to the disparity of the sexes, as introduced into the West Indies. As far as can be learned here, adult female life is not much more respected in Indian villages than that of female infants. It has been hitherto a point of hereditary and ineradicable belief with the mass of Indian population, that the man has complete jurisdiction over the wife; on that belief he acts in his own country, and carries his creed along with his labor whithersoever he may migrate. That he should act up to it more frequently now than in the earlier days of immigration is simply due to the fact that the number of coolies has greatly increased, some estates being entirely worked by them—they have now the courage which number gives to the mass—and this allows the development of evil habits, and passions which were formerly restrained, a result not altogether unlikely, when it is known that few respectable immigrants take or even allow their wives and daughters to accompany them over the "Black Water," and the appreciation in which they do hold the females who actually embark may be measured by the speed with which they get rid of them after landing.

There is yet a difficulty which complicates the estimate as to what ought to be the fair proportion of females to males in the system of immigation, and this is the habit common among Indians of indulging in a plurality of wives, when their means permit it. Is any allowance to be made for this disturbing element, which no precaution can control? There is now an Indian undergoing a sentence (for assault) of imprisonment for five years with hard labor, who has four wives. It may be said that he is wealthy, and therefore was entitled to indulge in the custom of his country; but in this question of contract, as distinguished from colonization, where the sexes ought, undoubtedly, to be nearly, if not altogether, equal, it is problematical how far it is morally judicious to burden with wives, young men engaged in working out a time bargain, during the earliest part of which they are barely independent, although at its close they may not only be wealthy, but entitled, like soldiers and sailors, to be returned to their homes at the public expense with all their savings.

6*th*.—In a previous paragraph was stated that one of the most powerful feelings which actuates the coolie is the desire to return to India when he shall have terminated his contract or amassed a certain amount of money. This feeling may be wholesomely and effectually appealed to, I think, by enacting that contract servants convicted of violence or attempted violence towards their wives, should in their sentence be adjudged to forfeit all right to a return passage, besides being whipped, subject to certain restrictions, which latter is the punishment provided by the laws of England for brutal assaults on women. There is reason to believe that such punishment following crime with certainty and ever looming in the distance, will have a more deterrent effect on these fatalists than the gallows, even if the latter were sure, which it is not. The Indian is usually a coward, but the objects of his fear are not those which a European dreads. An appeal to the English Law and the fear of losing the return passage, will probably check his criminal propensities more effectually even than increasing beyond certain limits the ratio of women, who, if handsome, are appropriated by the wealthy, and if ugly, are left to themselves till they amass means and become independent.

The propriety of punishing even attempted violence is clear from the fact that the criminal career of the Indian, like that of all other men, is progressive; he passes through many stages of violence open to correction before graduating for the gallows, under the mingled influence of bhang and a debasing creed. In the latest instance where an Indian woman was murdered by her countryman she was not his wife, but they had cohabited for some time; he beat her so often and so severely, that she left him and took refuge with another man, whereupon the first man threatened to kill her and did so. There are said to be no attenuating circumstances, and the murderer will, no doubt, be hanged. Is it not more than probable that an appeal to the lash, from which the Indian recoils with horror, might, in this instance have saved two lives? It may be safely affirmed that the dread of corporal punishment, coupled with the certainty

losing the return passage to Calcutta, will control the Indian's disregard of his own or others life more effectually than any influences borrowed from Western civilization.

7*th*.—The births for the year were 202 as against 132 in 1867; but neither of these figures are reliable as the machinery for ascertaining the increase is very imperfect.

8*th*.—During the last year the number of reported cases of punishment for breach of contract was 686 as against 864 in 1867, while the number of absentees has fallen from 400 to 329—both these items indicate favorable progress.

9*th*.—The number of those who have redeemed balances of industrial residence has fallen from 62 in 1867 to 48 in the last year.

10*th*.—The financial position of the employers of Indian labor, with regard to indenture fees, is most satisfactory, all the monies due for the year amounting to £17,400 having been paid into the Treasury.

11*th*.—The number of laborers arrived in this Colony from the other West Indian Islands is somewhat over 1,700, and presents this peculiarity, that a large and increasing portion consists of Indian immigrants, not only from Grenada and St. Lucia, but also from Guadelope and Martinique. These last have located themselves chiefly in Port of Spain and find employment in sweeping and cleaning the streets.

12*th*.—Since the sailing of the *British Trident* in 1866, with return coolies, the registration of further applicants has been continued; during 1867 the number who presented themselves to enroll for return-passage was very limited, 91, and slowly increased up to the close of the immigration season in October 1868, when 368 additional names were registered, making in all 459—too many for one ship and not sufficient to freight two. As an offset to the return passage inseparable from the system of emigration, several coolies have applied to be allowed to exchange their right to a return-passage for an equivalent in land; under any circumstances this demand marks an important era for the Colony, and if, as may happen, the example be followed by numbers, and suitable crown lands can be found for their settlement in the neighbourhood of their present locations, an economy will be secured to the planter and general revenue, while at the same time a nucleus for free labor may be created in each District round which the coolies will gather and settle, instead of wandering as many of them do now with unsettled aim during the last five years of their residence.

13*th*.—In paragraph No. 3, it was stated that the principal mortality in the island was confined to about 15 estates out of 120, and that these were scattered over every District of the island, irrespective of local climate. Experience seems to indicate clearly enough that the health and lives of the imported laboring class depend more on the individual care of employers than on the position of estates, I have therefore less diffidence in repeating a suggestion made several years since on this subject, namely, that wherever the mortality of an estate exceeded the average of its own District or division, no application from such estate for any future supply of immigrants should be received till the mortality thereon had fallen within the normal limits. Such a rule would enforce the greatest care and in no instance could it be considered too severe, as it is clear that the individual loss on such estates is the direct cause of increased average in its own District.

14*th*.—There are besides one or two other points connected with the application for, and the distribution of, immigrants which merit attention. The average yearly requirements of the Colony lie somewhere between the extreme opinions of those on the one hand who advocate introducing yearly the whole number of immigrants applied for, whatever that may be, and of those on the other hand who would at once cut it down to one-half or less. The true mean may probably be attained without either wasting the resources of the Colony on an unnecessary introduction or crippling the advances of successful enterprise, by ordering the full number applied for so long as satisfactory evidence exists that the immigrants now employed by the applicants are treated in full accordance with the regulations enacted for their welfare, and so long as the applicant offers a fair guarantee that he actually requires the number applied for. This guarantee might vary, but in every instance it should apparently protect against all speculative demands—the Government which pays one-third of the annual immigration outlay from general revenue, and the planter who meets the remaining two-thirds, from fees and export duty. This guarantee might be in the first place direct, and one which admits of no cavil, namely, where an estate is known to yield a fair annual profit, this result, as a rule, can only be due to good management, and good management may be taken as the best guarantee by Government and the public, that the estate will meet its engagements, both as regards indenture fees and the payment of the people,—or the guarantee may be indirect, *viz*., that the house is fully supported by the Bank or other responsible party. In all cases where parties have been proceeded against for indenture fees, their applications for fresh immigrants should be disregarded, as they are probably unable to comply with the other Government regulations for the accommodation, comfort, and payment of the contract servants.

15*th*.—The state of Chinese immigration calls for no further notice than last year's. The number of vagrants steadily increases; and although many of the men by the two ships of 1865 are industrious and steady, yet the generality of employers look upon the whole class with

distrust. They are no doubt more troublesome to manage than the Hindoo races, but as the same difficulty occurred in 1853 and was successfully met, it is matter of regret that so little interest is shown towards a kind of labor on which the West Indian employer must shortly, in all probability, depend. He can scarcely look to India for continued supplies where the money spent of late years on roads, rails, and irrigation already amounting to nearly one hundred millions sterling, has raised ordinary adult labor to a daily rate of 7½, and where estimates have been taken for an outlay of even larger sums, whose results will not only be full employment for the masses, but the production of food at moderate prices. The immigration to the West Indies has been fostered by the continued high price of food which has never fallen since the famine of Orissa, and a state of chronic famine elsewhere has been prevalent up to date. But these conditions must shortly disappear before the present well-directed schemes of irrigation, and as the Indian laborer will, in future, find more remunerative work at home, those who at present depend upon his aid should, without delay, turn their eyes to China, and gradually promote a well selected immigration thence.

I have, &c.,
HY. MITCHELL,
Agent General of Immigrants.

No. 3, dated Trinidad, the 31st March 1870.

AN ORDINANCE

Enacted by the Governor of Trinidad with the advice and consent of the Legislative Council thereof, for extending the time for the feeding of Indentured Immigrants.

ARTHUR GORDON.

WHEREAS an Ordinance was passed in Council on the second day of February, in the year one thousand eight hundred and sixty-nine, entitled "an Ordinance for the feeding of Indentured Immigrants;" and whereas it is expedient to enlarge the time during which such immigrants shall be fed; be it enacted by his Excellency the Governor, with the advice and consent of the Legislative Council, as follows:—

Immigrants to be fed during first two years of Indenture.

I.—The provisions of the said Ordinance of the second day of February, one thousand eight hundred and sixty-nine shall extend and be taken to apply to every indentured immigrant allotted since the first day of January, one thousand eight hundred and sixty-nine, or who may be hereafter allotted to any plantation during the first two years of the term of the industrial residence of such immigrant.

After first year of Indenture, Agent General, &c., may, on application of immigrant, order that the providing of rations to such immigrants be discontinued.

II.—It shall be lawful for the Agent General or any Sub-Agent or Inspector of Immigrants, on the application of any such indentured immigrant at any time, after the expiration of twelve calendar months from the time of the allotment of such immigrant, to make order in writing to be signed by such Agent General or Sub Agent or Inspector in the Return Book of the plantation to which such immigrant shall be allotted, that the providing or furnishing of rations to such immigrant be discontinued, and from the day of such order being so made, the issue of rations to such immigrant shall cease.

Food may be delivered uncooked.

III.—From and after the expiration of twelve calendar months, from the day of the allotment of any indentured immigrant to any plantation, such of the rations of food to be delivered to such immigrant as by the said Ordinance are required to be cooked, may be delivered uncooked.

Passed in Council this twenty-fifth day of March, in the year of our Lord one thousand eight hundred and seventy.

A. C. ROSS,
Clerk of the Council.

Report on Immigration in connection with the Annual Abstracts from Quarterly Returns for the year ending 30th September 1869.

ARRIVALS.—The introduction of immigrants closed for the season by the arrival of the *Flying Foam* in July, with 32 deaths at sea, on a shipment of 479 souls. This heavy percentage, =6·6, was principally due to cholera in the river, and its *sequelæ*, with such accompaniments as usually characterise a protracted voyage of 128 days.

The risk of leaving so late as the month of March, and the disadvantage to the immigrants of arriving in this Colony after the rainy season had commenced, were mentioned in the Special Report on the *Flying Foam* while the causes of the death-rate were so minutely examined as to render further allusion to them, in this synopsis, unnecessary. The whole

number of Indians embarked at Calcutta during the season, for Trinidad, was=2,264 souls, and on these the death-rate was 63 or 2·7 per cent. without making any allowance for 17 births. The death-rate, therefore, when taken altogether, is the lowest as yet recorded. Of 2,201 souls landed, there were sent to hospital as suffering, or to the Convalescent Depôt as unfit for immediate field labor, 211 adults; of these 10 died, and the remainder were subsequently distributed to the estates for which they were originally designed.

The following table exhibits the numbers and rates above-mentioned; and it is but fair to state that, as regards two of the ships, the *Ancilla* and *Sevilla*, whose results are so exceptionably favorable, that they were equally or nearly so in the previous year:—

	Embarked.					*Landed.*					*Died at Sea.*					*Died in Hos. Dep.*				
	M.	F.	B.	G.	I.	M.	F.	B.	G.	I.	M.	F.	B.	G.	I.	M.	F.	B.	G.	I.
Malabar ...	330	82	12	4	11	327	76	12	4	9	3	6	0	0	2	2	0	0	0	0
Poona	217	116	22	12	25	215	115	22	12	25	2	1	0	0	2	0	2	0	0	0
Arima	200	67	19	15	12	195	66	18	14	11	5	1	1	1	1	0	1	0	0	0
Sevilla	163	80	26	25	20	163	78	26	24	19	0	2	0	1	1	0	0	0	0	0
Ancilla	169	80	34	24	20	168	80	34	24	19	1	0	0	0	1	0	0	0	0	0
Flying Foam	249	139	35	27	29	247	128	26	24	22	2	11	9	3	7	3	1	0	0	0
	1,328	564	148	107	117	1,315	543	138	102	105	13	21	10	5	14	5	4	0	0	0

2. General death-rate for the season among Indentured Indians.—The mortality during this year has been unusually heavy among all classes, both in town and country, and the indentured laborers have by no means escaped. On 9,563 of the latter the deaths were 450=4·7 per cent., one of the heaviest rates on record for many years back. As the Ordinance for feeding the newly-arrived contract laborers came into force in January last, it will be interesting to analyse somewhat further this percentage and take the mortality as it affected the newly-arrived, apart from its influence on the arrivals of 1867 and 1868.

This is the more essential, as hitherto the death-rate during the first year of seasoning, not only has always greatly exceeded that of each of the succeeding years of industrial residence, but on individual estates has occasionally surpassed their aggregate. The arrivals of 1865, 1866, and those of previous years, indentured under Bounty, may be eliminated from this inquiry as being already seasoned to the existing vicissitudes of labor and climate. The deaths among them were 157 during the year ending 1st October 1869, consequently the balance of the 450 deaths on those who were introduced in 1867, 1868, and 1869, was 294; these arrange themselves thus, from December to October, respectively:—

90, in their 3rd year of residence, on 2,098 remaining of 2,400 allotted in 1867=4·29 per cent.
109, in their 2nd year of residence, on 1,529 remaining of 1,650 allotted in 1868=7·0 „
75, in their first year of residence, on 1,860 allotted in..... 1869=4·0 „

The result from these figures, which have been carefully extracted from Official Returns, is that under the system of rationing the laborer, the mortality among the newly introduced, as far as those records go, rises to little more than one-half of what it was among those who have been seasoned to the climate by a year's longer residence, and is even less than the death-rate of those who had been two years longer in the island, but who depended for a livelihood on money wages without any allowance of food.

Perhaps this result may be placed in a clearer light by comparing the death-rate of the women, who as being weaker naturally suffer most; it is as follows:—

13, on 543 arrived in 1869, died during 1869; = 2·5 per cent.
32, on 480 „ in 1868, „ „ 1869; = 6·6 „
25, on 717 „ in 1867, „ „ 1869; = 3·49 „

That this timely feeding saved the lives of many laborers, is clear from the fact that during the inclement months of the past July and August, numbers of the newly-arrived were unable to earn the full value of their rations; in other words, had their means of living depended solely on the wages earned, its gradually decreasing amount would have brought them rapidly to the hospital and within the fatal range of any passing epidemic.

What the influence of such epidemic might have been during the last year on strangers scantily fed, we may gather from the Estates' Hospital Returns; meagre as they are in detail, we find from them that ulceration of the extremities and debility, as causes of death among both new arrivals and those of long standing, have been to a great extent replaced by maladies of a more formidable and unusual nature. Yellow fever, malignant, typhoid, and comatose fever are returned in their pages with ominous frequency. These entries show plainly, not only that maladies of most serious nature have been rife among the inhabitants of the Colony during 1869,* but

* On a total of 450 deaths in 1869, 21 were due to ulceration and 55 to debility, but of the new arrivals only two died from ulcers and eight from debility.

also that their characteristics have been differently apprehended by different practitioners, and treated accordingly. "*Tot homines tot sententiæ.*" As fatal fevers are rarely epidemic among the Indian laborers, that of 1869 merits careful study by those who had an opportunity of becoming familiar with its protean phases, that they may determine its nature and fix its general treatment. Allied no doubt to yellow fever by some symptoms, such as black vomit and yellowness of the skin and mucous membranes, it yet differed widely from that scourge in attacking the Indian, hitherto exceptionally exempt from its influence, and in doing so sporadically, with an utter absence of all apparent contagion, under circumstances most favorable for its existence; and also in the suddenness with which death, sometimes in a few hours, followed the incidence of the attack. Till further enquiry, this fever may perhaps, for general purposes, be classed as a variety of paludal poisoning of exceptional severity; the more so as in most features, except that of black vomit, it resembles the Mauritius fever of 1866, 1867, and 1868, which cut off 35,000 Indians, and declared itself under precisely similar climatic influences, *viz.*, after two successive years of unusual drought which dried up lagoons and water-courses, leaving their beds festering under a tropical sun. The Protector of Immigrants at Mauritius reports on this subject, that the mortality among Indians resident on estates was 6·1 per cent. as against 12·9 per cent. among those non-resident, and the "Fever Enquiry Commission," appointed by Governor Barclay, terminate their investigation with the following words: "the average death-rate among engaged laborers was much lower than that of the Colony generally." Now in Mauritius the engaged laborers are rationed, and although on the whole the monthly rate of wages is higher there than in Trinidad, yet the sugar is said to be shipped at a lower rate. This must have been partly due to the regularly-fed laborer turning out better work. While then it is matter of congratulation here that among our indentured classes the total death-rate should have been so low as 4·7 per cent., it should be kept fully in view that it was only 4 per cent. among that portion of them who, as newly introduced, were more liable to casualties, but among whom that liability was markedly diminished by regular feeding. In fact the Manager of Aranjuez assured me that, on that estate, the newly-arrived coolies could not have borne up against the climatic influence of this season without the daily issue of abundant and wholesome food. Experiences of this kind merit the gravest consideration from estate owners in the Colony, as it is more than possible that last year's mortality may prove, as did the epidemic of 1866 in Mauritius, the forerunner of much heavier subsequent mortality. Should this unfortunately occur in 1870-71, its disastrous influence will be better met by the habit of regular feeding than by any amount of occasional care and skill. Of unindentured Indians resident on estates, the numbers are 2,930 men, 1,197 women, 1,467 boys, and 1,228 girls = 6,822. Among these the deaths were 71, so that the total mortality of Indians on estates during 1869 has been 521 on 16,385 = 3·1 per cent. Against this favorable conclusion must however be set the fact that the adults not under contract are a floating population whose mortality is not correctly returned. The births registered were 224, on an adult female population of 3,794 = 5·9 per cent.

3. Absenteeism.—The number of contract laborers absent from their employers without leave is 345; this number on the already-mentioned total of 9,563 = 3·6 per cent.

Of these, 225 arrived in the Colony more than five years since, and a large majority may be safely assumed to be either dead or beyond roll-call on the Spanish Main; these have been already noticed in previous reports and require no further comment. The balance, or 120, if calculated on the original number of 8,165 distributed during the last five years is only 1·4 per cent.; this establishes the fact that absenteeism has much diminished of late, notwithstanding the facility of evasion to the opposite coast of the Spanish Main and to the neighbouring islands, with which there is free and almost daily communication.

Those who interest themselves especially in the welfare of Indian immigrants, particularly those who do so from wider motives than either love to them or their employers, must accept this as a tolerably safe conclusion, that the contract laborer does not abscond, because for reasons of his own he prefers remaining. From the Quarterly Returns, it appears that the tendency to more domestic habits has been gradually increasing up to date, so that the number of absentees on 1,860 immigrants distributed in 1869 is only 5, or ·02 per cent.

To what must this unusual result be attributed? Some ascribe it to the greater interest taken by the employer in his own welfare and in that of his servant; others believe that labor conjoined with rations is more attractive, or rather, less repulsive, to a man who cannot finish a full day's work than when presented alone. Be the cause what it may, the condition remains that absenteeism is scarcely known as yet among the coolies introduced in 1869, and this in face of the well known fact that they dislike the system of rationing. The new coolies certainly prefer receiving all their wages in money, to part in cash, and part in allowances, and the same system is fully as much insisted on by the older resident who has served his time and is in trade, but with widely different purpose and result.

The coolie of the first class, on arrival, is usually indigent; his sole object is money, and he will, as a rule, hoard his wages and stint his food to the certain deterioration of his value as a laborer; this he will even do at the ultimate risk of life as the figures quoted show, and against such a result the Government which sanctions his introduction, is as much bound to guard as the employer for whom he labors. The second class referred to is still more deeply

interested in promoting exclusive payments in money. It consist of old coolies who have served their time; these, when they have means, are generally rice-sellers or money lenders, frequently both; they have powerful connections on many estates; they first advance money or luxuries to every new coolie of likely promise, and once entrapped, then sell him the necessaries of life at famine prices. The road-side shopkeeper, by the rationing of the coolie arrivals of 1869, has lost his profits on the sale of some 500 tons of rice; his secret but not sleeping partner on the adjoining estate, has also lost his share; but the laborer in return has received his food at nearly wholesale prices, while the former gains of the petty trader have nearly or altogether passed to his (the laborer's) credit. This is not to be regretted, as some of the most serious disturbances which have occurred of late years in the rural Districts were connected with, if not altogether due, to the influence of these petty tradesmen over the laborers they supplied. The first year's experiment of feeding the latter has already weakened that influence and broken up some of the shops, and there can be no reasonable doubt that a wise and liberal scale of diet, proportioned to the real wants of every indentured immigrant, would draw much more closely the bonds of union between him and his employer, while it would drive to more wholesome pursuits, those able-bodied men who now betake themselves directly or indirectly to shop-keeping, and whose time is pretty equally spent between squeezing out the laborers' earnings and defrauding the wholesale merchant. The fact of the petty tradesman being occasionally victimised, by both laborer and merchant, does not invalidate the conclusion. Whether due to the increased supply of food or to other causes distinct or collateral, one of the marked features of the year 1869 has been an almost complete freedom from those crimes of violence against managers or superintendents, whose frequency during the two preceding years had caused no small uneasiness to the proprietary body of this Colony, and more than one formal representation to the Government.

4. Return Immigrants.—On the 25th April, 320 Indian immigrants left this for Calcutta on board the Ship *Arima*, 692 tons burthen, Jones, Master. She arrived at her destination in four months, after a stormy passage, and some repairs at Algoa Bay. There were seven deaths on the passage; a very low mortality when contrasted with the bad health of the invalided portion on board; some of these last had little chance of seeing India again, but they were embarked for the return-passage, as entitled by law. The remaining 313 were landed at Calcutta in good health, and Mr. Warner's report on arrival was highly creditable to the care and skill of Dr. Crane, the Superintendent. These coolies took back with them $65,585..... one man Heerah handed over $6,000 for transmission through the Treasury, but was believed to have about him $4,000 more; in fact he had stated as much. This man, originally allotted to the Glenroy Estate, had, after serving out his industrial contract, resided in the neighbouring village of the Mission of Savanna Grande as a shop-keeper and money-lender for the last ten years.

It is not astonishing that men of this class should object to the rationing of the indentured laborers, and stimulate the latter by every means in their power to discontented opposition; but it is difficult to comprehend how the employer should be induced occasionally to look on the rationing system as too troublesome, and thus play into the hands of these petty traders whose interest it is to establish on estates an *imperium in imperie*, directly subversive of the owner's control.

The *Arima* sailed so late in the year that the passengers were much exposed to the winter's cold in rounding the Cape, as well as to the opposing monsoon during the rest of the voyage; these inconveniences might have been avoided by three months' delay, but as many of the people petitioned to be allowed to leave at once, Her Majesty's Commissioners were requested to charter a vessel to carry some 300 return immigrants—about as many as could be safely counted on to start, from the 450 whose names were already registered. Of these last, not 200 eventually came forward on the appearance of the ship; this might have proved inconvenient, had not some 400 more registered to return between January and April; from these the complement of the *Arima* was eventually made up; and it is more than probable that where such substitution took place, some money consideration passed furtively between the parties. Precautions were taken to ensure an abundance of warm clothing to every individual embarked. Those who had the means, if not already sufficiently provided, were required to do so before being passed to the Island Depôt to await the ship, and the poor (who were not numerous) were furnished with the necessary kit by Government. In this transaction, there were some grounds for supposing that the natural simplicity of the officers in charge had been taken advantage of by the more astute Asiatics, and the ship had scarcely weighed anchor when it turned out that the coolies had, by a judicious transfer of kits and re-arrangement of their bundles, made a very moderate quantity of blankets and warm clothing do duty for a very considerable number of passengers:—that this slight of hand had taken place to an inconvenient extent was afterwards corroborated by Dr. Crane's report from Algoa Bay; fortunately it led to no serious results. Any occurrence of this kind will be prevented in future, by an order which was issued by His Excellency the Acting Governor, that no intending return immigrant should register his name for passage without depositing a fixed sum sufficient to meet the expense of the necessary clothing for the voyage. This order has produced very marked and wholesome results. In the first place, during the last eight months, not more than

150 of those who had previously registered have returned and made their deposit for clothing; the remaining 300, who had probably no definite intention of leaving at the time, have settled down, and thus withdraw one great cause of instability from the mass of Indian labor; when these last registered their names on the previous occasion, it might have been simply with the intention of eventually selling their chances to others whose contracts had more lately expired. This sort of gambling has been checked, and the *bonâ fide* applicants know that as soon as 150 more names shall have been entered, a ship will at once be ordered, and further, the Colonial Government knows that when a ship is ordered, there can be little chance of having to pay demurrage or short freight from the non-appearance of the passengers. The Island Depôt, where the immigrants were assembled and lodged for some days previous to embarkation, proved essentially serviceable. Besides the Indian immigrants on board the *Arima* five Chinese, returning to Canton *viâ* Calcutta, went as cabin passengers: they had with them money or bills to the amount of from $2,000 to $3,000 each.

5. Indians who have commuted their return-passage for a grant of land.—This is altogether a new heading in an immigration report, nor has the movement, however important, been as yet of such extent as to require lengthened comment. By reference to the *Royal Gazette*, it will be seen, that a notice therein published by authority of the Government, dated , offers to each coolie, who chooses so to do, a grant of 10 acres of land as full compensation for his return-passage to India. It was not to be expected that the Indian whose habits have been fixed in special grooves for tens of centuries should hurriedly embrace an offer which must strike at the roots of all his prejudices of country and creed and kin. Still, a certain number—about 60—have thus commuted their right to a return-passage, and have been settled within easy distance of the estates in Savonetta and Point-à-Pierre, where their labor will be available during the crop season for the neighbouring estates, while about 30 more have applied for lots.

The comparatively small number of Indians who have taken advantage of these grants, or rather sales of Crown lands, declares plainly the tenacity with which, as a body, they cling to their right of returning to India notwithstanding 25 years' experience of the West Indies; still, an example has been set, and although the leaders may have acted only with the intention of selling their lots when improved at no distant date, others may follow with different views, and strangers, especially our numerous coolie visitors from other Colonies, both French and English, may be induced to settle among them. The former seem to prefer Trinidad, and continue to arrive in considerable numbers, influenced, no doubt, by that provision of the French Regulations which is as follows: "Immigrants over the age of ten years, if they make a fresh agreement, reserve their right of return-passage at its conclusion, but should they remain unindentured after their indenture has terminated, they lose all right to return." Any hesitation, therefore, about re-indenturing may cost the coolies their return ticket, and to this want of decision in renewing the contract, we probably owe their presence here. These people are chiefly Madrassees. It may be mentioned under this heading that several gentlemen largely interested in the introduction of Indian labor believe that it would be desirable to return to a partial introduction of labor from the Madras Presidency. There can be no doubt that its inhabitants are individually superior in physical power to the coolies from Calcutta, and arrive here in better health. The great disadvantage which attended their earlier introduction was their turbulence and excessive intemperance, their wages were for the most part spent on rum, followed by the natural results,—destitution and wide-spread mortality.

These evils may now be in great measure avoided as the rationing system must ensure steadier habits; while in calculating the eventual value of different kinds of labor to this Colony, it must not be omitted that the Madrassees show less fixed resolve to return to India than their brethren of Calcutta. One of the drawbacks to the usefulness of this class when last introduced was the preponderance among them of domestics, over field laborers; this might be guarded against in future shipments, and where exceptions occurred, the necessary steps might be taken to indenture them in their real capacity as house servants. This last arrangement would prove an acceptable accommodation to the general public who already bear a certain proportion of the expense of introduction, and who complain pretty generally of the difficulty of securing domestic service in either town or country where the occupation or proprietorship of small freeholds is so facile and inviting.

6. Indenture Fees.—These have been paid with most creditable regularity. The amount received having been £20,149 18*s.* in 1869 as against £17,661 during the previous year, and no fees remained unpaid at the close of the season. It may be mentioned here that the immigration debt on behalf of the Colony has been gradually reduced from £189,073 0*s.* 8*d.* in 1852 to £30,264 4*s.* 2*d.* in 1869. These figures show, on the one hand, the pressure of circumstances at the earlier date, and, on the other, the subsequent elastic re-action of the Colonial resources.

7. The following figures, of another type, will interest all parties connected with the Colony of Trinidad; they prove the increased, the doubled production of sugar, independent

of Cocoa, since 1845 when Indian labor was first introduced. The average crop of 1843, 1844, 1845 being—

	Sugar.		Molasses.			Rum
	Hhds.	Tcs.	Bls.	Puns.	Tcs.	Puns.
	22,295	1,591	3,703	9,607	359	32
while that of 1866, 1867, 1868, was—	46,437	7,384	4,327	14,666	562	534

Further, that an increase of 10,000 hhds. over the average production of 1863, 1864, 1865, was obtained during the next three years, 1866, 1867, 1868, with the same number or rather fewer contract servants, while in 1869, the first of another triennial period, the crop has still further increased to 56,369 hhds., with every prospect of its ranging higher (weather permitting) for 1870 and 1871, notwithstanding certain heavy drawbacks of blight and fire on the crop of 1870; yet the contract servants are still about the same in number as they were six years before, showing an increase only on the women, while those whose contracts have not expired, are about 1,200 more.

TABLE.

1863. M.	F.	Total.	Hhds.	Sugar Trcs.	Brls.	Molasses Puns.	Trs.	Rum Puns.	Dis-Immi.
Contract.....7,593	2,479=	10,072	37,394	6,549	4,867	8,926	187	2,547	1,228
Free.....1,481	565=	2,046							
Total on Est.9,074	3,044=	12,118							
1864.									
Contract.....7,445	2,342=	9,787							
Free.....1,577	603=	2,180	39,634	6,738	5,383	15,227	408	611	1,238
Total on Est.9,101	2,881=	11,982							
1865.									
Contract.....7,374	2,125=	9,499							
Free.....1,727	756=	2,483	30,837	6,143	5,215	9,324	293	933	1,216
Total..... 9,101	2,881=	11,982							
1866.									
Contract.....8,005	2,002=	10,007							
Free.....2,136	899=	3,035	44,627	8,215	5,893	12,134	456	876	1,057
Total..... 10,141	2,901=	13,042							
1867.									
Contract.....7,132	2,358=	9,490							
Free..... 2,022	825=	2,847	46,730	7,220	3,561	15,340	515	412	2,403
Total..... 9,154	3,183=	12,337							
1868.									
Contract.....6,995	2,453=	9,448							
Free.....2,205	842=	3,047	47,955	6,717	3,529	16,524	717	315	1,655
Total.....9,200	3,295=	12,495							
1869.									
Contract.....7,514	2,697=	10,211							
Free..... 2,332	946=	3,278	49,373	7,476	2,629				1,830
Total..... 9,846	3,643=	13,498	& 1,637 concrete.						

The breadth in canes by published returns was in 1865, 40,437 acres, and in 1868, 41,639 acres, showing an increase of little more than 1,200 acres.

This rapid advance in the production of the chief staple is altogether beyond what can be attributed to the introduction of Indian immigrants, and involves several considerations which need not be dwelt on in this report. The continued influx of labor from other Colonies does not in general direct itself towards the sugar estates.

It has hitherto rather seemed to supply the place of those nomads who leave the suburbs of the towns and road-side villages to settle on Crown lands, and from among whom numbers have lately become fixed as rate-payers, under the superintendence of the Crown Surveyor and Court of Intendant. The arrivals of this kind for the season has been about 1,700 adults, somewhat below the average, as happened also last year.

Altogether unrestricted in their movements, these immigrants follow their own bent after arrival, and leave little trace of their whereabouts; but there can be little doubt that they swell in some way or other the tide of labor, and contribute their quota to the general progress most probably on the minor Cocoa estates or the still smaller holdings and provision grounds from which the former gradually arise.

There can be no doubt that improved tillage and more correct application of manure has powerfully contributed to the present crops, and the increase recorded has corresponded pretty uniformly with the increased use of the fork, which has for some time been gradually displacing that check to all improvement,—the universal hoe. The land has also been broken up to a much

greater extent by the plough, thus relieving the laborer from the severest of all manual tasks. On some estates implemental weeding has been introduced, which when carried out to its legitimate extent, will make the planter more and more independant of his numerous field hands. In more than one District the steam plough has been introduced with great advantage, but its deep tillage, while it saves the oxen, will not vanquish the cohesion of the stiffer soils, and bring out the exhaustless wealth of the Naparima clays till they have been thoroughly aerated by a judiciously applied system of sub-soil drainage.

Perhaps the most important advantage to be derived from the steam plough will be that its more familiar working must inevitably lead to steam traction, at least on flat lands, and displace 5/6 of the mules, whose lives are precarious, and which at present, though necessary, are a most undesirable and losing investment. Any manure they furnished could be produced of more suitable quality from cattle raised for food.

8. Labor-saving machinery has not been altogether confined to the agriculture of the Colony, but in some instances has been applied to the first step in manufacture of sugar, *viz.*, the carrying of canes to the mill.

Cane carriers were, like the vacuum pan, introduced many years since into this Colony, but like the Vacuum Pan were not much appreciated;—from some cause or another they fell into disuse, or were applied on too small a scale to realise their full economy in relieving the people from labor; to what extent may be gathered from the fact, that if the crop of Trinidad be taken at 55,000 hhds., and the high average of 2,000 gallons of cane juice be allowed for each hhd. made, this will indicate a net weight of more than 700,000 tons lifted during the crop season to a height of from four to ten feet above the level of the ground, by the labor of men and women, before being consigned to the crushing rollers; and this weight is in every instance raised above the elbows, generally over the head of the carrying gang. This last is composed for the most part of contract laborers, because the lift is severe and will rarely be undertaken by those who are not under contract; yet the weight might be overcome by the engine, in the same manner as it carries off the ground canes, which have lost two-thirds of their weight. In Cuba, where manual labor is most expensive, the more advanced estates use cane-carriers, 150 feet in length, that is to say long enough to allow of a well-arranged system of carts to be unloaded directly into the cane-carrier instead of being first discharged in the mill-yard as a preliminary to being a second time lifted up by hand.

In Demerara, where the weight of canes ground is about double what it is here, cane carriers are in universal use, in fact the lift by hand would be impracticable. It is perhaps too much to expect such alterations to be carried out fully and at once by the planter, while his time and attention are, as at present, divided between manufacture and agriculture, but the appreciation of all aids and appliances, whether mechanical or chemical, are indispensable steps towards, and must precede the great and impending change, when pure sugar direct from the cane must displace the present muscovado. The West Indian sugar farmer is now in a transition stage towards a result which has been long maturing, not perhaps so much by his own exertions as by the necessities of a great commercial and mechanical age which tells him distinctly, that it must have one of the primary necessaries of life in the pure state in which it is furnished by nature, and that the consumer will no longer both pay the planter for his avoidable errors of manufacture and the refiner for correcting them. He points to the Beetroot juice in Belgium and elsewhere, a complex liquid difficult to handle, from which a white sugar is produced in 48 hours, and calls on the planter to do the same from cane juice, twice as rich and pure and easily worked. He tells the planter further that the manufacture of pure sugar is one of the few trades which requires neither skill nor long practice.

Other arts need a longer or shorter apprenticeship, but the extraction of pure sugar is simply mechanical, implying only the adoption of suitable arrangements, which, however ingenious in their original contrivance, require no greater intellectual effort for their application and direction than that wonder of Art,—the sewing machine. The chief requisite in the manufacture of sugar are a judicious outlay and the constant supervision of the master's eye, both of which (and they are rarely given) the increased quantity and improved quality would soon re-pay. The Trinidad planter has, if true to himself, little to fear from his Beetroot competitor, as he stands at present in the race; his canes contain double the quantity of sugar, and his land yields double the weight of canes. Although the manufacture of Beet sugar has been so much improved of late years as to double the quantity extracted, and the cultivation has been so skilfully conducted as not merely to increase the weight of Beet per acre, but greatly to increase the relative quantity of sugar in the root, yet all these improvements in the future are open to the West Indian farmer in addition to the vast advantages of his start. What he has to fear is not the present application of English capital to the home growth of Beet sugar, but its combination with English enterprise and energy; these last can only be successfully met by their counterparts in the Colony, and without them all the advantages of cane and climate will be unavailing. It is true that, as stated above, the crop of the island has increased some 20,000 tons in a few years with but little extension of hands or acreage, and that land which formerly gave only 1½ hogsheads, now gives 2 hogsheads per acre, but this no longer meets the situation, the same lands must yield 3 hogsheads of good sugar—a result by no means unattainable if every particle of solid and liquid manure now produced on each estate be applied to a soil well adapted by tilth and drainage.

9. While much of the progress of the Colony during late years has been owing to the vigorous development of small properties into large, much has also been done in the way of concentration; few but residents of long standing are aware that since 1840 no less than 78 sets of works on as many estates have been dismantled in this Colony. Of these 40 have had their acreage absorbed into adjacent estates, thus swelling the respective size and produce of the latter while no less than 38 or nearly one-half have been abandoned, not so much from exhaustion as from local difficulties which are fast disappearing before increased facilities of labor supply and intercommunication. The condition, however, which fairly marks the real improvement of the Colony during late years, is neither the re-payment of its public debt, nor its increased export, but the fact, that no less than 17 Cocoa and 17 sugar estates which formerly employed contract labor, now depend entirely on the general population of their respective Districts, although their crops have in many cases doubled, while 31 others, with crops which in some instances range over 600 hogsheads, do not on an average muster 31 contract hands. Of the remaining estates

43 employ under 100 and average 72;
17 employ from 100 to 150;
6, from 150 to 200; and
8, over 200 Indentured immigrants, each.

HENRY MITCHELL,
Agent-General of Immigrants.

IMMIGRATION OFFICE,
February, 1870.

Dated Immigration Board, the 20th May 1870.

From—T. WALCOTT, ESQ.,
To—SIR F. ROGERS, Bart., &c., &c., &c.

I HAVE to acknowledge your letter of 14th instant, with copies of two despatches from the Governor of Trinidad; the first enclosing an Ordinance for extending the time for the feeding of indentured immigrants, and the second enclosing the Annual Report of the Immigration Agent.

2. By an Ordinance passed in February of last year (No. 3 of 1869.) employers were bound to supply their indentured immigrants for the first 12 months, after their allotment with a specified daily ration, and were empowered to deduct from their wages 5½*d.* a head in respect of it. But no deduction was to be made for rations supplied to children under 10 years of age. The amending Ordinance simply extends the period of rationing from one to two years with a proviso (section 3) that, after the first year of indentureship, the Immigration Agent General may, on the application of any immigrant, stop the rations, and where they are not stopped, may allow them to be issued in an uncooked state.

3. These ordinances are to be defended only on grounds of humanity. There is difference of opinion amongst planters on the feeding system; and it is admitted that the immigrants themselves dislike it and prefer cash wages which they can hoard at the expense of their health and strength. The facts, figures, and reasoning however adduced in the speech and Annual Report of the Immigrant Agent, an experienced medical man well acquainted with coolie habits and dispositions, justify this exceptional legislative interference with the liberty of the immigrants.

4. Dr. Mitchell shows that, even in an unusually sickly year, the rationing system, so far as it has been tried in Trinidad, had produced a marked effect. Since its introduction, the death-rate amongst the new comers had been little more than one-half; that amongst coolies who had had the advantage of a year longer acclimatization, and was less even than that amongst the Indians who had been two years longer in the island and had fed themselves out of their money wages. Governor Gordon, too, in another despatch of 8th ultimo, No. 46, on M. des Vœux's letter respecting the condition of immigrants in British Guiana, states that the effects of the Ordinance of 1869 had already been marvellous, and expresses his belief that if its provisions were extended to the whole term of indentureship a vast loss of life would be prevented.

5. The principle of the feeding system has been adopted in several of our coolie-importing Colonies; and the only question has since been as to the extent of its application. This has ranged from three months after arrival as in St. Lucia, up to the whole period of indentureship as in Mauritius and Jamaica. In Mauritius, where it has long been in operation, it appears from a report of the Protector of Immigrants that in the fatal fever years of 1866,'67, and 68, the death-rate amongst coolies resident and rationed on estates was 6·1 per cent., whilst among the non-resident who fed themselves, it was 12·9 or more than double. The system was last year introduced into Jamaica on the strong recommendation of the Governor, Sir John Peter Grant, after a long and careful investigation of the subject.

Act No. 34 of 1869.

6. As regards the amending ordinance, the only other remarks that occur to me are that it makes the operation of the previous ordinance of February 1869 retrospective, so as to include coolies indentured since the 1st of January of that year, and that the 3rd section has a tendency adverse to the main principle of the measure. If it is necessary to issue rations to all in lieu of money wages, it would seem a doubtful policy to issue them in a state that offers facilities for this misappropriation. It is true that the ordinance of 1869 contains a penal prohibition against the sale of rations, but where concealment is the interest of both seller and buyer, the enforcement of the law will rarely take place.

7. Subject to these remarks, I see no reason why the ordinance should not be left to its operation. But in that case I would suggest that its provisions should be made known in India, in order that the coolie may clearly understand before his recruitment the manner in which his wages are to be paid.

8. The report of the Agent General for the year ended 30th September 1869 is, as the Governor observes, more full of interesting matter than usual. The following summary will show its most salient statistical results. The total number of Indians resident on estates were 16,385 of whom 9,563 were indentured and 6,822 non-indentured. The mortality amongst the whole number in the year, so far as that amongst the non-indentured could be ascertained, was at the rate of 3·1 per cent. The registered births amongst a female population of 3,794 were 224 or at the rate of 5·9 per cent. The number of contract laborers absent without leave was 345 or at the rate of 3·6 per cent.; the number of coolies sent back to India was 372 equal to 320 statute adults, and the amount of money they carried with them was 65,585 dollars. Sixty coolies commuted their right to back-passages for a grant of ten acres of land each in the vicinity of estates in Savonetta and Point-à-Pierr, and 30 had applied for commutation. Indenture fees amounting to £20,149-18 had been received, and no arrears were outstanding at the end of the season. The immigration debt had been reduced from £1,89,073 in 1852 to £30,264 in 1869. The production of sugar since 1845, when Indian labor was first introduced, had increased from an average of the first three years of 22,295 hogsheads to 56,369 hogsheads in 1869. But Dr. Mitchell observes, that the fact which marks more than any other, the improvement of the Colony in late years is that 17 Cocoa and 17 sugar estates which formerly employed contract labor now depend entirely on the general population of their respective districts, although their crops have in many cases, doubled; while in the case of 31 other large estates not more than 31 contract laborers are employed. There are only eight estates in the Island which employ over 200 indentured immigrants a-piece.

9. The only suggestion that I have to make on this report is that if Earl Granville thinks fit, it should be communicated for the information of the Secretary of State for India.

No. 172, dated Georgetown, the 28th December 1869.

From—J. SCOTT, ESQ., Governor of Georgetown,
To—The RIGHT HON'BLE THE EARL GRANVILLE, K.G., &c. &c.

I HAVE the honor to transmit the consolidated Half-yearly Return of Immigrants under indenture of service, or residing on plantations, for the half-year ending the 30th of June last, and other documents enclosed in the Half-yearly Report of the Immigration Agent General.

In the Return for the pevious half-year, the estates showing the greatest mortality were Philadelphia, Friends, and Spring Garden. In the Return now transmitted, there are also three estates where the mortality is shown to exceed four per cent., namely, La Grange, Spring Garden, Mainstay; Friends and Philadelphia in this Return exhibit a mortality of less than two per cent., and even Spring Garden, although still classed as "very bad," shows an improvement, the mortality being 4·27 per cent. against 6·94 in the previous half-year. Mainstay now ranks as the worst, exhibiting a mortality of 5·62 per cent.; in the previous return, this plantation gave 3·05 per cent.

It appears to me to be impossible to attribute the increase or decrease in the death-rate shown by the different estates in successive years to any known existing cause, admitting of a remedy, some of the estates nearly always show a greater rate of mortality which may be attributed to the locality, and therefore, beyond the control of the Government. I have called upon the Medical Inspector of Estates Hospitals for a report on the plantations classed as bad, a copy of which I beg to enclose.

28th December 1869.

I may remark that great exertions are now being made to obtain improvements in the construction of the Estates Hospitals and in the immigrant dwellings. All new ones are constructed, as far as practicable, upon plans sketched out by Dr. Shier, and I do not find from the planters any very serious objections to conform to the wishes of the Government in this respect. Many old hospitals and barracks still exist which are faulty in construction, but these are being gradually improved or done away with altogether.

No. 1300, dated British Guiana, the 8th December 1869.

From—JAMES CROSBY, ESQ., Immigration Agent General,

To—The HON'BLE J. MAYER GRANT, Government Secretary.

I HAVE the honor to forward to you, in duplicate, for the information of His Excellency the Governor, and for transmission to the Right Hon'ble the Earl Granville, Her Majesty's Principal Secretary of State for the Colonies, this Report, and "the Consolidated Half-yearly Return of Immigrants, under indenture of service, or residing on plantations in the Colony of British Guiana, for the half-year ending 30th June 1869," and immediately, then, following, there is "an Abstract of such Consolidated Half-yearly Return of Immigrants," together with two enclosures, respectively numbered, Nos. 2 and 3, and hereinafter particularly described. There is also added, in manuscript, a heading, being a statement of complaints against immigrants for breaches of the terms of Indenture, adjudicated on during the half-year," by the Stipendiary Justices of the Peace, in their respective Districts. This statement shows the number of acquittals and the number of convictions on the hearing of such complaints on each estate; and at the foot of the Abstract is shown the percentage of acquittals and the percentage of the convictions on the hearing of such complaints, in each county and throughout the Colony. "The Consolidated Half-yearly Return of Immigrants, &c.," for the convenience of reference, is marked No. 1.

2. Also, "a Return showing the rates of mortality amongst the immigrants under Indenture of service, or residing on plantations in the Colony of British Guiana, for ths half-year ending 30th June 1869, the plantations being arranged and classified according to such rates." The Return is marked No. 2.

3. Also, "an Analysis of the Mortality which has taken place during the half-year ending 30th June 1869, on those plantations on which such mortality has been described as 'bad,' or as 'very bad,' or as 'exceptional' requiring investigation." The Return is marked No. 3.

4. The statement exhibiting the rates of mortality as enclosed in my Report No. 979, Saturday, 18th September 1869, has been omitted, as I propose sending in that Statement only once a year, with my Report in reference to the second-half of each year, so that the statement has reference to the whole year, and draws a comparison between the year just then closed, and the five preceding years.

5. The Return marked No. 1 shows the number of each description of immigrants under indenture of service on each estate, and the total number of such immigrants; the number of each description of immigrants not under indenture of service, residing on each estate, and the total number of such immigrants; and the total number of immigrants made up of those under, and not under, indenture, on each estate; the mortality among each description of immigrants, and the percentage of such mortality, and the total mortality of those immigrants under, and of those not under indenture, and the percentage of such mortality on each estate, as well as the number of births. The statement showing the complaints adjudicated upon by the Stipendiary Justices of the Peace, is not so perfect as I could wish, or desirable for the information of the Emigration Commissioners and the Secretary of State. I hope to remedy its defects early in the year 1870. The "Abstract of the Consolidated Half-yearly Return of Immigrants," &c., shows the matters above referred to, in reference to the several different divisions of counties, in reference to the several counties, and in respect to the whole Colony. And it appears there were located on estates in the Colony, on the 30th June 1869, immigrants under indenture, 27,871 males, 9,195 females, making a total of 37,066 immigrants; and immigrants not under indenture, 5,743 males, 3,814 females, making a total of 9,557 immigrants, making, consequently, a grand total of 46,623 immigrants under the supervision and control of the Immigration Department. The mortality in the county of Demerara has been 1·59 per cent., in Essequebo, 1·36 per cent., and in Berbice, 1·27 per cent, and throughout the Colony, 1·48 per cent. The number of complaints adjudicated or made against immigrants under indenture, for breaches of the terms of indenture, has been 2,044 or 5·51 per cent., and the acquittals being at the rate of 1·84 per cent., and the convictions at the rate of 3·67 per cent., on the immigrant population under indenture throughout the colony.

6. The Return marked No. 2 shows the number of immigrants resident on estates, the number of deaths, and the percentage of such mortality during the first-half of the year 1869, and there is an arrangement and classification of seven separate divisions; and at once shows the graduated rate of mortality of immigrants resident on the respective estates throughout the Colony; and it will be observed, only one estate, the Mainstay Estate, Arabian Coast Essequebo, is classified as "exceptional;" and requiring investigation, only two estates the La Grange, West Bank, Demerara, and the Spring Garden Estate, Arabian Coast Essequebo, as "very bad," and only two estates, the Uitolugt, West Coast Demerara, and the Johanna Cecilia Estate, Arabian Coast Essequebo, as "bad." There were consequently out of the whole number of 126 estates referred to in the Consolidated Return, and on which immigrants are located in the Colony, only these five estates requiring particular observation. There can be no doubt, the sanitary condition of the immigrants improves every half-year, as it is evident the mortality of the immigrants on estates is decreased every half-year. I have no

doubt on the completion of the hospitals about to be erected; and on the late improvements in the construction of the cottages of the immigrants being carried out throughout the Colony, still greater improvements will take place and the mortality, in another year or two, considerably reduced. There will still be room for improvement.

7. In the analysis marked No. 3 is shown the mortality which has taken place during the half-year to which the Consolidated Return marked No. 1 relates in respect to the above-mentioned five estates, classified as "bad," "very bad," and "exceptional," and in the order of such classification. The mortality on each of these five estates is contrasted with the mortality on the same estates, during the four half-years immediately preceding the first-half of the year 1869. The casualties which occurred on these estates would, if deducted, materially decrease the mortality; and, contrasted with former half-years, it is quite possible the cause of such excess in the half-year to which this report refers may be explained.

8. In the county of Demerara, the greatest mortality during the half-year, has taken place on the estates situate on the West Bank, being 1·85 per cent., and the least mortality for the same period on the estates situate in Mahaica, being 1·11 per cent. In the county of Essequebo, the greatest mortality has been on estates situate on the Arabian Coast, and the least mortality on the estates in Tiger Island. In the county of Berbice, the greatest mortality has been on estates situate on the East Bank; and the least mortality on the estates on the Corentyne Coast. The greatest mortality has been among the Indian immigrants from Madras, being 1·99 per cent., and the least mortality has been among the immigrants from Madeira, being only ·24 per cent. The mortality in the three several counties and throughout the Colony has been already stated in paragraph 5.

9. I regret I have been unable to send in this report at an earlier period. The cause of the delay I very fully explained in a similar report, No. 979, Saturday, 18th September 1869, when a much greater delay had taken place than on the present occasion. I hope such delays will not occur during the year 1870.

Remarks by DR. D. SHIER, M.D., *Medical Inspector, Estates Hospitals, on some Cases mentioned in the Half-yearly Report (June* 1869*) of the Immigration Agent General on the Mortality on Estates throughout the Colony,—dated Georgetown, the 28th December* 1869.

THE Immigration Agent General draws attention to two estates on which the ratio of mortality during the period is characterised as *bad*, two on which it is characterised as *very bad*, and one on which it is characterised as *exceptional* (being over five per cent.).

Having recently inspected the Estates' Hospitals of the Colony, the following remarks are offered supplementary to those of the Immigration Agent General:—

Plantation Uitolugt West Coast, county of Demerara.

Of the 12 deaths which occurred, four were of immigrants who had not completed their first year of residence in the Colony. Three of these died of fever and one of jaundice. Three other deaths are attributed to fever. It will thus be seen that half of the deaths occurred from fever.

For several years the mortality on this estate has exceeded the average rate of the District. The site of the hospital is bad, and the hospital itself is inferior. The matter was brought to the notice of the Executive, and the Attorney of the Estate has been requested to erect a new hospital on an unobjectionable site.

Plantation Johanna Cecelia.—Arouabisce Coast, county of Essequebo.

Of the eight deaths, three occurred from dysentery and two from debility. Only one death occurred of an immigrant in the period of acclimation. The rate of mortality on this estate has been on two occasions exceptionally high. It is only recently that immigrants have been settled on this estate, and so eager was the proprietor to obtain laborers, that he indentured many old and feeble immigrants who could not obtain bounty on re-indenture from any other estate. Year by year some of these people die off, and thus swell the rate of mortality.

Plantation La Grange.—River District, county of Demerara.

Of the 15 deaths, four were of immigrants who had not completed their first year of residence. Two of these died of intermittent fever, one from dysentery and one from debility. Six deaths arose from dysentery which prevailed to a greater extent than usual during the long drought which occurred.

The immigrants on this estate are housed in two coffee logies and in the old hospital, which has been fitted up as a barrack. In these dwellings it is impossible to enforce cleanly habits, and the occupants are thus placed not in the most favorable circumstances.

The attention of the proprietor of this estate was drawn to the subject, and a beginning has been made in erecting dwellings of one story and of single apartments.

Plantation Spring Garden.—Arouabisce Coast, county of Essequebo.

Of the nine deaths, three were of immigrants in the period of acclimation. One died of sun-stroke, one died of dysentery, and one (a child four years of age) died from boils on head and body.

This estate has always been an unhealthy one. Much has been done by the proprietor in erecting dwellings of approved construction for the accommodation of the immigrants. A new hospital is about to be erected on what is believed to be a healthier site.

Plantation Mainstay.—Arouabisce Coast, county of Essequebo.

Of the ten deaths which occurred, six were of immigrants in the period of acclimation. Three of these died of dysentery, one of fever, one of pneumonia, and one of debility. The immigrants sent to this estate *ex* ship *Harkaway* were a very inferior lot, and most of them were admitted to hospital on their arrival on the estate. Four of these died. Two *ex* ship *Himalaya* died; one was rated ineffective and the other partially ineffective when sent to the estate. None of these six persons ever did any work.

This estate has always been considered a healthy one, and I attribute the exceptional mortality to immigrants of feeble constitution having been sent to the estate.

Dated Immigration Office, the 16th February 1870.

From—T. W. C. MURDOCH, ESQ.,

To—SIR F. ROGERS, BART.

I HAVE to acknowledge your letter of 7th instant, with a despatch from the Governor of British Guiana, enclosing the report of the Immigration Agent, Mr. Crosby, for the half-year ending 30th June 1869.

2. From this report it appears that, on 30th June last, there were on estates—

	Males.	*Females.*
Under Indenture	27,871	9,195
Not under Indenture	5,743	3,814
	33,614	13,009
Making a total of	46,623	immigrants.

The mortality throughout the Colony had been 1·48 per cent. during the half-year, the greatest being, as usual, in the county of Demerara 1·59 per cent., the smallest in Berbice 1·27 per cent. Of the 126 estates on which immigrants are employed, eight are described as "excellent," having had no death among 729 immigrants. Thirty-one are described as "very good," the mortality among 12,401 immigrants having been on each estate less than one per cent., 70 employing; 29,338 immigrants are described as "good," the mortality on each having been more than one, but less than two per cent.; 12 are described as "fair," the mortality on each having been more than two, but less than three per cent.; two are described as "bad," two, as "very bad," and one, as "exceptional," the mortality on the former having exceeded three per cent., on the second, four per cent. and on the last, five per cent.

3. A report on these five estates by the Medical Inspector of Estates Hospitals accompanies the Governor's despatch. From this it appears that on the two estates (Uitolugt and Johanna Cecilia) described as bad, the mortality has on previous occasions been exceptionally high; and that on the former, the Hospital is badly situated and constructed. That of the two estates described as *very bad* (La Grange and Spring Garden), the houses on the former are of such a description, that "it is impossible to enforce cleanly habits," and that the latter "has always been an unhealthy" estate. The estate described as "exceptional" is stated to have been hitherto healthy, and the unusual mortality is attributed to the bad condition of some of the new immigrants allotted to it.

4. I would submit that, where an exceptional mortality recurs several times on a particular estate, specially when it can be traced to any defects in the houses, or hospitals, or the water supply, the Governor should not allot any new immigrants to such estate, even if he does not see cause to withdraw those that have been already allotted to it. It is of little use calling attention to the mortality and obtaining reports on it if no practical result follows. But if it were once known that no new immigrants would be assigned to any estate on which an excessive mortality was a common occurrence, the proprietors would have the strongest motive to take every means in their power to improve the sanitary condition of their estates.

Dated Downing Street, the 31st May 1870.

From—R. G. W. HERBERT, ESQ.,

To—The Under Secretary of State for India.

WITH reference to the concluding paragraph of your letter of 18th March, relative to the irregularity in the transmission to the India Office of periodical reports on the condition of the Indian immigrants in coolie-importing Colonies, I am directed by Earl Granville to transmit to you, for the information of the Duke of Argyll, copies of the returns that have been received at this Office since the 30th June 1868, but which do not appear to have been sent to the India Office, together with the reports of the Emigration Commissioners, *viz.*:—

Grenada.—Half yearly Reports to 31st December 1868, and 30th June 1869.

St. Vincent.—Half yearly Report to 31st December 1868.

Jamaica.—Report for the year ended 30th September 1868, not received till the 1st of February 1870.

Trinidad.—For the year 1868, not received till the 14th of August 1869.

British Guiana.—Half yearly Report to 30th June 1869, not received till the 1st of February 1870.

I am to request that in laying these papers before the Duke of Argyll, you will inform His Grace that Lord Granville will call the attention of the Governors of those coolie-importing Colonies where there has been delay in sending Home these reports, to the importance of their early and regular transmission.

GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

Treaty between the BRITISH GOVERNMENT *and* HIS HIGHNESS TUKHT SINGH, G C S I, *Maharaja of Jodhpore, his heirs and successors, executed on the one part by* COLONEL JOHN CHRIS[illegible] *Officiating Political Agent at the Court of Jodhpore, under authority from* [illegible] *Officiating Political Agent in Marwar, and Vakeel in the Court of Jodhpore, duly appointed for the purpose, on behalf of the Government of India, by* HIS EXCELLENCY THE RIGHT HON'BLE RICHARD SOUTHWELL BOURKE, *Earl of Mayo, Viscount Mayo of Monycrower, Baron Naas of Naas,* K P, G M S I, P C, &c, &c, *Viceroy and Governor General of India, and on the other part by* JOSHEE HUNSRAJ, MOOSAHIB *of Marwar, in virtue of the full powers conferred on him by* MAHARAJA TUKHT SINGH *aforesaid*

I.—Subject to the conditions contained in the following agreement, the Government of Jodhpore will lease to the British Government its right of manufacturing and of selling salt within the limits of the territory bordering on the Sambhur Lake, as hereinafter defined in Article IV, and of levying duties on salt produced within such limits

II.—This lease shall continue in force until such time as the British Government desires to relinquish it, provided that the British Government shall give notice to the Government of Jodhpore of its intention to terminate the arrangement two full years previous to the date on which it desires the lease to cease

III.—To enable the British Government to carry on the manufacture and sale of salt in the Sambhur Lake, the Jodhpore Government shall empower the British Government, and its Officers appointed by the British Government for such purposes, to enter and search, in case of suspicion, houses and all other places, enclosed or otherwise, within the limits hereafter defined, and to arrest and punish with fine, imprisonment, confiscation of goods or otherwise, any and all persons detected within such limits in the violation of any of the rules or regulations which may be laid down by the British Government in regard to the manufacture, sale, or removal of salt, or the prevention of unlicensed manufacture or smuggling

IV.—A strip of territory, bordering the shores of the Lake throughout, within the separate jurisdiction of Jodhpore, including Nawa, Goodha, and other villages and hamlets, and averaging two (2) miles in width measured from the high water limits of the lake, shall be demarcated, and the whole space enclosed by such line of demarcation, as well as such portions of the lake itself or of its dry bed as are now under the exclusive and separate jurisdiction of Jodhpore, shall be held to constitute the limits within which the British Government and its Officers are authorized to exercise the jurisdiction referred to in Article III

V.—Within the said limits, and so far as such measures may be necessary for the protection or furtherance of the manufacture, sale, or removal of salt, the prevention of smuggling, and the enforcement of the rules laid down in accordance with Article III. of this Agreement, the British Government, or the Officers by it empowered, shall be authorized to occupy land for building or other purposes, to construct roads, erect barriers, hedges, or buildings, and to remove buildings or other property.

If any land paying land revenue to the Government of Jodhpore be occupied under the authority of the British Government for any of the purposes aforesaid, the British Government shall pay to the Government of Jodhpore an annual rent equal to the amount of such revenue.

In every case in which anything involving injury to private property shall be done by the British Government or its Officers under this Article, one month's previous notice shall be given to the Government of Jodhpore, and in all such cases proper compensation shall be given by the British Government on account of such injury. In case of difference shall be paid British Government or its Officers and the owner of such property as to between the compensation, such amount shall be determined by arbitration. nount of the

The erection of any buildings within the said limits shall not confer on the British Government any proprietary right in the land, which on the termination of the lease shall revert to the Government of Jodhpore, with all buildings or materials thereon by the British Government.

No temples or places of religious worship shall be interfered with.

VI.—Under the authority of the Jodhpore Government, the British Government shall constitute a Court, presided over by a competent Officer, for the trial conviction, of all persons charged with violations of the rules and regulations referred to in Article III., or offences connected therewith; and the British Government shall punishment, on cause the confinement of any such offenders sentenced to imprisonment within the said limits or elsewhere as may seem to it most fitting. authorized to aforesaid

VII.—From and after the date of the commencement of the lease, the British Government will, from time to time, fix the price at which salt manufactured within the said limits shall be offered for sale.

VIII.—The whole of the stocks of salt existing within the aforesaid limits shall on the commencement of the lease shall be transferred by the Jodhpore Government to the British Government on the following terms:—

The Government of Jodhpore will transfer six hundred thousand (600,000) British Indian maunds of salt to the British Government as stock with which to commence operations free of cost. The price to be paid to the Jodhpore Government for the remainder of the said stock shall be reckoned at six and a half (6½) annas per British Indian maund, and payment shall be made at this rate by the British Government to the Government of Jodhpore: provided that the said payment of six and a half (6½) annas per maund to the Government of Jodhpore shall only commence when salt in excess of nine hundred thousand (900,000) British Indian maunds is sold or exported by the British Government in any year, and until the aggregate of such yearly excesses amounts to the full quantity of the stock of salt transferred, over and above the said six hundred thousand (600,000) British maunds, the British Government shall not pay the royalty of forty (40) per cent. on the sale price of such excess, as provided in Article XII.

IX.—No tax, toll, transit duty, or due of any kind whatsoever shall be levied by the Jodhpore Government or shall by it be permitted to be levied by any other person, on any salt manufactured or sold by the British Government within the said limits, or while in transit through the Jodhpore territory, and covered by a British pass, *en route* to any place outside the Jodhpore territory: provided that on all salt sold for consumption within the territory of Jodhpore, the Government of that State will be at liberty to levy whatever tax it may please.

X.—Nothing in this Agreement shall be held to bar the sovereign jurisdiction of the Jodhpore Government within the aforesaid limits in all matters, civil and criminal, not connected with the manufacture, sale, or removal of salt, or the prevention of unlicensed manufacture or smuggling.

XI.—The Government of Jodhpore shall be relieved of all expenses whatsoever connected with the manufacture, sale, and removal of salt, and the prevention of unlicensed manufacture or smuggling within the limits aforesaid, and in consideration of the lease and other immunities hereby granted to it, the British Government agrees to pay to the Jodhpore Government, in two half yearly instalments, an annual rent of three lakhs (3,00,000) of Rupees, British currency, and the total sum of such annual rent, amounting to three lakhs (3,00,000) of Rupees, British currency, shall be paid without reference to the quantity of salt actually sold in, or exported from, the said limits. The above sum of three lakhs (3,00,000) of Rupees, shall include all rights of bhoom, transit dues, and huqs of every kind due to the Thakoor of Koochawun and others which the Jodhpore Government agrees to satisfy.

XII.—If the amount of salt sold in, or exported from, the said limits by the British Government in any year shall exceed nine hundred thousand (900,000) British Indian maunds, the British Government shall pay to the Government of Jodhpore on all such excess (subsequent to the exhaustion of the stock referred to in Article VIII.) a royalty at the rate of forty (40) per cent. on the price per maund, which shall have been fixed as the selling price under Article VII.

In the event of any doubts arising as to the amount of salt on which royalty is claimable in any year, the accounts rendered by the principal British Officer in charge at Sambhur shall be deemed conclusive evidence of the amounts actually sold or exported by the British Government within the periods to which they refer, provided that the Jodhpore Government shall not be debarred from deputing one of its own Officers to keep a record of sales for its own satisfaction.

XIII.—The British Government agrees to deliver annually seven thousand (7,000) British Indian maunds of good salt, free of all charges for the use of the Jodhpore Durbar; such salt to be delivered at the place of manufacture to any Officer empowered by the Jodhpore Government to receive it.

XIV.—The British Government shall have no claim on the land or other revenue, unconnected with salt, payable from the townships of Nowa, Goodha, or other villages or lands included within the limits aforesaid.

XV.—The British Government shall not sell any salt within the Jodhpore territory outside the limits of such jurisdiction as may be assigned to it by this or any other Agreement.

XVI.—If any person employed by the British Government within the said limits shall have absconded after committing an offence, or if any person shall have absconded after committing a breach of the rules laid down under Article III., the Jodhpore Government shall, on sufficient evidence of his criminality, make every effort to cause his arrest and surrender to the British authorities within the said limits, in case of his passing through, or taking refuge in, any part of the Jodhpore territories.

XVII.—None of the conditions of this Agreement shall have effect until the British Government shall actually assume charge of the manufacture of salt within the said limits.

The British Government may determine the date of so assuming charge, provided that if such charge be not assumed on or before the first May 1871, the conditions of this Agreement shall be null and void.

XVIII.—None of the conditions contained in this Agreement shall in any way be set aside or modified without the previous consent of both Governments; and should either party fail or neglect to adhere to these conditions, the other party shall cease to be bound by this Agreement.

Signed at Jodhpore on the eighteenth day of April A. D. one thousand eight hundred and seventy.

J. C. BROOKE, *Colonel,*
Offg. Political Agent.

Seal.

Seal of State of Jodhpore.

(Sd.) JOSHEE HUNSRAJ. Seal.

(Sd.) MAYO. Seal.

This Treaty was ratified by His Excellency the Viceroy and Governor General of India at Simla on the twenty-sixth July 1870.

(Sd.) C. U. AITCHISON,
Offg. Secy. to the Govt. of India, Foreign Dept.

GOVERNMENT OF INDIA.

LEGISLATIVE DEPARTMENT.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Tuesday, the 2nd August 1870.

PRESENT:

His Excellency the VICEROY and GOVERNOR GENERAL of India, K.P., G.C.S.I., *Presiding.*

The Hon'ble JOHN STRACHEY.

The Hon'ble SIR RICHARD TEMPLE, K.C.S.I.

The Hon'ble J. FITZJAMES STEPHEN, Q.C.

The Hon'ble B. H. ELLIS.

Major-General the Hon'ble H. W. NORMAN, C.B.

The Hon'ble F. R. COCKERELL.

EUROPEAN BRITISH SUBJECTS BILL.

The Hon'ble MR. STEPHEN introduced the Bill to confirm certain laws affecting European British subjects, and moved that it be referred to a Select Committee with instructions to report in a fortnight. He had fully explained at their last meeting the object of the Bill. A telegram had since been received from the Government of Bombay, in which objections were taken to the measure in its present form. These objections appeared to him ill-founded, but their validity would be considered by the Committee.

The Motion was put and agreed to.

PENAL CODE AMENDMENT BILL.

The Hon'ble MR. STEPHEN moved for leave to introduced a Bill to amend the Indian Penal Code. He said that as the Penal Code had been in force since the beginning of 1862, a sufficient interval had passed since its enactment to enable those who had watched, or were interested in it, to form an opinion of its merits, and to discover its defects. He had himself been led by circumstances to study the whole subject of criminal law with particular attention, and he was glad to be able publicly to express his opinion that the Indian Penal Code was a far better and more philosophical system of criminal law than any other with which he was acquainted, and in particular than any of the systems which were in force in England, France, or America. At the same time it appeared to him to be defective in some particulars. He thought that some of its defects were of considerable practical importance, and required an immediate remedy; others, though serious, were of a sort which might be remedied at leisure. He had given considerable attention to the subject, and should be prepared, he hoped, at no very distant time to make certain suggestions as to the propriety of re-casting the Chapters relating to Homicide, Theft, and the infliction of bodily harm; those suggestions, however, would be made rather from the juridical point of view than with the object of meeting any immediate and pressing want. There were, however, other defects in the Code, which he thought it desirable to remedy at once, as he believed that they were actually producing, in some instances, serious miscarriages of justice, and as they certainly might at any moment result in very serious mischief. He would shortly go through the sections of the proposed Bill, and explain the intention of each of them.

Section three of the Code provided that any person liable by *any law passed by the Governor General in Council* to be tried for an offence committed beyond the limits of British India, should be dealt with as if the act had been committed within British India. As cases might arise in which persons might be tried in India for an offence committed out of India (at sea for instance) not against any law passed by the Governor General in Council, but against other laws the breach of which the Courts in India have power to punish, it was thought best to extend the section to those cases.

Section thirty-four of the Code provided that when a criminal act was done by several persons, each was liable as if he alone had done the act. It was proposed to modify this section so as to make it apply in terms to acts done "in furtherance of the common intention of all." It appeared from a judgment of Sir Barnes Peacock that this was the true meaning of the section, and it was thought better to express it.

The definition of the word "offence," which frequently occurred in the Penal Code, was enlarged by Act IV of 1867. It was proposed to embody the enlarged definition in the interpretation clause of the Penal Code.

Section fifty-six of the Code provided that Europeans and Americans should be sentenced to penal servitude, instead of transportation according to the provisions of Act XXIV of 1865. This Act provided that, instead of a term of transportation not exceeding ten years, penal servitude for a term not exceeding six years should be inflicted, and instead of a term of transportation not exceeding fifteen years, penal servitude not exceeding ten. Now the Courts could award transportation for a term exceeding ten years, but short of life under five sections only. Hence in most cases European and American offenders could not be sentenced to penal servitude for any term intermediate between six years and life. This defect it was proposed to remove by a very simple proviso.

The two next sections were of great importance. For the first of these MR. STEPHEN was personally responsible. The second had been omitted by pure accident when the Code was passed. Each related to the punishment of political offences. Section one hundred and twenty-one of the Code punished with death or transportation for life and forfeiture of property—waging of war against the Queen, attempts to wage war, and abetment of waging of war. Now one form of abetment was conspiracy coupled with any act or illegal omission done in pursuance of that conspiracy. The effect of this was, that the Code apparently did not punish at all a mere conspiracy to wage war, nor did it punish any treasonable practice or conspiracy short of an attempt to wage war. Moreover, there was a good deal of obscurity about the phrase "wage war against the Queen." By the 25th Edward III, by which the law of treason in England was defined, waging war was one form of treason, and many cases, especially in the early part of the eighteenth century, had been decided as to the meaning of those words. Whether or not these cases would be held to apply to section 121 of the Penal Code, if the necessity for putting a judicial construction upon it should unhappily arise, was a question which MR. STEPHEN did not wish to discuss; but as he thought the English Judges had somewhat strained the law in their desire to find out means of inflicting appropriate punishment upon a most serious crime, he thought it would be a pity if the cases in question came under discussion in Indian Courts.

He proposed to remove these defects by a section adapted from the Treason-Felony Act passed in England in 1848. This section would punish, with the severest secondary punishment, conspiracies to deprive Her Majesty of the sovereignty of British India, or of any part thereof, and the waging, or abetment of the waging, or conspiracy to wage, civil war. The term "civil war" was defined to imply permanent and organized hostile operations carried on, for whatever purpose, by one section of the community against another. No act or omission would be necessary to make such conspiracies criminal.

It would be sufficient to prove as against any person the existence of such a conspiracy anywhere within or without British India, and his participation in it by any act which could show his knowledge and approval of the designs of the conspirators. MR. STEPHEN thought that no argument was required to prove that a conspiracy to bring about such a series of events as those of 1857 was as great a crime as could well be committed. The conspirators in such cases were usually more dangerous and more criminal than the instruments who carried out, in practice, their wicked designs.

The next section was one which, by some unaccountable mistake, had been omitted from the Penal Code as ultimately passed. It stood as section 113 in the draft Code published in 1837, and Sir Barnes Peacock was quite unable to account for its omission when the Code was enacted. It punished "attempts to excite feelings of disaffection to the Government," but it distinguished between disaffection and disapprobation, and explained that "such a disapprobation of the measures of the Government as was compatible with a disposition to render obedience to the lawful authority of the Government, and to support the lawful authority of the Government against unlawful attempts to subvert or resist that authority, was not disaffection," so that "the making of comments on the measures of the Government with the intention of exciting only this species of disapprobation was not an offence within this section."

Nothing could be further from the wish of the Government of India than to check, in the least degree, any criticism of their measures, however severe and hostile, nay, however disingenuous, unfair, and ill-informed it might be. So long as a writer or speaker neither directly nor indirectly suggested or intended to produce the use of force, he did not fall within this section. This, however, must be coupled with a warning. The question on trials under this section would always be as to the true intention of a speaker or writer, and this intention would have to be inferred from the circumstances of the case. The most bitter and unfair criticisms published by a newspaper in the common course of its business, might be perfectly compatible with the absence of any intention to advise resistance to lawful authority. Language, temperate in itself and justifiable as far as the express meaning of its terms went, might, if addressed to an excited mob, be the clearest proof of an intent to produce forcible resistance to authority. Whilst genuine criticism had nothing to fear from the proposed section, persons seditiously disposed must not suppose that they could evade its provisions by confining themselves to what, under other circumstances and in other persons, might be genuine criticism.

Passing over a few alterations of minor importance, MR. STEPHEN came to section eleven of the proposed Bill. It proposed to add the material part of the Lottery Act V of 1844 to the Chapter on Public Nuisances, and to repeal the Act itself. He did not know how this Act came to have been omitted from the Code.

The three hundred and seventh section of the Penal Code punished attempts to murder with transportation for life. Two prisoners under sentence of transportation for life,—one at the Andaman Islands, the other in Sindh,—had lately made desperate attempts to commit murder. In one case a most deserving gaol guard had been maimed for life, and had all but died in consequence of the brutal violence inflicted on him. In such cases no punishment at all could be inflicted on the criminal, as it mattered nothing to him how often he was sentenced to be transported for life. MR. STEPHEN proposed to punish such offenders with death.

The last addition which he proposed to make in the present Bill was to the Law of Homicide. The Penal Code strangely omitted to punish what, in England, would be called manslaughter by negligence. If a man killed another by any act which he knew to be likely to cause death, he committed culpable homicide; but if he caused death rashly or by negligence, he committed no offence at all. This was the more remarkable, as punishments were provided

for causing hurt, or grievous hurt, by rash and negligent acts, and as in the draft prepared by Lord Macaulay there was a section which punished the offence now in question. By what accident it had been omitted, MR. STEPHEN did not know. He proposed now to insert such a section. One reason for doing so was, that the Judges had adopted a plan for evading the law which, though ingenious, and, perhaps, necessary, was, he thought, objectionable. They convicted prisoners who had caused death by a rash or negligent act of causing 'grievous hurt' by a rash or negligent act. MR. STEPHEN had heard a Judge direct a Jury that to cause death was "to cause grievous hurt and more." This, he thought, was perfectly good sense; but as the Code defined "grievous hurt" to mean eight specified injuries, he thought it very questionable law. To convict a man who by rashness caused another to be drowned, of having 'deprived him of the sight of one of his eyes,' or of having "caused him to be unable for twenty days to follow his ordinary pursuits," was, to say the least, grotesque. MR. STEPHEN proposed to remedy the omission by providing expressly for the case of causing death by any rash or negligent act.

The motion was put and agreed to.

OUDH TALUQDARS RELIEF BILL.

The Hon'ble MR. STRACHEY asked leave to postpone the presentation of the Report of the Select Committee to which the Bill for the relief of certain taluqdárs in Oudh had been referred.

Leave was granted.

BENGAL REGULATIONS REPEAL BILL.

The Hon'ble MR. COCKERELL introduced the Bill for repealing certain enactments of the Bengal Code, and moved that it be referred to a Select Committee with instructions to report in six weeks. He said that this Bill purported to remove from the Statute-book all the Regulations, or parts of Regulations, of the Bengal Code, which (1) through lapse of time or change of circumstances, had become inoperative, or (2) though not expressly repealed, had been virtually superseded by other provisions of the existing law, or which (3) operated merely to rescind other enactments.

Within one or other of these classes were comprehended all the enactments specified in the Schedules.

He would not at the present time go into the details of these Regulations, which it was proposed to repeal either wholly or in part, further than to notice that some of them at least would appear to have been purposely left out of former repealing Acts, and to state the considerations upon which their repeal was now recommended.

As instances of such omissions, he might cite Regulations VI and IX of 1793 which came within the first, and certain provisions of Regulation IV of 1793 and other cognate enactments which belonged to the second, of the classes above referred to.

Regulations VI and IX of 1793 related to the constitution and function of the late Sadr Díwání and Nizámat Adálat. Although these Courts had been replaced by the High Court, the Regulations which treated of the constitution and functions of the former had clearly no application to the latter whose position and duties were regulated by English statute and letters patent.

In this view, the corresponding Regulations of the Madras Code had been repealed by the local legislature, which, it might here be remarked, could those enactments have been held to apply to the High Court, would have had no power to affect them by its legislation.

The other Regulations above-mentioned provided special penalties for the resistance by a landholder of the process of the Zila Court. Now, the resistance of a Court's process was an offence under the Indian Penal Code, and by the second section of that Code every act done contrary to the provisions thereof was punishable thereunder *and not otherwise*.

It was difficult to understand why, when in accordance with the rule laid down in that section, the other penal provisions of the then existing law were repealed, these enactments were left. It was certain that the extreme penalties which they contained had long since fallen into disuse; in some of the decisions of the High Court, the doubt had been raised as to whether the provisions of those Regulations in regard to the contempt of Court by resistance of its process, could be held to be still in force though they had not been expressly repealed, and it had been shown that at all events their operation was confined to cases of resistance of the process of the Court of the District Judge. When it was considered that these Courts formed a not inconsiderable minority of the Courts in which the litigation of the territories affected by these Regulations was carried on, the above-mentioned consideration afforded in itsef a sufficient argument for abrogating these special penalties; for it was obviously inexpedient to maintain different measures of punishment for the same offence, the application of which was regulated solely by the status of the Court against whose lawful authority such offence had been committed.

He need only add that if the Bill was committed, it was desirable that it should be sent, in the first instance, to the Local Governments of Bengal and the North-Western Provinces.

The Schedules had been carefully prepared with the aid of such local experience as he had been able to bring to bear on their subject, and it was hoped that they would be found to contain every enactment that it was possible to dispense with. A measure of this kind, however, needed in an especial manner the review and criticisms of local experts ere the Committee could be in a position to deal satisfactorily with its details.

We needed to be certified that a wholesome zeal for cutting away the "dry wood" and so compacting the statutory plantation did not result in the destruction of anything that was of practicable use at the present time.

The Motion was put and agreed to.

The following Select Committees were named:—

On the Bill to confirm certain laws affecting European British subjects—the Hon'ble Messrs. Ellis, Cockerell, and the Mover.

On the Bill for repealing certain enactments of the Bengal Code—the Hon'ble Mr. Stephen and the Mover.

The Council then adjourned to the 16th August 1870.

WHITLEY STOKES,

SIMLA, *The 2nd August* 1870. } *Secy. to the Council of the Govr. Genl. for making Laws and Regulations.*

No. 31 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, AUGUST 13, 1870.

OFFICIAL PAPERS.

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No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

PROPERTIES OF THE FOREST-TREE "HYMENODICTYON EXCELSUM."

From R. A. DALYELL, ESQ., Acting Secretary to the Government of Madras, Revenue Department, to the Secretary to the Government of India, Home Department,—No. 1064, dated Ootacamund, the 13th July 1870.

WITH reference to paragraph 2 of my letter dated 20th July 1869, No. 2119, I am directed to transmit herewith, for the information of the Government of India, the accompanying letter* from Mr. Broughton, the Government Quinologist (who has undertaken to extend his investigations to the indigenous medicinal plants of India), reporting on the properties of the forest-tree *Hymenodictyon excelsum*.

* Dated 6th June 1870.

2. Mr. Broughton's experiment shows that the bitter principle inherent in the bark of this tree is identical with *æsculin*, which is also obtained from the horse-chesnut tree, but is of little or no therapeutic value where the alkaloids of cinchona are procurable.

Extract from the Proceedings of the Government of Madras, Revenue Department,—dated Fort St. George, the 30th June 1870.

READ the following letter:—

From J. BROUGHTON, ESQ., Government Quinologist, to the Acting Secretary to Government of Madras, Revenue Department,—dated Ootacamund, the 6th June 1870.

CERTAIN chemical researches which I have made on an indigenous febrifuge have just been completed. I herewith beg to communicate the broad results of the inquiry according to Government Order No. 241 of 22nd January 1870.

2. The large forest-tree *Hymenodictyon excelsum* is a Native febrifuge of considerable interest, not so much from its proved efficacy in medicine as from its history and botanical relations. It belongs to the same natural order as the true cinchona, and it so greatly resembles

them in appearance that it was named for many years *cinchona excelsa*. Being thus considered a cinchona indigenous to India, very considerable expectations were entertained that it would be found at least a most valuable febrifuge, if not an actual source of quinine.

3. Writers on Indian *Materia Medica* allude in doubtful terms to the bark of this tree.

4. Ainslie, speaking of the various substitutes that had been recommended for Peruvian bark, mentions the bark of *cinchona excelsa* as having been ascertained to possess powerful tonic and antifebrile virtues.

5. O'Shaughnessy* speaks of the bark as follows:—

> "The two inner leaves of the bark possess great bitterness and astringency; the bark is used by tanners, and also as a medicine among the Hindoos in cases requiring astringents.
>
> "We have analyzed the bark of *cinchona excelsa* from the Botanic Gardens of Calcutta, but could not detect any alkaline ingredient; nevertheless, the trees of hilly regions may furnish the valuable desideratum. The stamina being contained within the tube, affords much ground for expecting the discovery of a febrifuge alkaline in this species."†

The writers of the New Indian Pharmacopœia mention the bark as follows:—

> "Considering the natural order to which the tree belongs, and the sensible properties of its bark, it is not improbable that it may prove a valuable remedy. In all future inquiries into the subject of Indian anti-periodics, this bark should be one of the first to which attention should be directed."

6. These circumstances, therefore, led me to make a full investigation of the chemical constituents of the bark, in the hope that I might be fortunate enough to discover a proximate principle, whose constitution might, perhaps, throw light on that of the true cinchona alkaloids.

7. By the kindness of Lieutenant-Colonel Morgan, Deputy Conservator of Forests, I obtained a supply of the fresh bark from the neighbourhood of Mudumullay, in Wynaad. The bark possesses the remarkble property of being bitter when quite fresh, but of this bitterness diminishing on keeping, so that after a few days it has so decreased that the bark becomes nearly tasteless.

8. After much labour I was enabled to obtain the bitter principle in a pure crystalline state. A full examination and analysis of this substance showed me that it was identical with *æsculin*, the fluorescent and crystalline principle of horse-chesnut bark discovered by Frischmom, and subsequently analyzed by Fromsdorff in 1835. The chemical details of the investigation and the data for this conclusion are scarcely suitable for detail here. They are to be found in the Pharm. Journal, Volume IX., page 418.

9. It is a somewhat singular circumstance that the bitter principle of this Indian tree should be the same as that of the horse-chesnut. It is also remarkable that the bark of the latter has obtained a certain reputation of being like the *Hymenodictyon* in India a good substitute for cinchona bark. Lindley and other authors mention that it has been recommended as a valuable febrifuge in intermittents.

10. The very general impression that this Indian false cinchona contained quinine receives explanation from the properties of *æsculin*. The solutions this substance like those of quinine are fluorescent, and are even more beautifully so. An observer, who did not examine the other very dissimilar re-actions of the two substances, might thus be misled by the coincidence of so peculiar a property.

11. The loss of bitterness undergone by the bark on keeping is now also readily explained, since *æsculin* in contact with decaying organic substances is decomposed, and produces a comparatively insoluble substance, *æsculetin*, which has but a slight bitter taste.

12. Being informed that there were certain differences in the *Hymenodictyon* of Southern India, and that of the mountain ranges of Bengal, I was desirous of testing the latter before communicating my results as being perfectly general. By the kindness of Mr. C. B. Clarke I was supplied with some bark of the original *Hymenodictyon* bark of Roxburgh from the Calcutta Botanic Gardens. This enabled me to prove that there was no essential chemical difference in the bark of the Bengal tree, and that from Southern India.

---

* Bengal Dispensatory, 1842, pp. 394-395.

† I may mention that this structure of the flower does not appear to be coincident with any special excellence in the bark of the cinchonas of the Neilgherry plantations.

13. The bark of *Hymenodictyon excelsum* thus differs entirely in its chemical character and products from cinchona bark. Containing no trace of quinine or related alkaloid, the expectations once entertained of its medicinal value appear to have little support in fact.

14. As *æsculin* will eventually be both a dearer and less plentiful product in this country than the alkaloids of cinchona, and is certainly of inferior therapeutic value, it appears to me to be scarcely necessary to make any medical trials with it. Should it, however, be thought desirable to do so, I shall of course be ready to supply the necessary material in a pure state.

Order thereon, dated Fort St. George, the 30th June 1870, No. 988.

MR. BROUGHTON'S experiment shows that the bitter principle inherent in the bark of the tree *Hymenodictyon excelsum* is indential with *æsculin*, which is also obtainable from the horse-chesnut tree, but is of little therapeutic value where the alkaloids of cinchona are procurable.

2. The report of the Government Quinologist will be communicated to the Supreme Government and to the Inspector General, Indian Medical Department, and a copy of it will be transmitted to the Secretary of State.

(True Extract.)

H. E. STOKES,

Under Secretary to Govt., Madras.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

IRRIGATION OPERATIONS OF FUSL KHURREEF IN THE NORTH-WESTERN PROVINCES UP TO 30th JUNE 1870.

CANAL DIVISIONS.	Water distributed during June 1870: Depth in Canal at Regulating Gauge. Full supply, feet.	Actual throughout, feet.	Gross Consumption, cubic feet per second. Estimated full discharge.	Actual average throughout.
Ganges Canal. Northern ..	9·00	8·34		454
Meerut ..	6·80	6·95		1,075
Futtehgurh ..	6·50	5·40		370
Boolundshuhur ..	Not known	3·30	5,585	616
Allygurh ..	6·00	5·04		927
Etawah ..	4·80	2·58		584
Cawnpore ..	6·00	38·3		649
			Total ..	4,675
Eastern Jumna Canal ..	..	4·99	..	1,246
Doon Canals ..	..	..	..	86
Rohilkhund Canals ..	..	..	..	260
Total ..	..	..	..	6,267

Navigation Return, Ganges Canal. Nature of Traffic.	Up. Mds.	Up. No.	Down. Mds.	Down. No.	Total Up and Down. Mds.	Total Up and Down. No.
Grains—						
Rice ..	607	..	..	..	607	..
Gram ..	2,465	..	..	..	2,465	..
Wheat ..	1,250	..	425	..	1,675	..
Bejur ..	100	..	..	..	100	..
Urbur) (	755	..	..	..	755	..
Moong ; Dâl .. (	150	..	..	..	150	..
Mu ee) (	137	..	..	..	137	..
Jowar ..	950	..	..	..	950	..
Total ..	6,414	..	425	..	6,839	..
Cotton ..	..	..	6,400	..	6,400	..
Oil-seeds ..	..	..	2,786	..	2,786	..
Salt ..	950	..	4,930	..	5,880	..
Metals ..	2,981	..	800	..	3,781	..
Building materials ..	132	..	20,850	..	20,982	..
Miscellaneous goods ..	1,706	..	7,555	..	9,261	..
Firewood ..	..	..	35,215	..	35,215	..
Bamboos ..	..	..	..	769,276	..	769,276
Bullees, unsquared timber ..	..	..	..	16,145	..	16,145
Kurrees, squared timber ..	..	587	..	3,011	..	3,598
Logs ..	..	..	..	16	..	16
Miscellaneous timbers ..	..	88	..	129	..	217
Passengers, or live stock ..	..	..	..	799	..	799
Total ..	12,183	675	78,961	789,376	91,144	790,051

Land Irrigated (approximate). Zillah.	Acres.
Saharunpore ..	17,388
Mozuffernuggur ..	38,571
Meerut ..	57,969
Boolundshuhur ..	30,174
Allygurh ..	36,427
Muttra ..	5,714
Agra ..	500
Etah ..	8,767
Mynpoorie ..	9,140
Futtehgurh ..	3,807
Etawah ..	12,694
Cawnpore ..	21,548
Dehra Doon ..	2,228
Bijnour ..	552
Terai ..	356
Bareilly ..	2,659
Jhansie ..	67
Humeerpore ..	200
Total ..	248,745

Rain-fall. Total from 1st April to 30th June 1870.	Average of ten previous years for the same period.
5·5	6·0
13·2	4·7
15·2	4·6
7·3	2·7
7·4	3·7
7·9	2·8
6·3	2·7
5·6	2·8
7·6	3·5
10·6	4·1
5·6	3·1
2·5	3·4
9·5	8·9
4·8	5·7
16·2	6·2*
13·8	6·8
6·1	4·7
3·2	2·8
..	..

REMARKS.

The mean volume of the Ganges Canal passing the Roorkee gauge during the month, was 4,995 cubic feet per second.

Waste-water discharged was as follows:—

Tail, Etawah Branch .. 49 cubic feet.
Escapes ,, ,, .. 87 ,, ,,
Tail, Cawnpore ,, .. 184 ,, ,,
Total .. 320 cubic feet.

The Cawnpore and Etawah Branches have alternate weeks of high and low supply. The gauge-readings show the mean of the month.

The demand for water on the Ganges Canal continued brisk all over the Doab till the middle of the month. Rain fell about this time. After the 20th instant, heavy falls of rain were general all over the country, and the demand greatly diminished. Crops were all in a flourishing condition. Some reports are received of a worm attacking the Indigo. Futtehgurh Branch was closed on the 27th instant, there being no demand. On the Eastern Jumna Canal there was a great demand for second watering of sugar and planting out of rice. The river fluctuated in an extraordinary degree, and occasionally the supply had to be adjusted to Western Jumna Canal requirements. Some rain fell on the 14th and 17th of the month. After the 20th instant the Jumna came down in flood, and there was an ample supply. Very heavy rain fell from the 21st to the end of the month; 4·3" at Kulsea, 15·3" at Bhynswal, and 8·9" at Barote were registered in this period.

On the Doon Canals there was a good demand. Rain also fell in the Doon after the 20th instant, and the Jakhun Canal had to be closed on account of landslips.

* Average for the past six years. Rain-fall previous to 1864 not given.

ALLAHABAD;
The 14th July 1870.

W. G. ROSS, *Lieut., R.E.,*
Asst. to Chief Engineer, Irrigation Works, N. W. P.

Comparative Statement of Irrigation and Rainfall for 1867-68, and 1868-69, in the Thurr and Parkur Districts of the Province of Sind.

Talookas.	Area in Acres.	Cultivated area in Acres.	Areas Irrigated. Fusl Khurreef, 1868-69. Total Acres.	In comparison with 1867-68. Increase.	Decrease.	Fusl Rubbee, 1868-69. Total Acres.	In comparison with 1867-68. Increase.	Decrease.	Whole year, 1868-69. Total Acres.	In comparison with 1867-68. Increase.	Decrease.	Percentage of increase or decrease in 1868-69.	Rainfall. 1867-68.	1868-69.	Percentage of decrease in 1868-69.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Oomercote	40,680	14,937	8,633	2,469	...	6,304	6,042	...	14,937	8,511	...	57	6·27	23·8	....	Mitrow Canal and its Branches.
Narra	28,408	11,891	10,914	852	...	977	817	...	11,891	1,669	...	14	...	...	...	
Sanghur	15,000	6,377	5,737	1,738	...	640	452	...	6,377	2,190	...	34	...	...	...	
Total ...	84,088	33,205	25,284	5,059	...	7,921	7,311	...	33,205	12,370	...	37	...	...	...	
Kipra	1,67,192	29,231	2,632	857	...	26,599	15,051	...	29,231	15,908	...	54	...	...	...	Narra Flood.
Sanghur	7,000	3,920	931	521	...	2,989	870	...	3,920	1,391	...	35	...	...	...	
Oomercote	25,545	5,015	304	...	446	4,711	561	...	5,015	115	...	2	...	...	...	
Total ...	1,99,737	38,166	3,867	1,378	446	34,299	16,482	...	38,166	17,414	...	45	...	...	...	
Sanghur	1,000	385	385	156	...	...	...	3	385	153	...	39	...	...	...	Heranwah.
Sanghur	3,500	46	...	...	23	46	46	...	46	23	...	50	...	...	...	Dimwah.
Oomercote	66,674	38,126	12,744	2,509	...	25,382	13,949	...	38,127	16,458	...	43	...	...	...	Thurr Canal and its Branches.
Grand Total ...	3,54,999	1,09,928	42,280	9,102	469	67,648	37,788	3	1,09,928	46,418	...	42	...	...	...	

Net increase, 46,418 acres.

C. J. MERRIMAN, *Lieut.-Col., R.E.,*
Superintending Engineer for Irrigation in Sind.

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			Fusl Khurreef, 1868-69.			Fusl Rubbee, 1868-69.			Whole year, 1868-69.						
			Total Acres.	In comparison with 1867-68. Increase.	In comparison with 1867-68. Decrease.	Total Acres.	In comparison with 1867-68. Increase.	In comparison with 1867-68. Decrease.	Total Acres.	In comparison with 1867-68. Increase.	In comparison with 1867-68. Decrease.	Percentage of increase or decrease in 1868-69.	1867-68.	1868-69.	Percentage of decrease in 1868-69.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
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Oomercote	25,545	5,015	304	...	446	4,711	561	...	5,015	115	...	2	...	...	...	
Total ...	1,99,737	38,166	3,867	1,378	446	34,299	16,482	...	38,166	17,414	...	45	...	...	...	
Sanghur	1,000	385	385	156	...	...	...	3	385	153	...	39	...	...	...	Heranwah.
Sanghur	3,500	46	...	...	23	46	46	...	46	23	...	50	...	...	...	Dimwah.
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Superintending Engineer for Irrigation in Sind.

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GOVERNMENT OF INDIA.

MILITARY DEPARTMENT.

RULES REGARDING THE MEASURES TO BE ADOPTED ON THE OUTBREAK OF CHOLERA AND THE APPEARANCE OF SMALL-POX.

THE following revised Rules regarding the measures to be adopted on the outbreak of cholera amongst British* troops, are published in supersession of all former orders on the subject :—

SECTION I.

PRECAUTIONS NECESSARY IN ANTICIPATION OF THE APPEARANCE OF CHOLERA.

Necessity for constant attention to the sanitary condition of the Station.

1. The outbreak of cholera is often so sudden and virulent that all precautionary measures must be taken beforehand. Experience has shown that, like many other diseases, the extent of its diffusion is in no small degree dependent on local insanitary conditions, and it is, therefore, essential that every station should be preserved in a state of constant preparation to meet a danger which may come at any time. The personal cleanliness of the men is a matter of much consequence as a preventive measure.

Increased vigilance demanded if cholera threatens.

2. General and other officers in command should at all times give their utmost attention to the conservancy and general sanitary condition of a station. If an outbreak appears probable, every ordinary precaution should be attended

* The same principles as are contained in these Rules should govern the measures to be taken when cholera appears among *Native troops*; but as the disease rarely attacks them with any great severity, it is left to the military and medical authorities on the spot to determine in their case how far the procedure herein prescribed ought to be adopted under the particular circumstances.

to with increased vigilance; but if the disease has actually appeared in the cantonment or its vicinity, more harm than good is likely to arise from any attempt at improvement which may then be made. This is not the time to cleanse foul drains or to remove nuisances which may have hitherto been neglected, and such possible sources of disease should, in these circumstances, be left undisturbed.

Duties of Staff Surgeon and Cantonment Magistrate as regards the Bazaars.

3. Whenever cholera is to be apprehended, the Staff Surgeon and Cantonment Magistrate should keep a special watch on the condition of the bazaars, and any case of cholera should be immediately reported to the Officer Commanding the Station. The register of deaths should be carefully scrutinized.

Precautionary measures in Barracks.

4. Especial care should be taken to prevent crowding in barracks and hospitals, and, when considered advisable during the hot season, a portion of the men should be permitted to sleep in the outer verandahs, or in tents pitched for the purpose in the vicinity of the barracks. If cholera threatens, even though the men may have the full regulated amount of space, they should be spread out as much as possible, advantage being taken of any spare buildings which can be conveniently employed.

5. The early treatment of premonitory symptoms is of very great importance, and of these looseness of the bowels is the chief. At seasons, therefore, when cholera threatens, and still more so when it is more than usually prevalent, Commanding Officers should give the most precise orders on this subject, and see that measures are taken for paying the most vigilant attention to the health of the men in barracks, and for treating there, or in observation wards entirely separate from the hospital, all slight cases of diarrhœa or other disease, which, if neglected, might pass into cholera. As the men during cholera time have a natural dread of going into hospital, and are apt on this account to conceal the early symptoms in order to escape being sent there, it is of importance that every facility for the immediate treatment of diarrhœa should be afforded them in barracks. Non-Commissioned Officers in each room should accordingly be provided with suitable medicines, care being taken that the proportion of opium or any other dangerous drug should be small.

Sanitary measures necessary when new buildings are being carried on.

6. Whenever new buildings are being carried on, it is most important, with regard to the health of their future occupants, that the ground and water in the neighbourhood should be protected from pollution. Special care must be taken that proper conservancy arrangements are organized for workmen, coolies, &c., and that the orders are strictly enforced. The workmen should not be allowed to sleep in or about barracks and other public buildings under construction. They can generally find shelter in the neighbouring city or bazaars; but, in exceptional cases, where no such facilities exist, temporary huts should be erected for them outside the boundary pillars.

Communication with infected localities to be prevented.

7. If cholera appears among the Native population in the neighbourhood, communication with the infected locality should, as far as possible, be prevented. The same principle should be acted upon on all occasions during the continuance of the disease, for frequent communication with places where the disease is prevalent will always be likely to cause alarm and to produce bad results. As one valuable means of attaining this object, the provision of stores attached to the regimental canteen should be encouraged, so that soldiers and their families may be able to supply their wants without going to the city or bazaars.

Management of Native Soldiers returning from leave.

8. With the same object, Native soldiers rejoining from leave, or otherwise returning from a part of the country in which cholera was prevailing at the time of their residing in it, or passing through it, should not be allowed to rejoin their regiments until it has been shown that they are free from the disease. This can easily be done by pitching a tent for their temporary accommodation outside cantonments when required.

Military and Sanitary Authorities to make themselves acquainted with the country in the neighbourhood of their Stations.

9. Officers Commanding Divisions, Districts or Stations, as well as all Sanitary Officers, will make themselves thoroughly acquainted with the ground in the neighbourhood of their stations to the extent of twenty miles, with a view to the selection of sites for encampments in the event of cholera appearing, as well as to such measures being taken as they may deem advisable to remove or counteract any probable source of disease.

Officer of the Quarter Master General's Department attached to the command to prepare plan of the neighbouring country.

10. The Officer of the Quarter Master General's Department attached to each command will prepare a plan of the required extent of country, on a scale of one inch to the mile, with the different encamping grounds marked on it, so that the troops may be placed under canvas without delay, whenever such a measure is considered advisable.

Points to be attended to in choosing encamping grounds.

11. In selecting these encampments, enquiry should be made into the previous character of the neighbourhood with regard to liability to cholera or exemption from it. The ground should, when possible, be high, with natural facilities for drainage, with a plentiful supply of good water, and, if possible, easy of access. Although rank vegetation is objectionable, the presence of large trees should be considered advantageous, because they add to the salubrity of the air, and because their shade will be valuable.

Number and situation of such grounds.

12. The circumstances of different cantonments vary so much that no definite rule can be laid down either as regards the number of such encamping grounds or their situations; but it is very desirable that several such places should be selected, and that their distance from cantonments should vary, some being close at hand and others further off.

Selection can best be made in the rainy season.

13. The greatest care is necessary in selecting good sites, and this can only be properly done during those days in the rainy season when sudden and heavy falls of rain afford ready and reliable proof as to the real suitability of any spot for a camp. The selection should be made in communication with the local civil authorities, whose knowledge of the locality will enable them readily to point out the most eligible sites.

The use of selected camps obligatory, except when suitable buildings are available.

14. When sites for camps have been selected and approved by competent authority, care must be taken that they are always kept in a fit state for occupation, and it must be understood that, in the event of the troops going under canvas, these are the places which, as a general rule, are to be used. If, however, during the hot and rainy seasons, any buildings entirely separate and away from cantonments are available, they should be used in preference to

placing men in camp, especially when the ground is either covered with water, or when it is drying up in the months of August and September.

Encamping grounds on great lines of communication are objectionable.

15. The existing encamping grounds, which are ordinarily used by troops on the march, are very commonly situated upon great lines of communication, and are therefore objectionable, for bodies of men supposed to be infected with disease ought always to be isolated as much as possible. For the same reason, if the supply of good water and other circumstances admit of a choice, the vicinity of a village, and especially of any large village, should be avoided.

And should only be resorted to when no others are available.

16. It may sometimes happen that these encamping grounds must be resorted to, either because no other places suitable in themselves can be found, or because during the rainy season they are the only ones easily accessible; but, when it is possible, ground not in the vicinity of great thoroughfares should be preferred.

Expense of preparing the encamping grounds need be very little.

17. In some instances, a slight expenditure may occasionally be requisite in clearing the ground, in improving its drainage, in increasing or improving the water-supply, or in making it easy of access, and these, especially the two first, are matters of very great importance, which should receive frequent and careful attention. If ground be judiciously chosen, the expense need be very little.

Construction of earthen platforms not considered generally necessary.

18. As the sites will be selected almost with the certainty of their being required during the rainy season, they must be in themselves tolerably high and well-drained; the construction, therefore, of raised earthen platforms at these camps is not, as a rule, considered necessary, but where the nature of the ground is such that a dry site cannot otherwise be obtained for pitching the tents, the circumstances should be especially reported to the Quarter Master General, and sanction solicited for any such works of this nature as may be deemed advisable.

Selection of encamping grounds on the line of railway.

19. In all divisions or districts on the line of railway, encamping grounds, in addition to those already referred to, will be selected in suitable localities within fifty or seventy miles of military cantonments on these lines, in order that, should it be considered expedient, regiments or detachments may proceed thence by rail in the hope of getting clear of the radius within which the epidemic may have pronounced itself. In selecting these grounds, the general principles already laid down should be adhered to, but as carriage from the line to the encampment may frequently be a matter of difficulty, the spots chosen should not be further than one or two miles from the railway, and, if possible, in its immediate vicinity.

SECTION II.

MEASURES TO BE ADOPTED ON APPEARANCE OF CHOLERA.

General preparations.

20. On cholera appearing, either in the neighbouring villages or in the cantonments, the authorities must be prepared for immediate action; every ordinary sanitary precaution must continue to receive increased attention, and every necessary measure prepared for placing the troops under canvas, should this be required. Everything must, as far as possible, be considered beforehand, so that, when the necessity occurs, there may be no doubt regarding the course

to be pursued, and no reason for delay. The most suitable encamping grounds must be decided on, the vicinity of places in which cholera is prevalent being, of course, scrupulously avoided. General and other officers in command should act in anticipation of sanction on their own responsibility, and on the advice of the senior Medical Officer, reporting fully at the same time to the Quarter Master General, for the information of His Excellency the Commander-in-Chief, the measures they may have adopted to arrest the progress of the disease.

Preparatory camp.

21. If cholera has been prevalent in the neighbourhood, and there is therefore reason to fear that it may attack the troops, a preparatory camp should at once be formed. This need not ordinarily be done until the disease has actually appeared in the cantonment; but if more than one case occur among the European soldiers or their families under such circumtances as have been above stated, the formation of the preparatory camp should be considered imperative. Tents should be pitched at the nearest selected ground, which, if possible, should not be further distant than two or three miles from the cantonments, so that all may be in readiness for a move in case it may be necessary. The size of this camp will, of course, depend on the strength of the garrison and other circumstances. In some cases it will be advisable to provide for a proportion of the whole garrison, in others only for part of a particular regiment or battery. The exact size of the camp must be decided by the local authorities after a full consideration of all the facts and of the amount of danger to be anticipated. The previous history of the station as regards cholera will afford valuable data on this point.

All unnecessary alarm should be prevented.

22. All unnecessary alarm among the troops or the community should be prevented, yet every arrangement should, under the authority of the Officer Commanding, be made by the Commissariat Department in connection with the civil authorities for providing the carriage required to convey tents and baggage to and from the encamping grounds or railway stations, so that it may be at once available in case of its being required.

Military authorities to send to other stations intelligence regarding outbreak and progress of cholera.

23. It is of the utmost importance that every station should receive notice of the possible approach of danger, and whenever cholera shows itself at a station or in a district, the fact must be at once reported by telegraph, when practicable, to the neighbouring stations. Information must also be sent from time to time of the progress or cessation of the disease, any circumstances being noticed the knowledge of which may appear likely to be useful at other stations. These reports may be always made in a few words, and need give but little trouble.

Military and Civil authorities to communicate freely with each other regarding outbreak and progress of cholera.

24. All information received by the military authorities should be at once communicated by them to the chief civil authorities of the District, who in their turn must be held responsible for obtaining immediate notice of the outbreak of cholera in their jurisdiction, and of communicating the fact to the military authorities without delay.

Transmission of information need cause no alarm.

25. The transmission of information regarding cholera need cause no alarm. If it be thought necessary, the reports may be considered confidential, but it is believed that this will seldom or never be desirable. The knowledge

that the attack of the disease is considered possible will be far more likely to produce beneficial than mischievous results, and the belief that the authorities are alive to the danger and prepared to meet it, will tend to allay rather than to increase unnecessary alarm.

Utmost unanimity in all departments and hearty coöperation with the civil authorities essential.

26. The utmost unanimity is essential in all departments to give effect to the above recommendations: all should work cordially for the public good and in constant communication with the civil authorities, whose hearty coöperation is especially needed with regard to the supply of carriage. They should use every lawful means to prevent delay in obtaining carriage for the troops, as the loss even of a few hours in moving troops away from a station may lead to most serious consequences. On all occasions every use should be made of the moveable column carriage. All movements of troops and changes of camping ground should be at once reported to the civil authority of the District.

Telegraphic communication to be made daily to the Quarter Master General during the continuance of cholera.

27. On the appearance of cholera at any station, and during its continuance, the officer in command of that station is to report daily, by Telegraph, when possible, to the Quarter Master General, for the Commander-in-Chief's information, giving the number of admissions into hospital, the class of persons attacked, and the number of deaths in each corps at the station. Directions to be observed in despatching telegraphic messages are given in Appendix A.

Every effort to be made to provide means of healthy amusement and occupation for the soldiers.

28. Special attention should be paid to everything which can tend to the improvement of the general health of the men. Every effort should be made to relieve them from duties which cause needless exposure and fatigue, and especially to avoid night duty, so far as this may be possible with due regard to military considerations; to ensure that their food is wholesome and their clothing appropriate; and to promote every means of healthy amusement and occupation.

Use of spirituous liquors to be guarded against.

29. It often occurs that soldiers, on a visitation of cholera, indulge in the use of spirituous liquors under the impression that they are a preventive against the disease. Medical authorities unanimously condemn this baneful practice as a certain promoter of the disease, and Commanding Officers should, therefore, exert their influence in every way to prevent it.

Abandonment of buildings in which one or more cases of cholera has appeared, and arrangements for accommodation of the inmates.

30. On a case of cholera occurring in any building occupied by European troops, the room, or portion of the building in which it occurred, should be IMMEDIATELY vacated, and, except for the purpose of purifying it, no one should be allowed to enter it,—if the whole building can be left, it will be still better. This is laid down as an absolute rule; for, although individual cases of cholera sometimes occur when there is no reason for anticipating an outbreak, instant removal from an infected spot is the best safeguard; and besides it is necessary that the room or building in which the disease has shown itself should be vacated for the purpose of being purified. When men, under the above circumstances, are removed from a building supposed to be infected, they must be kept separate so far as may be possible, from the men among whom the disease has not shown itself, and, in arranging for their accommodation, care must be taken that there shall be no overcrowding either of them or of others. Should no separate buildings be available, it is desirable that they be placed under canvas.

31. In carrying out this rule, it is not, however, necessary that the tents should be pitched in one of the encamping grounds. They may be placed in some convenient spot in the cantonment; and where only an individual case has occurred among the body of men so removed, this arrangement will, as a rule, be the best which can be adopted.

Purification of vacated buildings.

32. When any case of cholera occurs, even though it may be but a solitary case, the room in which the disease has shown itself must be thoroughly purified without the least delay. The walls, floors, and punkahs should be scraped and white-washed; the wood-work should be subjected to the action of hot caustic lime-wash, furniture and ropes washed, punkah-fringes boiled, and generally everything possible done for the purification of the building; the latrine, urinary, and wash-house used by the man who was attacked should be instantly closed, and their use must not be permitted until they have been completely purified. Chloride of lime, Condy's fluid, or some other chemical disinfectant should be freely used. All filth and rubbish from the latrine must be burried at a distance, and all vessels used for their removal must be carefully cleaned and disinfected at the place where the refuse is deposited. Until the purification of the buildings is complete, the troops must under no circumstances be be allowed to re-occupy them.

Buildings vacated on account of cholera when to be re-occupied.

33. Ten days after removal, and when the room or building which was vacated has been purified in the manner above described, it may be re-occupied, provided no other circumstances have occurred meantime which may render such re-occupation undesirable. On this point the opinion of the principal Medical Officer on the spot must be taken.

Procedure to be adopted on the occurrence of further cases.

34. If a second case of cholera appears among the particular body so removed, they should be again moved, and the infected building or tent which they occupied should be at once vacated and purified. If a third case occur among this particular body within one week from the occurrence of the first case, then the men composing it should be immediately removed from the station to the preparatory camp.

35. The procedure here laid down, if carried out with promptitude in successive instances, will often be found sufficient to arrest the further spread of the disease; but when cases occur in several buildings, either simultaneously or at short intervals, and especially if there be at the same time any unusual prevalence of diarrhœa, an outbreak of cholera is seriously to be apprehended, and it will, under such cirumstances, be advisable at once to remove the inmates of infected buildings to the encampment outside cantonments.

36. It is to be remembered that, when an outbreak threatens, removal from the infected locality is the only remedy in which any confidence can be placed, and that the earlier the movements are carried out, the greater will be the chance of success.

As a rule, only such buildings to be vacated as have actually presented cases.

37. Cholera evidently attaches itself to particular localities. The principle to be borne in mind, therefore, is that the particular locality in which cholera shows itself must be looked upon as dangerous, that it must be immediately abandoned and all communication with it stopped, and that the body of men who have been exposed to danger by their occupation of the place in which the cause of the disease is presumed to be present, must be separated from the rest of the troops. If, for example, this body consists only of the inmates of some one building, the measure need only be applied to them; if some particular

battery, troop, or company be attacked, it will be similarly dealt with. A whole regiment or the whole of the troops at the station need only be sent into camp when it is found that the measures already adopted have not stopped the progress of the disease, or there is reason to fear they will be insufficient. As a rule, it is necessary only to vacate such buildings as have actually presented cases.

Detachments to be kept separate.

38. When separate detachments are moved into camp in the manner indicated, it is advisable that they should be kept distinct as far as possible. Officers commanding stations are authorized to call freely for medical aid from other stations, districts, or divisions free from cholera. And, where a separate hospital establishment cannot be assigned to each party, it may be convenient to place a hospital in some central position not far removed from two or more camps, the sick from which may be treated together. Such arrangements must be left to the decision of the local authorities. A central cholera hospital should on no account be established in cantonments for the reception of cases from camp and other quarters.

Special preparations necessary on appearance of cholera at stations on the line of railway.

39. On the first appearance of cholera at any of the stations on the line of railway, intimation should be given to the railway officials of the probabilities of a movement being required, in order that the necessary trains may be in readiness, so that if any move be decided upon, it may be carried out without delay. Tents should also be forwarded by rail and pitched at the selected camp.

No move by rail to be made without sanction from Army Head Quarters.

40. As, however, all stations on the line of railway are in telegraphic communication with Army Head Quarters, no move by rail should be made without the sanction of His Excellency the Commander-in-Chief, obtained through the Quarter Master General, every preparation being meanwhile made in anticipation, and the troops, if necessary, being moved temporarily into a convenient camp.

All movements by rail to be made during the day.

41. In travelling by rail it will be better to select the day than the night. On no account are cases of cholera or diarrhœa to be placed in a railway carriage, and any persons who have come in contact with such cases should have their clothes fumigated with sulphur, and their hands and other uncovered portions of the body washed with a solution of McDougal's disinfecting powder before starting.

Camps at station of departure and arrival.

42. In some cases, to avoid fatigue, it may be advisable to encamp the men close to the station of departure, so that they may start by rail in the early morning, and they may encamp again for a night close to the station of arrival before going on to the selected ground next morning.

Trenches should be dug at convenient intervals on the line.

43. Previous to detachments proceeding by rail, the military authorities must arrange for trenches being dug in the vicinity of one or two of the stations at convenient intervals on the journey, so that all discharges may be received in them. The troops on no account should be allowed to use the railway station latrines.

Purification of carriages occupied by troops.

44. After occupation by the troops, and in the presence of the Railway authorities, all the carriages which must be only those of the 2nd and 3rd class, are to be washed under regimental arrangements with boiling water, containing

in each gallon a wine glass-full of carbolic acid, after which sulphur should be burned in each, and the doors and windows kept closed on the sulphur fumes for two hours. These disinfectants must always accompany the troops, and their supply be ensured by the medical authorities.

Conservancy of camps.

45. As the movement will be made in the hope that the troops may be in this manner carried out of the infected area, the camp will probably be occupied for some time, and the strictest possible attention should be paid to the conservancy, trenches should be dug to leeward, tents pitched over them, and all filth instantly covered with earth. A similar system should be adopted for the camp followers and other Natives. The strictest regulations must be laid down and enforced by the commanding officer to ensure attention to this all-important point.

Arrangement of the camp.

46. In arranging the camp the tents should be spread over a large area, and any military considerations or regulations in regard to distances between tents should give place to the desirability of allowing free ventilation so far as this can be done with convenience. Tents should not be pitched immediately under trees as they prevent the free access of air at night, and during the rains prevent their drying.

Number of men in a tent.

47. As a rule, not more than eight men should be placed in each tent.*

Immediate benefit from change not always to be expected.

48. Immediate benefit is not always to be expected from the movement into camp, and the occurrence of a few cases of cholera ought not to be looked upon as proof that the change has proved a failure. It is clear that men often take with them the seeds of cholera, and although the immediate cessation of the disease is by no means uncommon, it is unreasonable to suppose that this will be always the case. Even if the first apparent result be an aggravation of the disease, this need cause no discouragement.

Removal of camps—marches to be short.

49. If the disease continue to be virulent for more than three or four days, a fresh encamping ground may be tried, either on the line of rail, or by a short movement, at right angles, if possible, to the prevailing wind, or track of the disease. The marches should always be short, if possible not more than two or three miles; movements should generally be made in the morning, in time to admit of the new ground being reached soon after sunrise, but if the march is very short, it may be made in the evening, whenever the delay of a night is regarded as an unadvisable risk. The men will be supplied with hot tea or coffee before starting; they will invariably wear flannel belts, and every precaution must be taken to prevent their remaining in damp or wet clothes, especially when the movements are made by rail. It is of the utmost importance that fatigue and exposure should be avoided, and everything possible should be done to keep the men cheerful and in good spirits.

* This rule is to be read in connection with No. 66. It is by no means intended that every regiment should be provided with a double supply of tents. The necessity for vacating *all* the buildings in a station which are occupied by the troops will rarely occur. Experience has shown that many stations have not suffered from cholera with any severity for years, and to provide extra tents for them would therefore be unnecessary. Again, there are other stations which are on the line of rail, and which can thus be supplied with extra camp equipage if required on very short notice. In such stations, whenever cholera appears, notice should be given to the nearest magazine, that tents may perhaps be needed; and when it seems that those on the spot are likely to prove inadequate they can be telegraphed for. In a third class of stations there is an arsenal on the spot.

Isolation of camp hospitals.

50. If any case of cholera or diarrhœa occurs in camp, isolation and disinfection should be had recourse to, and all communication between the camp and any neighbouring station or village should be interdicted. The hospitals in particular should be isolated to as great an extent as may be practicable.

Separate hospitals in camp.

51. When all the troops in a station are sent into camp on account of an outbreak of cholera, all ordinary sick capable of being removed without evident danger should go into camp also; the few patients who cannot possibly be moved should be transferred to one small general hospital, which will usually be found sufficient for all those who must remain in cantonments. Separate hospitals should always be organized in the camps, and under no circumstances should patients be brought for treatment from the camps to a hospital in cantonments.

Cots to be taken into camp.

52. When considered desirable by the principal medical officer on the spot, cots are to be taken into camp for all the men, so that there may be no necessity for their sleeping on damp ground. In the event of carriage being insufficient for the regular cots, the Commissariat Department will usually be able to arrange for the supply of light Native charpoys, which answer admirably. Should the season of the year not necessitate cots being taken, straw will be supplied, on requisition, by the Commissariat Department. If the troops travel by rail, the straw can either be taken in the train, or be furnished by the Commissariat at the selected camp.

Water-supply.

53. The utmost attention must be paid to the drinking water. At encamping grounds which have been frequently used, and which are situated upon great thoroughfares, caution will be especially necessary, and, if considered desirable, temporary wells must be sunk, so that there may be no danger of water contaminated by organic matter being supplied to the troops. As a precautionary measure, the water used for drinking should be boiled, and as the taste of water subjected to this process is insipid, the reason for this proceeding should be carefully explained to the men. It is left to the local military and medical authorities to decide whether the filters belonging to British regiments are to be taken with them when the troops are moved into camp on account of cholera or not.

Wood-fires to be maintained when necessary.

54. Wood-fires may be maintained to the windward of camp when considered necessary by the medical authorities.

Return of troops to cantonments.

55. It not unfrequently happens that troops are allowed to return far too soon to cantonments or to buildings which have been infected with cholera, and the consequence is the re-appearance or aggravation of the disease. The return to cantonments must only be allowed with the greatest caution. No part of the cantonment from which the disease has not altogether disappeared should be re-occupied. Under no circumstances can the re-occupation of any building which has been attacked by cholera be allowed, unless at least ten days have elapsed since the last case of cholera in the building, nor until every measure for the purification of the building, as laid down in paragraph 32, has been carried out. The prevalence of fever or other diseases in camp is no reason for returning to cantonments while danger from cholera remains. It must be accepted as the lesser evil of the two.

All movements to be communicated by post to the Quarter Master General on the day of occurrence.

56. Officers in command of stations are required to communicate by post to the Quarter Master General on the same day the occurrence takes place all movements of troops, including changes of camping grounds consequent on cholera or other sickness, stating the number and class of persons attacked, the number of deaths, and any other matter appertaining to the Quarter Master General's Department.

Weekly communications to be made to the Quarter Master General during the continuance of cholera.

57. During the continuance of cholera at any station, the officer in command is to report by post weekly to the Quarter Master General, for the information of His Excellency the Commander-in-Chief (with respect to the steps to be taken for the mitigation of the evil), on the general sanitary condition of the station, including bazaars, and on the health of the population around on a considerable radius. The report should state in detail the number of cases, the class of persons attacked, the number who may have died, and the general character of the disease, whether virulent or not.

Returns required from Batteries of Royal Artillery and Regiments of British Cavalry and Infantry.

58. When cholera appears at a station, the following returns are to be kept by regiments of British Cavalry and Infantry and Batteries of Royal Artillery:—No. 1 is to be furnished daily by medical officers to the officer commandig the regiment or battery, as the case may be, for the information of the officer commanding the station, and a duplicate to the Deputy Inspector General of Hospitals, Her Majesty's British Forces. At the termination of the epidemic, the Nominal Register (Form No. 2) is to be submitted to the Deputy Inspector General of Hospitals, and by him forwarded for the information of the Inspector General.

No. 1.

*Morning State of Cholera in the*_____

STATION_____, *Date*_____

DISTRIBUTION OF CORPS.		Strength.	CASES OF CHOLERA.						Remarks.
			Remained.	Admitted during the last 24* hours.	Total.	Discharged.	Died.	Remaining.	
In Cantonment Barracks.	Officers								
	Men								
	Women								
	Children								
	TOTAL ...								
In Camp in Cantonments.	Officers								
	Men								
	Women								
	Children								
	TOTAL ...								
In Cantonment Hospital.	Men								
	Women								
	Children								
	TOTAL ...								
In Camp at	Officers								
	Men								
	Women								
	Children								
	TOTAL ...								
In Camp at	Officers								
	Men								
	Women								
	Children								
	TOTAL ...								
	GRAND TOTAL ...								

* This should include the 24 hours from 8 A. M. to 8 A. M., so as to give the latest information. It should be made up after the Surgeon's morning visit to hospital.

Summary.

	Strength.	No. of cases previously reported.	No. since admitted.	Total.	No. of deaths previously reported.	No. since last report.	Total deaths.	Number remaining.
Officers								
Men								
Women								
Children								
TOTAL ...								

Surgeon in Medical charge.

No. 2.

*Daily Nominal Register of cases of cholera during the year*_____

STATION_____, *Date*_____

Date.	Rank.	Name.	Age.	Company.	Previous health.	Habits.	Period of service in India.	Whether married or single.	Hour of admission.	Date and hour of attack.	Whence admitted.							Result.				Remarks.
											Barrack No.	Married quarters No.	Hospital and cause of original admission.	Camp at	Camp at	Camp at	Camp at	Died.			Recovered and date.	
																		In stage of collapse.	In stage of re-action.	How long after admission.		

Surgeon in Medical charge.

This Register should include all officers, men, women, and children attacked.

D

Return required from Regiment of Native Cavalry and Infantry.

59. From regiments of Native Cavalry and Infantry Return No. 1 only will be required.

Special report required on disappearance of disease.

60. On the disappearance of the disease, officers commanding divisions and districts in which cholera has recently occurred among the troops are required to submit a special report (in duplicate) to the Quarter Master General for the information of His Excellency the Commander-in-Chief, showing in detail the number of cases, the class of persons attacked, and the number of each who have died, the general character of the disease, and whether any and what extra expense was caused to Government by movement into camp, &c.

Return required showing the further progress of the disease among the inmates of any particular building that has been vacated.

61. In all cases where buildings have been evacuated on account of the appearance of cholera, a very careful record of the further progress of the epidemic among the individual body of men, women, and children who occupied each building so vacated should accompany the above report, prepared according to the following form:—

Progress Report of cholera at _____ in Her Majesty's _____ Regiment, submitted in accordance with No. 61 of the revised Rules regarding measures to be adopted on outbreak of cholera.

STATION.	Corps.	Number or name of building.	Number and detail of occupants.	Date of first case.	Date of evacuation of building.	Number of cases before evacuation.	Number of cases among those occupants after evacuation.	Date of re-occupation.

Surgeon in charge.

Commanding Regiment.

Information required as to size and relative position of huts occupied by Native troops attacked by cholera.

62. When cholera has appeared among Native troops, full particulars are required as to the size and relative position of the huts of each Native regiment which suffered from the disease; the exact accommodation allotted to the several ranks should be shown, and the nature and description of the several buildings should be specified.

Report of any expense incurred for hiring bungalows, &c., to be made at once.

63. When it has been found necessary to incur any expense, such as the hiring of bungalows, &c., for the benefit of the troops during the prevalence of cholera, a special report, giving every particular, should be at once made to the Quarter Master General for the information of His Excellency the Commander-in-Chief and of the Government.

Tents are to be retained for regimental purposes only.

64. Tents belonging to a regiment are to be retained in all cases for regimental purposes, and are not to be lent to the civil authorities for the use of prisoners in the event of epidemics breaking out in jails, or on other occasions.

Oldest and least serviceable tents to be used for cholera cases.

65. When tents are required for cholera cases among the troops, the oldest and least serviceable must be selected, provided they are fit for the purpose.

Supply of camp equipage.

66. In most cases, the established proportion of camp equipage will be sufficient to accommodate that portion of the garrison which it may be necessary to move into camp. Extra camp equipage should, therefore, not be indented for unless the epidemic should prove severe, and render it probable that a larger proportion than half the garrison may have to be removed from cantonments. When the necessity for this has been admitted, Commanding Officers are to indent on the nearest magazine for such additional camp equipage as they may require; the indents to be countersigned by the Deputy Inspector General of the Circle, or the senior Medical Officer on the spot, and by the Officer Commanding the Station.

Hospital management.

67. The question of hospital management during the prevalence of cholera is one of urgent importance. No sanitary precaution must for a moment be neglected; no approach to anything like crowding must be permitted; all unimportant cases, the treatment of which in hospital is not essential, should be discharged; every case in hospital must be carefully watched; and it must be borne in mind that in very numerous instances it is in the hospital, among patients under treatment for other diseases, that cholera first appears. Precautionary measures in the hospitals must be commenced, whenever it may be possible, before the actual appearance of the disease; and, as laid down in paragraph 5, all slight symptoms of disease must be treated in the barracks, or in observation wards entirely separate from the hospital.

Separate temporary hospital to be prepared for cholera cases.

68. If no separate building can be set apart as a temporary hospital, tents should be pitched for the purpose in some convenient place at a little distance. Every arrangement must be made, so that if a case of cholera should occur, it may be immediately removed there, and not be treated in the regular hospital. For the treatment of patients suffering from cholera, tents are unobjectionable at all seasons of the year. The air in a tent is less likely to

become contaminated, and the ground can be changed as often as may be desirable. Medicines, and everything considered requisite for the treatment of the disease, should be prepared in the temporary hospital, and a portion of the establishment should be kept in readiness to be transferred there, so that if a case of cholera occurs, the means will exist for separate treatment, and subsequent communication with the regular hospital will be unnecessary.

Prevention of fresh cases more important than medical treatment.

69. If in spite of every effort, the sub-division of hospital establishment should lead to difficulty in the medical treatment of the disease, this must be accepted as the lesser of two evils; for it must be always remembered that the main object during an epidemic of cholera is the prevention of fresh cases much more than the treatment of those who have already been attacked; that prevention is often possible, but that treatment is almost useless after virulent symptoms have appeared.

Separation of cholera patients and abandonment of hospital buildings if cholera occur in them.

70. No patient attacked by cholera should ever, under any circumstances, be placed in the same ward with patients suffering from other diseases. If a patient in hospital suffering from another disease be attacked with cholera, or if a case occur among the hospital attendants or others, the same system must be adopted as has been ordered in the event of cholera appearing in other buildings occupied by troops. The ward in which the case has shown itself must be IMMEDIATELY abandoned, and every precaution laid down with respect to other buildings must be taken.

Funeral parties.

71. During the prevalence of cholera, funeral parties should be discontinued, and the band should not play at the burial either of officers or men.

Removal of cholera excreta.

72. Every effort should be made, during the actual treatment of the disease, to get rid, as completely as possible, of all the discharges from the sick or to render them innocuous. The vessels in which they are received should contain some powerful disinfectant; they should never be emptied into the usual receptacle, or carried to the common latrine, but taken away separately, and the contents thrown into a trench dug for the purpose and reserved for this use. A man should be constantly employed in the duty of throwing fresh earth over all filth the moment it is deposited, and all vessels should be thoroughly cleaned at the trench into which the filth is thrown.

Supply of extra articles of diet during prevalence of epidemics.

73. During the prevalence of cholera at a station, such changes in the diet and such other medical comforts are to be allowed to the troops as the Deputy Inspector General of the Circle or other principal medical officer may deem expedient. In directing these comforts to be freely supplied, particularly to the women and children, the senior medical officer on the spot will be required to exercise a wise discretion to avoid unnecessary expenditure, and to see that the indulgence is not abused.

Employment of Native servants in attendance on cholera patients.

74. On the occasion of an outbreak of cholera at a station, the entertainment of Natives to attend European soldiers in hospital suffering from that disease is authorized to such an extent as the local medical authorities may consider necessary—the men being provided on requisition by the Commissariat Department.

European soldiers to be employed on hospital duty as seldom as possible.

75. When the employment of European soldiers as orderlies in hospitals during the prevalence of cholera is considered unavoidable, men will be selected, as far as possible, by volunteering in such number as the medical authorities may deem necessary. The complete tour of duty shall in no case exceed 24 hours, and no man who is not in good health shall be thus employed. No orderly is to be kept in actual attendance in the hospital for a longer period than four hours at one time, nor is he to have a less interval of rest than six hours between successive tours of duty, whatever be the period of attendence in the ward. A room entirely separate from the hospital buildings must be provided for the accommodation of men relieved from attendance on the sick, in which they can remain until their tour of duty again comes round. Men not upon actual duty are not to be allowed to remain in the hospital. The strictest precautions must be taken to prevent men employed in the hospital from making use of the latrines, urinaries, or wash-houses used by the sick in hospital. The utmost care must be taken that the hands of all attendants on cholera patients be scrupulously cleaned by means of sand and water containing some disinfectant, or other thoroughly efficacious means; and that if the clothes of any of the men should become soiled by cholera discharges, they be at once taken off and thoroughly purified. Every man employed as a hospital orderly in attendance upon cholera patients is to be provided with tea or coffee before and after each tour of duty.

Female nurses for attendance on women and children.

76. For attendance on women and children suffering from cholera, Native female nurses should, if possible, be procured.

Removal of the sick and of the dead.

77. Careful arrangements must be made for the removal of the sick from the barracks to the hospital, and on no account should the doolie employed for this purpose be made use of for the removal of the dead.

Purification of bedding and clothing.

78. All bedding and clothing used by cholera patients which can be subjected to this process must be immediately purified by being boiled for quarter of an hour in water. There is no difficulty in boiling such articles as bed-tape *(newar)*, blankets, and linen. The bug-boilers offer facilities for boiling the cots. Rezais and other such articles which can never be thoroughly cleansed should be burned.

Purification of cots and punkah-fringes.

79. Cots and punkah-fringes which have been used by cholera patients, or in wards set apart for them, should be subjected, in a similar way, to the action of boiling water when they are no longer required for such cases.

Purification of tents.

80. Tents used by cholera patients before being struck, should be disinfected by one or other of the following gaseous disinfectants:—chlorine, nitrous acid, or sulphurous acid, and then left exposed to the weather for ten days. Tents which have been used for cholera purposes in camps within cantonments, should first be removed to an out-of-the-way but airy spot outside, and then subjected to the process of fumigation.

Burning only to be resorted to when thorough purification cannot be at once carried out.

81. It will only be necessary to burn such articles as bedding, body linen, cots, and punkah-fringes when their thorough purification cannot be at once carried out in the manner above laid down, but with proper arrangements this destruction will rarely be required.

Rules applicable to women and children.

82. It is to be distinctly understood that the above Rules are equally applicable to the women and children if cholera should appear in their quarters, and that they are to be as strictly carried out; but endeavours should always be made to assign available buildings to them, so that the necessity of moving them into camp may, if possible, be avoided.

Measures to be adopted on the appearance of cholera in the sudder or regimental bazaar.

83. On the appearance of cholera or any other epidemic in the sudder or regimental bazaar of a station, arrangements should be made for the isolation and treatment of the cases. One or more grass huts should be placed on the outskirts of Cantonments in a convenient and selected position, a fresh site being selected weekly, as the ground becomes contaminated and proves a source of danger. Stringent orders should be issued to ensure all cases of the disease being sent to this isolated hospital for treatment.

Station Staff Surgeon to have charge of the hospitals for Natives.

84. The hospital will be under the medical charge of the Station Staff Surgeon, or other medical officer selected by the Deputy Inspector General of Hospitals, and the establishment as per margin, to be increased if necessary, will be attached to it—the servants to be discharged on the subsidence of the epidemic.

1 Native Doctor.
1 Compounder.
1 Cook.
1 Bheestie.
2 Sweepers.
1 Doolie with 4 bearers.

Expenses to be defrayed from Cantonments Funds.

85. When cantonment funds can be made available, without withdrawing them from such measures of conservancy as may be considered of even more importance, all expenses incurred by the establishment of these temporary hospitals, including the dieting of the patients, if that be also involved, should be defrayed by them, the primary object of such funds being to secure the proper sanitary condition of a station in every possible way.

Record of buildings and camps in which cholera occurs.

86. As experience in such matters is of great value, a careful record should be preserved in the Brigade or Station Staff Office showing the number of cases occurring in each building, and the number of attacks in the different camps.

SECTION III.

OTHER POINTS REQUIRING THE SPECIAL ATTENTION OF MEDICAL OFFICERS.

Investigation into the circumstances of the first case.

87. In any epidemic, it is of the greatest importance to ascertain all the circumstances connected with the appearance of the first case; and a very careful investigation should be made at once in order to discover, if possible, whether it was due to importation. Such enquiries, if delayed, are usually unsatisfactory.

Condition of camp followers.

88. The condition of the camp followers, of the punkah coolies, and others who come about the barracks should receive attention, and orders should be issued that any suspicious cases occurring among them be reported, so that they may be at once investigated. With the assistance of the Non-Commissioned Officers, such cases of sickness should not escape detection. Arrangements should be made for the early treatment of those attacked either in camp or cantonments, and where the general cholera hospital for Natives is distant, measures

should be adopted for attending to their wants on the spot. A careful note of all such seizures and of the circumstance under which they occur should be preserved.

Abolition of the term "choleraic diarrhœa."

89. In the forms now adopted, the term "choleraic diarrhœa" has been abolished. All such cases distinguished by rice-water evacuations should be returned as cholera.

Disuse of the words "sporadic" and "epidemic."

90. It is very desirable that the terms "sporadic" and "epidemic" should not be used in connection with reports of cases of cholera. There is no means of distinguishing between the two, and the exact significance of individual attacks can be known only when all the facts regarding the prevalence of the disease throughout the year have been ascertained and considered as a whole.

Cholera cases not to be returned as "discharged" until all symptoms of the disease have disappeared.

91. In some instances, cases of cholera in which reaction has taken place have been discharged, and the fatal event which afterwards occurred recorded under the head of fever. This system produces great error in the statistics, and it ought on no account to be followed. No cases of cholera should be "discharged" until every symptom, either directly or indirectly due to the disease, has disappeared.

A lull in the number of cases not to lead to any relaxation of precautionary measures.

92. When no cases of cholera have occurred for several days, an opinion is apt to prevail that the disease has disappeared, but it must be remembered that at certain seasons a lull is to be expected. This generally occurs in the early part of the monsoon. With regard to it no decided rule can yet be laid down, but it is important that the fact of there having been no cases for some time should not lead to any relaxation of the necessary precautions and preparations in anticipation of a further and generally more severe outbreak.

Effect of upper-stories on proportion of attacks.

93. As it is important to ascertain the effect of upper-stories in warding off attacks, a daily register in the annexed Form should be kept:—

DATE.	Number occupying upper-stories on that day.	Number of attacks in upper-stories on that day.	Number occupying lower-stories on that day.	Number of attacks in lower-stories on that day.	REMARKS.*

* In the remarks, the case of any man lately on guard, or particulars regarding other influences which may have caused the attack, should be noted.

SECTION IV.

RESPONSIBILITY OF COMMANDING OFFICERS.

The Rules to be carried out by the Officer Commanding the Station.

94. On the officer commanding the station will devolve the responsibility of having all the directions contained in these Rules, as regards the evacuation and purification of buildings, the movements into camp and all other details, carefully carried out.

Discretionary powers of Officers in Command.

95. These Rules, founded on the general experience of the past, must be considered as the guide on all ordinary occasions. As in outbreaks of cholera, however, so much depends on the judgment and action of general and other officers, they must exercise their own discretion whenever extraordinary emergencies or unforeseen circumstances occur, and, in consultation with the senior medical officer, must take upon themselves the responsibility of action incumbent on their position.

Whenever it may be considered advisable to deviate from the procedure prescribed in these Rules, a special report explaining fully the reasons for so doing must be forwarded to the Quarter Master General for the information of the Commander-in-Chief.

SECTION V.

Rules regarding the measures to be adopted on the appearance of small-pox among British or Native troops.

I.—Whenever a case of small-pox appears among either British or Native troops, it should be immediately isolated, and all communication between the sick person and others, whether direct or indirect, should, as far as possible, be prevented.

II.—In some cantonments a building, no longer required for other purposes, and occupying an unfrequented site, has been set apart for the reception of small-pox cases, and whenever such a building is available, the case should be at once removed to it.

III.—In those cantonments where no such building exists, the case must be removed either to a tent or to a grass hut.

IV.—As cases are most apt to occur in the hot months, a grass hut is in every way better suited for the purpose than a tent. If lined on the sides with a coating of mud, it affords very good protection.

V.—If, owing to the small number of sick in hospital or to other circumstances, a ward or other room well separated from the other patients, or other persons, can be made available for the temporary reception of the case, there is no objection to its being treated there during the first day or two of the disease when the eruption is still advancing, and its power of spreading to a distance is comparatively limited. Time will thus be allowed for the preparation of a grass hut.

VI.—If this course should have been followed, the room temporarily occupied by the case should be immediately purified in the manner described in Rule 32 regarding cholera.

VII.—Whether a tent or grass hut is employed, it should be pitched in some secluded spot, and the shelter of trees, if possible, secured.

VIII.—If a tent is used, the oldest and least serviceable should be selected.

IX.—Good tents should never be employed for the purpose, except in very exceptional cases, which should in each instance be explained.

X.—Unless there is an immediate prospect of their being further required, tents or huts used by small-pox patients should be destroyed by fire, in presence of a responsible person, as soon as vacated.

XI.—If there is an immediate prospect of the tent or hut being again required, it should be purified in the manner described as suitable for buildings in Rule 32 for cholera. It should then be left standing with the sides and doors kept closely shut down.

XII.—Bedding and clothing, cots and punkah-fringes, should be thoroughly disinfected as described in Nos. 78, 79 and 81 for cholera.

APPENDIX A.

Directions to be observed in despatching telegraphic messages regarding cholera.

I.—The message should usually be despatched soon after 8 A. M. so as to agree with the morning state. Form No. 1 required by Rule No. 58.

II.—The number of cases and deaths among men, women and children in each regiment of Europeans at the station during the preceding 24 hours, should be stated separately.

III.—The number of cases and deaths in each Native regiment should also be stated.

IV.—Particulars regarding camp followers or the city and bazaars should be given only when they are important as indicating the advance or decline of the disease.

V.—All particulars regarding movement of troops should be included in the message, and the condition of each detachment in camp.

VI.—When there is no Telegraph Station in or near the cantonment attacked, the message should be sent by Post to the nearest Telegraph Station.*

* As, in such stations, Telegraph Stamps are not generally procurable, officers are required to adopt the procedure set forth in Notification dated Calcutta, 22nd December 1868, paragraph 3, General Order dated 18th January 1869, *viz.* :—

"*Para.* 3. Telegrams can be sent from out-stations by Post, but they must be enclosed in registered covers; at stations where Telegraph Stamps are not procurable, they may be paid for by Postage Stamps at the rate of 17 annas to the Rupee. In such cases, the Post Office Registration Receipt will take the place of the ordinary Telegraph Receipt. If any telegram be received insufficiently stamped, it will be returned bearing to the sender."

VII.—The following specimens of telegrams are appended for guidance :—

From—Allahabad.	To—Army Head Quarters.
From—Officer Commanding.	To—Quarter Master General.

22nd March, one case, 58th Regiment, a soldier. Building vacated and disinfected.

25th March, twelve admissions from British and five from Native troops since yesterday's report.

All soldiers.

Artillery, three in Cantonment.

Artillery, one in Fort.

No deaths.

58th Regiment, eight in new barracks, six deaths, two companies moved to Camp Jhosee. Affected building vacated. Reports from city and district more favorable.

GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

TRADE BETWEEN INDIA AND THE GULFS OF PERSIA AND OMAN.

From LIEUT.-COL. L. PELLY, C.S.I., Her Britannic Majesty's Political Resident in the Persian Gulf, to the Secretary to the Government of Bombay, Political Department,—No. 86—34, dated Bushire, the 23rd April 1870.

IT may be in the recollection of Government that, seven years ago, I had the honor of submitting a few superficial observations concerning the tribes, trade, and resources around the shore lines of the Persian Gulf.

2. About a year ago I had the honor of submitting another report summarizing the general position and prospects of commerce in these regions.

3. More recently the obliging trouble of the Commissioners of Customs at Calcutta, Bombay, and Kurrachee, has enabled me to abstract in a reliable statistical form the commerce passing to and from those ports and the Gulfs of Oman and Persia.

A.—Statement showing the value of trade between Calcutta and the Persian Gulf Ports from 1860-61 to 1864-65, as compared with the year 1844-45 and 1868-69.

B.—Statement showing the annual trade between Bombay and the Persian Gulf Ports including Muscat from 1860-61 to 1868-69, as contrasted with that of 1844-45.

C.—Statement of exports and imports into the Province of Sind from the Persian Gulf Ports from 1861-62 to 1868-69, and from 1847-48 to 1854-55.

D.—Statement showing quantity of lead exported from Bombay to Persian Gulf Ports during December 1869, and January and February 1870.

4. His Excellency in Council will perceive that this commerce has developed rapidly and largely. It appears, for instance, that in 1844-45 the trade with Bombay showed a gross total of Rupees 79,24,609, that in 1860-61 it amounted to Rupees 1,31,42,602; while in 1865-66 it amounted to Rupees 3,44,37,408. In other words, that between the years 1845 and 1865 the trade quintupled itself, while it nearly trebled itself during the five years between 1861 and 1865.

5. From the Statement of Trade with the Port of Bombay concluding with the year 1869 it will be seen that the trade, as compared with 1865-66, being the highest year of the American war, had apparently fallen off; but this is accounted for by the fact that the cotton trade was abnormally large down to the conclusion of the American struggle; while, on the other hand, successive disturbances on the Arab coast between 1866 and 1869 have, of course, been injurious to trade; so that it may fairly be assumed that, under ordinary circumstances, the general trade would have continued to show a steady increase.

6. As regards Calcutta, it will be observed that the increase, as between the years 1864-1865 and 1868-69, was as follows,—Rupees 27,32,681.

I am anable to include the year 1844-45 in my comparison of this trade, since at that period it was not shown separately from the trade between Calcutta and the Red Sea.

7. As regards Kurrachee, the increase, as between 1847 and 1867, has been as follows,—Rupees 8,33,731.

8. The appended Statement (E) shows the most favourable total of trade, with the above-named three ports for any one year, has been as follows,—Rupees 4,05,55,796.

9. I have not enquired into the trade with Madras, because, although I believe that trade to be considerable, I understand that a large portion of it is indirect through Bombay, and thus, were the Madras trade shown, it might appear twice. It has seemed to me preferable to be rather under the mark than run the risk of exaggerating in statistical statements.

10. But the trade with these principal British ports by no means represents the total of trade with the Gulf, although I am unaware that there are any reliable statistics in regard to trade with other ports. But from the testimonies of numerous Native merchants, I think I am safe in submitting that the subjoined items do not over-estimate the export and import trade with miscellaneous ports:—

	Rs.
Malabar Coast	10,00,000
Cutch and Kattiawar	10,00,000
Jedda and Red Sea	12,00,000
Opium Trade with China, 2,500 chests at Rs. 1,200 per chest of 136 lbs.	30,00,000
Average annual value of Pearl Trade	75,00,000
Trade with Busreh, Baghdad, and Mesopotamian line in general	3,00,000
Trade with Zanzibar and African Coast	3,00,000
Trade with Mauritius—irregular	4,00,000
Trade with England and America in square-rigged vessels unknown, but unquestionably above	20,00,000
Trade with Java	20,00,000
Total Rs. ...	1,87,00,000

11. Thus the gross total of the export and import trade passing up and down the Gulfs of Persia and Oman appear to have totaled Rs. 5,83,55,796, or nearly 6,000,000 sterling, exclusive of the trade carried on in small coasting craft.

12. As affording a more detailed insight into the character of trade, I beg to append some very carefully-prepared Statements (F) with which I have been favoured by the firm of Messrs. Gray, Paul and Co., the Agents for the B. I. S. N. Company at Bushire. In forwarding these Statements to me, Mr. George McKenzie, of the same firm, has favoured me with the following remarks:—

"I now send the papers showing in condensed form annual and monthly shipments, which is, I hope, what you want. I am sorry press of work here prevents my making up like statements of *imports*, which, however, are not so important.

"These statements I send you to Bombay that they may be at hand should you at any time require same for reference.

"I regret exceedingly I cannot give you more serviceable statements showing the actual trade carried on at our ports in *all* kinds of craft. For mercantile purposes, as well as for Government information, such statements would be valuable, and to us, as traders, the want of same is much felt.

"As I said before, we are willing to do all such work, under the Residency, gratuitously in consideration of the personal benefits to be derived therefrom. It only remains for Government to give us the authority and power of gathering reliable statistics, which we would undertake to keep regularly and in proper form.

"Of course, the statements now handed you are not so satisfactory as I would wish. A three years' comparative statement is scarcely a fair criterion, but we have not the means of gathering reliable information for a longer period. What is sent is made up from our own books, and from the date of the firm's opening up here.

"The increase in 1868-69 is very considerable when one keeps in view the number of extra steamers we had running on the line for the past twelve months, besides sailing vessels, of which latter we have more than in former years.

"I would especially draw your attention to the column showing exports of specie, wherein you will observe the steady decrease. This we consider a favourable sign of the times showing the increased prosperity of the country, whereby their increased shipments of produce they are able to keep a better account with their Bombay agents, and prevent the necessity of remitting against imports.

"It cannot, however, positively be attributed to this cause, for the export of pearls, you will observe, is included. It is most unfortunate this was not kept entirely distinct from specie, but for the future this will be done where our steamers are concerned."

13. Of course, the trade referred to in Mr. McKenzie's letter is only steam-borne, and, as evidencing the development of this particular trade, I would recall that eight years ago no mercantile steamer ran in the Gulf; that since that period trading steamers have continued to increase both in number and in tonnage; that during last year the B. I. S. N. Co.'s steamerr of large tonnage ran fortnightly, while other steamers visited the Gulf during the summes and autumn so frequently as to give an average of a steamer per week.

14. I understand it to be in contemplation to run a line of steamers between England and the head of the Persian Gulf, *vid* the Gulf of Suez, and that a similar line is to be opened by the Turkish authorities between Constantinople and Busreh, while for the passage of goods up river I understand there are already some eight river steamers.

15. Referring to the opium trade, I beg to append an Abstract (G) comparing that for the year 1869 with 1868.

16. I append also a Statement (H) showing in detail the manner in which the opium has been exported last year. It is probable that some chests have been exported, of which I have not cognizance; and I understand from good authority that the export for the coming year is estimated at least 3,500 chests of about 136 lbs. per chest. This total is, of course, small as compared with the trade in India; but when we recollect that some fifteen years ago the export of opium from Persia was limited to some dozen chests or so, sent *vid* Constantinople, it must be admitted that the trade has rapidly developed, and that if the quality of the opium be improved, the direct export of opium from the Persian Gulf littoral to the eastward of Singapore may, at some future dates, in some degree affect our Indian opium revenue.

17. As regards the Statistical Statements obtained from the Custom Houses in India, it has not been found practicable to obtain them all for the same years and in uniform details; but I deem it, nevertheless, advisable to submit them in appendices, together with the remarks with which the several Commissioners have favoured me since they form as complete a basis as is obtainable for estimating the past trade with the Gulf.

18. The statistics of trade shown in this report do not (as before mentioned) include the miscellaneous trade carried by the small coasting craft. But the trade so carried on is very considerable, although the means of even roughly estimating it are wanting.

19. There seems to be a tendency in the trade of the world to resume its ancient channels under improved means of communication, and it is possible that what is commonly known as the Euphrates or Persian Gulf route may hereafter resume its position as a main line of commerce between the east and the west.

20. It were much to be desired that the Native Governments *en route* were more alive to the advantages of leaving trade free and uninterfered with.

21. Messrs. Gray, Paul, in addressing me concerning their endeavours to open up trade in the interior of Persia, write as follows, and I venture to think their remarks worthy the consideration of superior authority:—

"While on the subject of trade on these parts, it may, perhaps, be well now to lay two points before you, which we trust, should opportunity offer, you will have fully investigated.

"1*st*, it has always been a matter of doubt with us whether we are at liberty to sell goods imported by us (and on which the stipulated five per cent. duty has been paid) to Native merchants in Bushire, giving delivery of same at towns in the interior, and thereby under cover of Jowaz exempting the goods from further dues in transit.

"Hitherto we have, at considerable loss and inconvenience, refrained from entering into such contracts, being first desirous of ascertaining whether Her Majesty's Government would support such reading of the Treaty.

"We are ourselves inclined to think they would, and our assumption is based on the belief that the Commercial Treaty between Her Majesty's and the Shah's Government might be expected to work in a similar manner to the Treaty at present existing between Great Britain and the Ottoman Empire.

"Turning to Article V. of the last-named Treaty of 1861, you will find such a transaction distinctly provided for in the following words:—

"'If these articles, after having paid the import duty of eight per cent., are sold either at the place of their *arrival* or in the interior of the country, neither the *buyer* nor the *seller* shall be charged with any further duty in respect of them, &c., &c.'

"2*ndly*, as regards drawback, you are aware duties have in Persia to be paid immediately on landing, and at the port where landed.

"No rebate of duty is made should it be found more profitable to export the goods to another mart. Thus virtually prohibiting us here frequently from availing ourselves of the markets along the Arab coast and Turkish Arabia.

"For information on this point also, as to the spirit of the Turkish Treaty, I would beg to refer you to the continuation of the Article afore-quoted, which goes on to say, 'and if such articles should not be sold for consumption in Turkey, but should be re-exported within the space of six months, the same shall be considered as merchandise in transit by land, and be treated as is stated in Article XI.' The last-named article fixing the drawback at seven-eighth pounds.

"Apart from shipping to another country, we are in reality prohibited even from re-shipping to another Persian port, which is a serious hindrance. For example, we have goods now at Bushire which we are desirous of shipping to Bunder Abbass, on these we can obtain no drawback.

"No duty can, of course, be levied on the goods at Bunder Abbass, for they would go protected by a Residency Jowaz, nevertheless the customs authorities at Bunder Abbass, who are influential merchants, feel themselves aggrieved at the demands of their market being supplied by goods on which they receive no benefits, and feeling so bring all their private influence to bear against British enterprise, thereby retarding and injuriously affecting trade in its development.

"Were drawback allowed and granted to customs at port of re-importation, we feel sure many benefits to general trade would arise therefrom.

"I trust it may be found feasible to enforce these points without disturbing the working of the present Treaty.

"Persian merchants in Bombay receive many advantages in drawback from Her Majesty's Indian Government, for which British subjects in Persia have no equivalent return.

"These are points which might be enlarged upon to a considerable extent, but I will now conclude, apologising for so far trespassing on your valuable time."

ENCLOSURE A.

Comparative Statement showing the value of the trade between Calcutta and the Persian Gulf during the years 1860-61 *to* 1861-65, *as compared with the years* 1844-45 *and* 1868-69.

This year includes the trade to the Arabian Gulf also.		1844-45.		1860-61.				1861-62.				1862-63.				1863-64.				1864-65.			
		Imports.	Exports.	Imports.		Exports.		Imports.		Exports.		Imports.		Exports.		Imports.		Exports.		Imports.		Exports.	
					Increase.	Decrease.		Increase.	Decrease.			Increase.	Decrease.			Increase.	Decrease.			Increase.	Decrease.		
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Merchandize ..		24,95,406	22,68,657	3,07,921	..	21,87,485	9,75,047	..	12,93,610	5,81,061	3,16,061	..	21,61,186	9,24,723	3,34,220	18,60,337	..	22,61,542	9,24,723	3,34,220	26,98,624	4,36,969	1,49,021	2,33,864	4,08,320
Treasure ..		41,580	....	1,19,550	....	....	....	77,970	....	....	....	55,875	....	....	....	49,125	7,545	....	....	49,125	10,500	10,955	....	30,625	....
Total ..		25,36,986	22,68,657	4,27,471	..	21,87,485	9,75,047	77,970	12,93,610	5,81,061	3,16,061	55,875	21,61,186	9,24,723	3,34,220	18,60,337	7,545	22,61,542	9,24,723	3,83,345	27,09,124	4,36,969	1,49,021	2,64,489	4,08,320
1868-69.																							
Merchandize ..		6,69,933	31,06,944	3,07,921	..	9,75,047	9,75,047	..	21,31,897	5,81,061	3,16,061	..	3,35,713	9,24,723	9,24,723	..	21,82,221	2,62,682	9,51,660	2,33,864	4,07,251	21,55,284			
Treasure ..		1,79,646	10,500	1,19,550	....	....	....	14,295	....	....	....	55,875	....	....	....	1,30,521	....	....	....	30,625	1,50,646	10,500			
Total ..		8,49,579	31,17,444	4,27,471	..	9,75,047	9,75,047	14,295	21,31,897	5,81,061	3,16,061	55,875	3,35,713	9,24,723	9,24,723	1,30,521	21,82,221	2,62,682	9,51,660	2,64,489	5,57,897	21,55,284	10,500		

J. A. CRAWFORD,
Collector of Customs, Calcutta.

C. A. TWEEDDALE,
Officiating Superintendent.

CALCUTTA CUSTOM HOUSE;
The 3rd March 1870.

From J. A. CRAWFORD, Esq., Collector of Customs, Calcutta, to Her Britannic Majesty's Political Resident in the Persian Gulf,—No. 340, dated Calcutta, the 3rd March 1870.

I HAVE the honor to acknowledge receipt of your letter dated 22nd ultimo, requesting to be furnished with a Comparative Statement of the value of the trade between this port and the Persian Gulf, including Muscat, during the years 1844-45, 1860-61 to 1864-65, 1868-69 and 1869-70, and have now the pleasure to forward the Statements therein called for.

2. The figures shown for 1844-45 do not represent the value of the trade to the Persian Gulf alone, but include the value of the trade to the Arabian Gulf also.

3. I regret my inability to give the value of the trade to the Persian Gulf separately, as the statistical records of the period show the value of the trade to both places together.

4. In the figures representing the value of imports for the year under review, a sum of sixteen lakhs is included for salt (very likely imported from Jedda) at the rate of Rs. 4 per maund, while the value of salt for the years with which comparison is made is estimated at only one-fourth that amount per maund.

5. On the export side also a sum of eleven lakhs is included, representing the value of indigo, whilst the value of this article exported during the other years amounts to two, and never exceeds three lakhs per annum. Under the circumstances, the comparison made between the years 1844-45 and the years 1860-61 to 1864-65 cannot be accepted as showing the exact fluctuations of the trade.

6. The Comparative Statement showing the increases and decreases in the value of the trade during the years 1860-61 to 1864-65, as compared with 1868-69, is correct, as the trade for those years is confined to the Persian Gulf.

7. For the current year 1869-70, I forward a Statement showing the value of the trade month by month up to 31st January last. Any comparison between this and the other years cannot well be made, as the trade for 1869-70 is only shown for ten months.

8. The transactions of the remaining two months of the current year will be forwarded if required.

ENCLOSURE B.

Statement showing the annual trade between the Port of Bombay and the Persian Gulf, inclusive of Muscat, for the years 1865-66 *to* 1868-69.

Years.	Persian Gulf, including Muscat.		Remarks.
	Imports.	Exports.	
1865-66	2,08,98,977	1,35,38,431	
1866-67	1,02,45,304	79,48,910	
1867-68	1,00,37,332	1,05,44,332	
1868-69	1,03,60,717	1,02,75,443	

REPORTER GENERAL'S OFFICE; *Bombay, the 9th March* 1870.

A. F. BELLASIS, *Commr. of Customs, Bombay.*

IMPORTS.

Statement showing the value of trade between the port of Bombay and Persian Gulf (including Muscat) during the last five years, viz., *from* 1860-61 *to* 1864-65, *as compared with the trade twenty years ago in* 1844-45.

Articles.	1860-61.	1861-62.	1862-63.	1863-64.	1864-65.	1844-45.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Cotton wool	19,200	87,910	16,10,515	16,14,060	67,93,845	.....
Fruits, dates ...	5,25,269	10,83,720	10,18,836	9,57,512	14,30,759	3,23,432
,, other sorts ...	2,82,639	2,91,556	2,74,989	3,74,087	3,37,209	69,981
Grain	2,010	4,906	1,23,456	3,72,626	10,43,655	3,028
Silk	1,56,517	2,58,967	2,09,916	2,70,281	2,98,296	1,36,134
Wool	4,63,489	3,82,877	6,00,239	8,81,687	7,70,871	88,390
Other goods ...	50,28,943	41,73,810	37,29,017	29,16,576	35,90,240	27,31,362
Total ...	64,79,147	62,83,746	75,66,968	75,86,229	1,43,64,875	33,52,327

EXPORTS.

Statement showing the value of trade between the Port of Bombay and Persian Gulf (including Muscat) during the last five years, viz., *from* 1860-61 *to* 1864-65, *as compared with the trade twenty years ago in* 1844-45.

Articles.	1860-61.	1861-62.	1862-63.	1863-64.	1864-65.	1844-45
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Cotton goods ...	32,83,684	27,21,870	23,34,638	45,07,294	41,26,394	20,20,663
Dyes	4,05,888	75,591	61,793	3,02,058	5,35,177	40,183
Grain	3,90,447	3,55,107	3,41,215	6,72,274	9,58,640	1,23,071
Metals	2,56,310	2,99,322	6,36,277	4,21,988	13,06,291	1,12,179
Sugar and candy ...	5,90,364	9,29,037	5,65,890	4,54,080	6,61,663	7,46,291
Treasure	4,60,150	5,87,450	6,88,470	19,48,885	32,70,584	3,83,795
Other goods ...	12,77,612	13,12,091	15,82,662	11,21,908	14,15,234	11,46,157
Total ...	66,64,455	62,80,468	62,00,945	94,28,487	1,22,73,983	45,72,282
Grand Total ...	1,31,42,602	1,25,64,214	1,37,67,913	1,68,15,286	2,65,38,858	79,24,609

ENCLOSURE C.

IMPORTS.

Statement of Imports from Persian Gulf into the Province of Sind from 1861-62 *to* 1868-69, *and* 1847-48 *to* 1854-55.

ARTICLES.	1861-62.	1862-63.	1863-64.	1864-65.	1865-66.	1866-67.	1867-68.	1868-69.	1847-48.	1848-49.	1849-50.	1850-51	1851-52.	1852-53.	1853-54.	1854-55.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs. *	Rs. *	Rs. *	Rs. *	Rs. *	Rs. *	Rs. *	Rs. *
Animals, living	...	...	2,000	...	...	...	4,345	1,000	...	...	...	...	...	...	...	11,523
Brimstone	...	...	...	757	7,216	2,187	10,038	797	...	...	...	...	...	...	...	...
Cocoanuts	...	...	1,620	50	...	...	1,592	990	867	203	...	1,599	700	...	59	...
Cotton wool	6,610	24,954	...	2,118	1,500	500	5,650	46,937	77	...	...	...	...	...	...	35
Cotton goods	356	3,689	1,992	1,006	2,145	1,187	695	19,386	917	1,188	1,725	2,753	2,203	3,695	4,092	1,389
Drugs and medicines	1,976	20,831	2,444	6,191	4,623	2,788	5,667	5,315	3,220	2,431	4,701	3,822	2,736	2,859	7,355	2,938
Dyeing and colouring materials	14,061	7,744	19,902	18,757	9,900	2,886	1,688	1,971	9,630	3,843	949	1,546	916	1,410	2,239	1,375
Fruits and vegetables	2,47,876	3,24,745	2,20,491	2,89,167	3,37,936	1,93,600	4,28,143	2,29,624	1,28,991	1,42,997	1,38,830	1,06,714	96,276	98,221	1,11,385	97,017
Grain and pulse	511	5,753	14,956	1,22,843	74,944	26,757	5,205	36,775	1,798	17,776	13,022	1,163	5,403	186	489	50
Oils	...	...	469	...	...	67	4,763	253	3,286	1,773	295	1,393	...	...	...	...
Precious stones and pearls	42,898	24,210	68,343	16,500	13,700	...	...	...	...	...	2,546	102	500	...	...	8,525
Provisions and oilman's stores	802	1,534	347	1,678	9,844	3,099	1,175	37,513	2,214	14,943	49,026	2,708	6,692	3,022	7,491	635
Seeds	666	2,758	1,832	3,455	1,379	2,023	6,780	11,600	3,356	2,701	2,141	2,306	881	2,308	11,806	6,367
Shells	1,883	2,221	1,541	501	2,807	704	538	1,482	...	2,966	326	3,647	3,365	6,824	6,942	1,762
Silk...	7,915	2,031	8,378	5,037	5,215	2,028	12,480	16,095	19,271	4,400	11,288	27,215	5,084	27,834	6,713	9,021
Silk, manufactures of	1,620	2,167	5,986	2,881	3,821	6,016	3,769	12,405	331	1,230	357	2,743	1,214	2,528	1,072	568
Spices	6,101	35	1,091	137	...	251	1,935	210	3689	3,072	3,973	477	1,890	3,561	2,425	6,355
Wood and timber	919	72	...	136	390	...	3,362	370	163	104	763	982	719	300	352	702
Wool	23,490	70,794	1,04,146	55,390	97,048	47,945	31,800	1,10,785	...	210	...	2,675	950	1,349	384	5,698
Woollen goods	805	786	1,042	338	987	...	2,035	14,562	308	2,047	1,250	1,625	473	386	1,634	2,606
All other articles	9,774	26,467	5,887	6,654	6,938	8,027	10,467	2,961	12,689	8,043	5,709	9,200	13,767	11,193	11,644	6,618
Total Merchandise	3,68,183	5,20,790	4,63,467	5,33,596	5,80,383	3,00,065	5,42,127	5,51,031	1,90,807	2,09,927	2,36,901	1,97,042	1,43,769	1,65,676	1,76,082	1,63,184
Total Treasure	3,909	83,830	14,452	31,652	1,28,918	61,239	55,000	64,123	2,150	...	10,657	...	6,479	7,158	...	12,424
Grand Total	3,72,092	6,04,620	4,77,919	5,65,248	7,09,301	3,61,304	5,97,127	6,15,154	1,92,957	2,02,927	2,47,558	1,79,042	1,50,248	1,72,834	1,76,082	1,75,608

* Inclusive of import trade from Mekran.

KURRACHEE CUSTOM HOUSE;
The 21st March 1870.

W. T. COLE,
Collector of Customs, Kurrachee.

EXPORTS.

Statement of Exports to Persian Gulf from the Province of Sind from 1861-62 *to* 1868-69, *and* 1847-48 *to* 1854-55.

ARTICLES.	1861-62.	1862-63.	1863-64.	1864-65.	1865-66.	1866-67.	1867-68.	1868-69.	1847-48.	1848-49.	1849-50.	1850-51.	1851-52.	1852-53.	1853-54.	1854-55.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs. *	Rs. *	Rs. *	Rs. *	Rs. *	Rs. *	Rs. *	Rs. *
Cotton goods	6,295	12,054	48,118	59,418	30,463	13,654	18,164	43,748	337	4,790	8,205	5,424	18,290	1,304	7,396	2,982
Drugs and medicines	7,727	7,887	1,960	2,101	3,865	4,895	6,567	8,574	628	1,775	1,649	2,148	571	2,634	3,983	4,743
Dyeing and colouring materials	2,12,953	1,64,306	1,71,724	4,48,384	4,27,483	3,00,440	3,67,915	5,09,071	28,302	7,793	13,171	9,359	31,944	13,932	9,970	12,377
Grain and pulse	53,205	17,165	678	36,094	1,302	46,876	38,055	36,939	31,845	33,387	29,316	33,867	62,688	72,163	18,930	1,33,456
Hides and skins	36,399	18,596	22,382	20,548	28,223	23,218	18,774	32,632	35,080	43,276	27,772	28,503	15,941	19,280	32,060	38,442
Liquors	.....	1,054	1,352	2,532	190	689	988	9,413	.....	.....	.....	.....	.....	.....	.....	.....
Metals	.....	490	150	2,100	488	791	1,505	3,275	120	764	1,831	1,851	93	240	354	143
Oils	29,482	30,203	24,122	34,909	31,806	40,971	65,070	29,170	1,350	1,610	4,668	9,605	11,835	5,439	6,170	5,290
Seeds	2,897	1,998	333	2,014	76	.....	2,362	578	182	227	69	257	1,185	2,009	.....	852
Silk piece goods	1,710	854	.....	1,296	1,489	1,273	170	1,627	3,884	7,814	6,088	3,471	2,024	2,547	4,736	3,945
Spices	1,120	.....	.....	1,198	1,489	.....	1,945	312	289	560	143	472	.....	270	.....	46
Sugar and other saccharine matter	9,616	512	1,450	416	490	5,150	.....	.....	1,469	2,560	170	451	876	394	49	2,036
All other articles	5,010	9,658	6,743	16,077	5,778	6,018	5,358	27,830	6,526	8,212	9,088	13,913	16,834	8,880	6,450	2,964
Total Merchandize ...	3,66,414	2,64,777	2,79,012	6,22,689	5,36,844	4,43,975	5,26,873	7,03,169	1,10,012	1,12,768	1,02,120	1,09,321	1,62,281	1,40,799	90,098	2,07,276
Total Treasure ...	9,110	13,071	72,914	18,850	4,600	17,648	12,700	53,100	.....	.....	8,855	600	.....	350	641	.....
Grand Total ...	3,75,524	2,77,848	3,51,926	6,46,484	6,03,444	4,61,623	5,39,573	7,56,269	1,10,012	1,12,768	1,10,975	1,09,921	1,62,281	1,41,149	90,739	2,07,276

* Inclusive of exports to Mekran.

KURRACHEE CUSTOM HOUSE,
The 21st March 1870.

W. T. COLE,
Collector of Customs.

Memorandum from COLONEL W. L. MEREWETHER, Commissioner in Sindh,—No. 550, dated Kurrachee, the 24th March 1870.

THE accompanying statements showing the import and export trade of the Persian Gulf from 1861-62 to 1868-69 and 1847-48 to 1854-55 are forwarded to Colonel Pelly, C. B., Her Majesty's Political Resident at Bushire. In forwarding these statements, the Collector of Customs writes that "there being no record in this Office of trade earlier than from 1847-48, I have shown in the statements the value of trade from that year to 1854-55, instead of from [illegible]45 to 1848-49, as requested.

"From 1847-48 to 1853-54, the trade of Persian Gulf and Mekran Coast is recorded lumped together, and as it does not now admit of being separated for these years, I have shown it in the statement as it is, a foot note to that effect being made.

"Total value of imports from Persian Gulf for the expired eleven months of the current year 1869-70 (exclusive of treasure, Rs. 50,265) is Rs. 12,74,408; being an increase over the last year of twelve months of Rs. 7,23,377. This result is owing chiefly to large imports in grain and fruits. Of the former already Rs. 6,35,178 worth has been imported.

ENCLOSURE D.

Exportation of Lead from the Port of Bombay to Ports in the Persian Gulf during the three under-mentioned months.

Name of the Month.	Muscat.		Busreh.		Quet.		Abbass.		Linga.	
	Cwt. lbs.	Rs. A. P.	Cwt. lbs.	Rs. A. P.	Cwt. lbs.	Rs. A. P.	Cwt. lbs.	Rs. A. P.	Cwt. lbs.	Rs. A. P.
December 1869 ..	24 88	252 10 9	4 0	48 0 0	15 18	151 9 8	12 12	121 1 1	17 12	171 1 0
January 1870 ..	....	....	....	....	....	....	....	....	148 66	1,486 0 0
February 1870 ..	75 25	751 9 2	....	....	15 0	150 0 0	....	....	70 0	720 0 0
Total ..	99 63	1,004 3 11	4 0	48 0 0	30 18	301 9 8	12 12	121 1 1	235 78	2,377 1 0
Total Exports of Lead for the month of December 1869									72 80	744 6 6
Ditto ditto ditto January 1870									148 66	1,486 0 0
Ditto ditto ditto February 1870									160 25	1,624 9 2
Total									381 59	3,851 15 8

N. B.—It is remarkable that the export of lead to Muscat and Linga suddenly rose in the month of February, when a contest was anticipated at Benaymee between the Muscat State and the Wahabees.

L. PELLY, *Resident.*

ENCLOSURE E.

Statement showing the most favourable total of Trade from the Gulfs of Oman and Persia with the Ports of Calcutta, Bombay, and Kurrachee, as abstracted from the Reports of the respective Commissioners of Customs obligingly furnished to the Resident, Persian Gulf.

Name of Port.	Year.	Amount.	Gross Total.	REMARKS.
		Bombay Rs.	*Bombay Rs.*	
Calcutta	1844-45 ...	48,05,643		In 1868-69, the total of trade with Calcutta was near 40 lakhs, being 8 lakhs less than 1844-45, but almost equal to four years' trade, commencing from 1860-61.
Bombay	1865-66 ...	3,44,37,408		
Kurrachee	1865-66 ...	13,12,745		
			4,06,55,796	

ENCLOSURE F.

STATEMENTS REGARDING TRADE AS BORNE BY THE B. I. S. N. CO.'S STEAMERS, FROM SEPTEMBER 1866 TO SEPTEMBER 1869.

Prepared by the Firm of Messrs. GRAY, PAUL and Co., Bushire.

Statement of Annual Exports per B. I. S. N. Company's Steamer from Bushire in the years September 1866 to September 1869.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	REMARKS.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Chests.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1866-67 ...	20,60,942	157,740	120	13,100	35,520	6,800	1,040	35,020	199	600	377	1,113	108	8	883	...	
1867-68 ...	18,74,175	111,550	77	10,440	85,840	12,236	2,080	50,980	14	6,620	1,015	155	245	29	1,047	960	
1868-69. ...	9,15,146	179,020	68	13,040	13,580	428,064	5,280	56,012	146	3,380	812	40	125	12	456	...	

N. B.—The above are maunds Tabreez = 7½ lbs. English.

(Signed) GRAY, PAUL & Co.

Bushire, 1st October 1869.

Exports in the months of September.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	Remarks.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Chests.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1866 ...	1,58,770	5,940	2	...	920	...	...	8,160	...	...	...	...	...	...	...	...	
1867 ...	1,14,330	70	13	260	520	...	100	9,160	...	...	7	99	...	...	56	...	
1868 ...	37,000	8,040	17	2,260	4,520	...	...	9,640	1	540	1	...	...	2	93	...	

Annual Increase or Decrease.

1867.																
Increase ...	...	...	11	260	...	...	100	1,000	...	...	7	99	...	...	56	...
Decrease ...	44,440	5,870	...	...	400	...	...	...	...	...	...	...	...	...	...	...
1868.																
Increase ...	...	7,970	4	2,000	4,000	...	...	480	1	540	...	...	...	2	37	...
Decrease ...	77,330	...	...	...	...	...	100	...	...	...	6	99	...	...	...	...

Exports in the months of October.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	Remarks.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Chests.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1866 ...	1,57,445	6,680	1	...	8,480	1,200	...	4,200	...	...	...	...	2	1	14	...	
1867 ...	1,34,025	...	15	...	9,080	...	150	3,840	2	240	129	1	2	...	111	...	
1868 ...	44,275	5,000	...	...	560	...	750	4,320	...	280	206	...	...	1	41	...	

Annual Increase or Decrease.

1867.																
Increase ...	.....	...	14	...	600	...	150	...	2	240	129	1	...	...	97	...
Decrease ...	22,420	6,680	...	...	...	1,200	...	360	...	...	...	...	...	1	...	...
1868.																
Increase ...	.....	5,000	...	...	...	...	600	480	...	40	77	...	...	...	...	...
Decrease ...	89,750	...	15	...	8,520	...	...	...	2	...	...	1	2	...	70	...

Exports in the months of November.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	REMARKS.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Chests.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1866 ...	1,70,505	1,560	...	...	15,840	...	400	2,680	33	...	...	7	11	3	131	...	
1867 ...	1,89,876	...	...	...	26,920	...	...	1,050	7,520	2	202	...	31	2	65	...	
1868 ...	1,51,340	9,000	2	...	360	...	2,250	4,440	3	960	65	10	24	3	53	...	

Annual Increase or Decrease.

	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	REMARKS.
1867.																	
Increase ...	19,371	...	...	...	11,080	...	650	4,840	...	...	202	...	20	...	...	...	
Decrease ...	.....	1,560	...	...	...	...	...	...	31	...	...	7	...	1	66	...	
1868.																	
Increase ...	.....	9,000	2	...	...	...	1,200	...	...	960	...	10	...	1	...	...	
Decrease ...	38,536	...	...	...	26,560	...	...	3,080	...	...	137	...	...	...	12	...	

Exports in the months of December.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	REMARKS.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Chests.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1866 ...	1,65,685	...	8	...	600	...	...	840	71	...	...	...	25	...	175	...	
1867 ...	1,38,920	...	4	...	14,400	...	1,160	3,040	2	1,020	5	3	88	8	136	...	
1868 ...	1,26,680	18,180	7	...	40	448	1,520	1,120	...	1,000	42	24	43	2	55	...	

Annual Increase or Decrease.

	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	REMARKS.
1867.																	
Increase ...	.....	.....	.....	.....	13,800	.....	1,160	2,200	.....	1,020	5	3	63	8	.....	.....	
Decrease ...	26,760	.....	4	.....	.....	.....	.....	.....	69	.....	.....	.....	.....	.....	39	.....	
1868.																	
Increase ...	.....	18,180	3	.....	.....	448	360	.....	.....	.....	37	21	.....	.....	.....	.....	
Decrease ...	12,240	.....	.....	.....	14,360	.....	.....	1,920	2	20	.....	.....	45	6	81	.....	

Exports in the months of January.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	Remarks.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Cts.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1867 ...	2,69,661	6,400	13	...	3,760	2,856	...	80	14	...	...	2	43	1	133	...	
1868 ...	1,87,747	...	2	360	17,000	12,236	160	1,440	2	440	113	25	30	4	131	...	
1869 ...	99,550	30,180	6	2,140	1,400	...	160	1,000	1	600	155	...	28	...	25	...	

Annual Increase or Decrease.

1868.																	
Increase ...	...	...	...	360	13,240	9,380	160	1,360	...	440	113	23	...	3	...	...	
Decrease ...	81,914	6,400	...	...	...	...	...	...	12	...	...	...	13	...	2	...	
1869.																	
Increase ...	...	30,180	4	1,780	...	...	...	...	...	160	42	...	...	...	...	...	
Decrease ...	88,197	...	...	...	15,600	12,236	...	440	1	...	...	25	2	4	106	...	

Exports in the months of February.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	Remarks.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Chests.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1867 ...	3,19,997	29,440	6	8,900	920	...	...	800	...	520	14	104	12	...	25	...	
1868 ...	4,14,594	5,620	11	4,180	13,960	...	80	2,480	4	2,580	104	14	72	2	213	...	
1869 ...	1,02,875	30,680	9	4,300	480	308	...	1,480	131	...	89	...	22	1	18	...	

Annual Increase or Decrease.

1868.																	
Increase ...	94,597	...	5	...	13,040	...	80	1,680	4	2,060	90	...	60	2	188	...	
Decrease ...	...	23,820	...	4,720	...	...	...	...	...	...	...	90	...	...	...	...	
1869.																	
Increase ...	...	25,060	...	120	...	308	...	...	127	...	...	...	...	...	...	...	
Decrease ...	3,11,719	...	2	...	13,480	...	80	1,000	...	2,580	15	14	50	1	195	...	

K

Exports in the months of March.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	Remarks.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Chests.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1867 ...	2,37,945	35,060	29	3,240	920	...	160	60	63	...	...	581	...	1	40	...	
1868 ...	1,99,895	1,880	19	1,980	3,600	...	40	1,300	1	1,660	16	...	14	10	152	...	
1869 ...	1,60,248	28,960	9	660	1,420	...	520	240	...	...	56	...	4	1	25	...	

Annual Increase or Decrease.

1868.																	
Increase ...	.....	...	...	...	2,680	...	...	1,240	...	1,660	16	...	14	9	112	...	
Decrease ...	38,050	33,180	10	1,260	...	...	120	...	62	...	...	581	10	...	...	...	
1869																	
Increase ...	.....	27,080	...	...	...	...	480	...	...	...	40	...	...	...	...	...	
Decrease ...	39,647	...	10	1,320	2,180	...	...	1,060	1	1,660	...	...	10	9	127	...	

Exports in the months of April.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	Remarks.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Chests.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1867 ...	2,14,015	16,800	29	920	840	...	...	1,000	2	80	...	...	7	1	120	...	
1868 ...	2,86,917	14,520	7	3,260	...	...	80	1,720	...	400	63	...	...	...	26	...	
1869 ...	57,525	20,000	6	1,840	1,640	1,960	80	1,040	...	...	2	2	...	...	24	...	

Annual Increase or Decrease.

1868.																	
Increase ...	72,902	...	...	2,340	...	...	80	720	...	320	63	...	...	...	...	...	
Decrease ...	.....	2,280	22	...	840	...	...	...	2	...	...	...	7	1	94	...	
1869.																	
Increase ...	.....	5,480	...	...	1,640	1,960	...	...	...	...	...	2	...	...	...	...	
Decrease ...	2,29,392	...	1	1,420	...	...	...	680	...	400	61	...	...	...	2	...	

Exports in the months of May.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	REMARKS.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Chests.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1867	48,364	17,220	12	...	520	...	920	880	4	...	13	4	...	...	2	...	
1868	75,205	40,680	...	...	...	...	...	480	1	...	...	7	8	...	17	960	
1869	47,153	9,840	3	1,840	480	61,404	...	2,040	2	...	13	...	1	...	61	...	

Annual Increase or Decrease.

1868.																	
Increase ...	26,841	23,460	...	...	...	...	...	...	...	...	...	3	8	...	15		
Decrease ...	.....	...	12	...	520	...	920	400	3	...	13	...	...	...	...	960	
1869.																...	
Increase ...	.....	...	3	1,840	480	61,404	...	1,560	1	...	13	...	...	...	44	...	
Decrease ...	28,052	30,840	...	...	...	...	...	...	...	...	...	7	7	...	...	960	

Exports in the months of June.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	REMARKS.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Chests.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1867 ...	98,025	19,320	9	...	200	...	120	200	1	...	85	85	4	1	58	...	
1868 ...	45,737	8,820	1	400	80	...	...	2,760	...	280	21	...	...	1	3	...	
1869 ...	30,100	9,240	2	...	2,680	1,07,716	...	5,520	4	...	...	...	3	2	61	...	

Annual Increase or Decrease.

1868.																	
Increase ...	.....	...	...	400	...	...	120	2,560	...	280	...	...	...	...	...	...	
Decrease ...	52,288	10,500	8	...	120	...	...	...	1	...	64	85	4	...	55	...	
1869.																	
Increase ...	.....	420	1	...	...	1,07,716	...	2,760	4	...	...	...	3	1	58	...	
Decrease ...	15,637	...	...	400	2,600	...	...	...	...	280	21	...	...	...	...	...	

Exports in the months of July.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	REMARKS.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Chests.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1867 ...	88,435	19,320	5	...	560	...	...	8,280	7	...	165	31	...	...	159	...	
1868 ...	67,169	18,660	4	...	...	...	...	11,280	...	...	349	6	...	...	27	...	
1869 ...	19,400	9,900	7	...	...	77,749	...	11,774	4	...	162	2	...	...	...	...	

Annual Increase or Decrease.

1868.																	
Increase ...	.....	...	...	...	...	...	...	3,000	...	...	184	...	...	...	...	...	
Decrease ...	21,266	660	1	...	560	...	...	...	7	...	...	25	...	...	132	...	
1869.																	
Increase ...	.....	...	3	...	...	77,749	...	...	4	...	...	...	...	...	...	...	
Decrease ...	47,769	8,760	...	...	...	...	...	494	...	...	187	4	...	...	27	...	

Exports in the months of August.

Year.	Specie and Pearls.	Cotton.	Silk.	Madder Root.	Almonds.	Grain.	Gallnuts.	Cummin Seeds.	Opium.	Safflower.	Ghee.	Rosewater.	Horses.	Carpets.	Dry Fruit.	Wool.	REMARKS.
	Value in Rs.	Mds.	Pkgs.	Mds.	Mds.	Mds.	Mds.	Mds.	Chests.	Mds.	Pkgs.	Pkgs.	No.	Pkgs.	Pkgs.	Mds.	
1867 ...	1,32,295	...	6	40	1,960	2,744	...	7,840	4	...	100	299	4	...	26	...	
1868 ...	19,760	21,300	1	...	280	...	...	5,960	...	...	6	...	...	2	110	...	
1869 ...	39,000	...	...	...	...	1,78,509	...	13,398	...	...	21	2	...	...	...	...	

Annual Increase or Decrease.

1868.																	
Increase ...	.....	21,300	...	...	...	...	...	...	...	...	...	...	...	2	84	...	
Decrease ...	1,12,335	...	5	40	1,680	2,744	...	1,880	4	...	94	299	4	...	...	...	
1869.																	
Increase ...	19,240	...	...	...	...	1,78,509	...	7,438	...	...	...	...	...	...	...	...	
Decrease ...	.....	21,300	1	...	280	...	...	...	...	...	15	2	...	2	110	...	

ENCLOSURE G.

Statement showing the quantity of Opium exported from Bushire and Bunder Abbass and ready for shipment of the Crop for the year 1869, *as contrasted with the Crop for the previous year.*

	1868.	1869.	Increase in 1869.	
	Chests.	Chests.		
	1,545	2,540	995	

N. B.—Each Chest contains 1 Pecul or 136 lbs. English.

ENCLOSURE H.

Statement showing in detail the manner in which Opium was exported from Bushire and Bunder Abbass during the year 1869-70.

Name and Description of Vessel.	Number of Chests.	From what Port.	To what Port.	REMARKS.
Steam Ship *Nada*	2,048	1,403 from Bushire and 645 from Bunder Abbass.	China.	For transmission thence to China.
Bark *Gutemberg*, German Colors	27	Bushire	Batavia ...	Ditto.
Bark *Fanny Kerkner*, ditto	57	Bushire	Batavia ...	Ditto
Steam Ship *Scotia*, B. I. S. N.	227	Bushire and Bunder Abbass ...	Aden ...	For transshipment at Galle for China.
Bark *Blanche*	11	Bushire	England. ...	
Barks *Asshur* and *Jumna*	50	Bushire	England. ...	
Ready for shipment at Bunder Abbass ...	120	.....	.....	To await ships leaving for Batavia.
Total Chests ...	2,540			

M

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

IRRIGATION OPERATIONS OF FUSL KHURREEF IN THE PUNJAB UP TO 31st May 1870.

Canal Division.	Water distributed during May.				Navigation Return Canal.		Land Irrigated (approximate).		Rain-fall.		Chief Crop (approximate).		Remarks.
	Depth in Canal at regulating guage.		Gross consumption, cubic feet per second.		Principal items of Traffic.		Zillah.	Acres.	Average.	During month.	Name.	Area in acres.	
	Full supply.	Actual throughout May.	Estimated full supply.	Actual average throughout May.	Up.	Down.							
B. D. Canal. 1st Division ...	4·9	4·00	3,073·6	501·65	...	.....	Goordaspoor ...	4,377	1·01	*Nil*	Cotton ...	5,558	1,371·09 cubic feet per second passed down the Escapes on the Baree Doab Canal, of which 1,239·92 cubic feet per second was turned down the Mullikpoor Escape for the purpose of regulating the supply.
2nd Division, M. B. Lower ...	4·6	4·6		505·27	...	.....	Umritsur ...	3,620	0·65	*Nil*	Rice ...	1,476	
„ Lahore Branch..	3·3	3·3		381·04	...	.....	Lahore ...	8,701	...	*Nil*	Sugarcane...	5,317	
										...	Others ...	4,347	
Total Baree Doab Canal ...	.....	.....	.....	1,387·96	...	.....	.....	16,698	...	...	.....	16,698	
Western Jumna Canal. Kurnaul Division ...	4·33	4·43	2,546	189·76	...	99,688 bullies, kurries, planks, &c.	Umballa ...	62	1·52	*Nil*	Cotton ...	35,225	487·88 cubic feet per second discharged by the Boodha Khera Escape.
Delhi „ ...	4·4	4·3		816·00	...		Kurnaul ...	8,705	0·44	0·93	Rice ...	586	
Hansi „ ...	8·8	8·4		870·00	...		Delhi ...	21,381	...	*Nil*	Sugarcane .	31,718	
„ Bulla Head ...	8·4	8·3		268·00	...		Rohtuck ...	23,459	...	...	Others ...	3,429	
							Hissar ...	13,710	1·9				
							Jheend ...	3,605					
							Bikaneer ...	36					
Total Western Jumna Canal ...	.....	.....	.....	2,143·76	...	.....	.....	70,958	...	...	.....	70,958	
Inundation Canals. Upper Sutlej Division ...	.....	.....	.....	.....	...	.....	.....	5,500	...	*Nil*	Detail not obtainable for want of establishment	.....	*The Return of area irrigated by the Indus Canals is as stated by the Executive Engineer: it is considered doubtful, and reference has been made to the Officer in charge for further information.
Lower Sutlej and Chenab	The Return for these Canals has not been received from the Executive Engineer.								...	...		.....	
Indus Canals	.....	.....	.....	.....	...	.....	.....	151,000*	...	...		.....	
Total Inundation Canals ...	.....	.....	.....	.....	...	.....	.....	156,500	...	...	.....	156,500	
Delhi and Goorgaon Works...	.....	.....	.....	.....	...	.....	.....	*Nil*	...	...	.....	*Nil*	
Total Delhi and Goorgaon Works ...	.....	.....	.....	.....	...	.....	.....	*Nil*	...	...	.....	*Nil*	
Grand Total ...	.....	.....	.....	.....	...	99,668 bullies, kurries, planks, &c.	.....	244,148	...	...	.....	244,148	

MURREE;
The 25th July 1870.

W. BROADFOOT, *Lieut., R.E.,*
Asst. Secy. to the Govt., Punjab, P. W. D., Irrigation Branch.

IRRIGATION OPERATIONS OF FUSL KHURREEF OF 1870-71 UP TO 30th JUNE 1870.

Canal Division.	Water distributed during June.				Navigation Return Canal.		Land Irrigated (approximate).		Rain-fall.		Chief crops (approximate).		Remarks.
	Depth in Canal at regulating guage.		Gross consumption, cubic feet per second.		Principal items of Traffic.		Zillah.	Acres.	Average.	During month.	Name.	Area in acres.	
	Full supply.	Actual throughout June.	Estimated full supply.	Actual average throughout June.	Up.	Down.							
B. D. Canal. 1st Division ...	4·9	3·70	3,073·6	884·23	...	.....	Goordaspoor ...	8,519	1·75	2·30	Cotton ...	6,969	505 cubic feet per second passed down the various Escapes, being in excess of the demand for irrigation.
2nd „ M. B. Lower ...	4·6	3·08		632·68	...	.....	Umritsur ...	6,499	1·89	0·80	Rice ...	7,462	
„ „ Lahore Branch ...	3·3	2·87		470·41	...	.....	Lahore ...	12,017	...	...	Sugarcane...	6,041	
											Others ...	6,563	
Total Baree Doab Canal ...	.....	.....	.....	1,987·32	...	.....	.....	27,035	...	...	.....	27,035	201·48 cubic feet per second discharged by the Boodha Khera Escape.
Western Jumna Canal. Kurnaul Division ...	4·33	3·64	2,546	130·17	...	157,003 bullies, kurrees, planks, &c.	Umballa ...	419	...	...	Cotton ...	59,477	Comparing this Statement with that of a similar date of last year, we find a decrease of 13,228 acres irrigated on the Baree Doab Canal, and an increase of 20,497 acres on the Western Jumna Canal.
Delhi „ ...	4·4	4·1		738·30	...		Kurnaul ...	21,672	2·15	8·93	Rice ...	5,837	
Hansi „ ...	8·8	7·9		820·90	...		Delhi ...	27,281	...	4·80	Sugarcane...	33,524	
„ Bulla Head ...	8·4	7·7		249·70	...		Rohtuck ...	30,281	0·6	*Nil.*	Others ...	5,179	
							Hissar ...	18,686	1·3	*Nil.*			
							Jheend ...	5,642	...	...			
							Bikaneer ...	36	...	...			
Total Western Jumna Canal ...	.....	.....	.....	1,939·07	...	157,003	.....	104,017	...	...	.....	104,017	The general decrease on the Baree Doab Canal is partly owing to the introduction of the increased rates, but principally to the introduction of the charge on account of water advantage rate, a measure as yet imperfectly comprehended by the cultivators.
Inundation Canal. Upper Sutlej Division ...	.....	.....	.....	.....	...	.....	.....	26,000	not known.	3·11			
Lower Sutlej and Chenab	The Return for these Canals has not been received from the Executive Engineer.								...	...			
Indus Canals	.....	.....	.....	.....	...	.....	.....	150,700	...	1·7			On the Western Jumna Canal the increase is principally in Cotton, and in the Hansi Division of the Canal. In the Inundation Canals there is an apparent decrease of nearly one lakh of acres; this is owing to the non-entry of the approximate area irrigated by the Lower Sutlej and Chenab Canals, which averages about one and a quarter lakhs of acres.
Total Inundation Canals ...	.....	.....	.....	.....	...	.....	.....	176,700	...	...	.....	176,700	
Delhi and Goorgaon Works ...	.....	.....	.....	.....	...	.....	.....	*Nil.*	...	...	.....	*Nil.*	
Total Delhi and Goorgaon Works	.....	.....	.....	.....	...	.....	.....	*Nil.*	...	...	.....	*Nil.*	
Grand Total ...	.....	.....	.....	.....	...	153,003 bullies, kurries, planks, &c.	.....	307,752	...	...	.....	307,752	

LAHORE;
The 28th July 1870.

W. BROADFOOT, *Lieut., R.E.,*
Asst. Secy. to Govt., Punjab, P. W. D., Irrigation Branch.

GOVERNMENT OF INDIA.

LEGISLATIVE DEPARTMENT.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Tuesday, the 16th August 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K.P., G.C.S.I., *Presiding.*

His Excellency the Commander-in-Chief, G.C.B., G.C.S.I.

The Hon'ble John Strachey.

The Hon'ble Sir Richard Temple, K.C.S.I.

The Hon'ble J. Fitzjames Stephen, Q.C.

The Hon'ble B. H. Ellis.

Major-General the Hon'ble H. W. Norman, C.B.

The Hon'ble F. R. Cockerell.

His Highness Sarámade Rájáhae Hindustán Ráj Rájendra Srí Maháráját Dhiráj Sivái Rám Singh Bahádur of Jaypúr, G.C.S.I.

OUDH TALUQDARS' RELIEF BILL.

The Hon'ble MR. STRACHEY presented the Report of the Select Committee on the Bill to relieve from incumbrances the estates of taluqdárs in Oudh.

PENAL CODE AMENDMENT BILL.

The Hon'ble MR. STEPHEN introduced the Bill to amend the Indian Penal Code, and moved that it be referred to a Select Committee with instructions to report in a month. He had so fully described the Bill when he moved for leave to introduce it, that he would reserve his further observations until the Select Committee should have made its report.

The Motion was put and agreed to.

LOCAL ACTS CONFIRMATION BILL.

The Hon'ble MR. STEPHEN presented the Report of the Select Committee on the Bill to confirm certain laws affecting European British subjects.

REGISTRATION LAW CONSOLIDATION BILL.

The Hon'ble MR. STEPHEN moved for leave to introduce a Bill to consolidate and amend the laws relating to the Registration of Assurances. A draft Bill to exempt title deeds issued by the Inám Commissioner in the Presidency of Fort Saint George from compulsory registration under the Indian Registration Act, 1866, had been recently sent up by the Madras Government with a request that it might be passed by the Governor General's Legislative Council. A somewhat similar enactment had already been passed as Act No. XXVII of 1868, and it was thought preferable to adding a third Act on the subject to the Statute Book to take this opportunity of consolidating and amending the

whole law on the subject. The present was one of three consolidation Bills which he hoped to obtain leave to introduce. When these, and the two great Bills to consolidate the laws relating to Civil and Criminal Procedure, and the other Bills now before the Council, were passed, and when two comparatively unimportant measures relating to Paper Currency and Cattle Trespass had also become law, the process of consolidation, so far as regarded the Acts of the Governor General in Council, would be complete. A similar process, so far as regarded the Bengal Regulations, was now far advanced, thanks chiefly to the industry and knowledge of his Hon'ble friend Mr. Cockerell. The several collections of the rules and orders which, under the Indian Councils' Act, had obtained the force of law in the North-Western Provinces, the Panjáb, Oudh, the Central Provinces and British Burma, would soon be finished, and the result of the whole process would, MR. STEPHEN hoped and believed, be eminently satisfactory to the profession and to the public.

The Motion was put and agreed to.

MARRIAGE LAW CONSOLIDATION BILL.

The Hon'ble MR. STEPHEN moved for leave to introduce a Bill to consolidate and amend the law relating to marriage. That law, so far as regarded Christians (and to them alone the present Bill would apply), was now contained in one Statute (14 & 15 Vic., cap. XL) and in two Acts (V of 1852 and V of 1865). To these might be added the obsolete Statute as to marriages solemnized by ministers of the Church of Scotland, 58 Geo. III., cap. 84.

The Motion was put and agreed to.

CORONERS LAW CONSOLIDATION BILL.

The Hon'ble MR. STEPHEN also moved for leave to introduce a Bill to consolidate the laws relating to Coroners. Those laws were 33 Geo. III, cap. 52, section 157; 9 Geo. IV, cap. 74, sections 5 and 6; Act IV of 1848 and Act XLV of 1850.

The Motion was put and agreed to.

SEA CUSTOMS CONSOLIDATION BILL.

The Hon'ble SIR R. TEMPLE moved for leave to introduce a Bill to consolidate and amend the law relating to Sea Customs. He said that the Consolidated Customs Act of 1863 had already been more than once amended, and certain further amendments having been found necessary, the present Bill would consolidate the whole law on the subject, and make the following changes:—

'Magistrate' would be defined so as to include expressly a Magistrate of Police in the Presidency Towns.

The Local Government would be empowered to declare what should, for the purposes of the Act, be deemed to be the limits of the Custom House.

Section 23 of Act VI of 1863 authorised the Government of India to prohibit the exportation or importation of any particular class of goods. To prevent a doubt which had been raised as to the extent of the power thus intended to be conferred, the words 'by sea or by land, or both by sea and by land,' would be introduced.

In section twenty-seven, for 'Local Government' the 'Customs Duties' Act, 1870' would be substituted.

A new section would provide that, when goods were warehoused, a warrant should be delivered to the person lodging the goods, and that such warrant should be transferable by endorsement. This was now the law as regards the

Bengal Bonded Warehouse. He had reason to know that the change would be welcomed by the mercantile community of Bombay.

Another section, equivalent to section 137 of Act VI of 1863, would provide that the goods on which drawback was allowed should be easily identifiable; that the Governor General in Council might determine what such goods should be deemed to be, and that three-fourths (instead of seven-eighths) should be the amount of drawback, one-fourth (instead of one-eighth) being retained as reserved duty.

Various verbal amendments would be made, and the Bill would be so printed as to facilitate perusal.

Eight Acts and parts of Acts would be repealed and consolidated, and to these he hoped, if the Bill were referred to a Select Committee, to add two other Acts and an old Bengal Regulation. It was needless to dwell on the importance of having all the law on such a subject within the four corners of a single enactment.

The Motion was put and agreed to.

PRISONS' BILL.

The Hon'ble MR. COCKERELL moved that the Hon'ble Messrs. Strachey and Ellis be added to the Select Committee on the Bill to amend the law relating to Prisons in the Panjáb and the Provinces under the immediate administration of the Government of India.

The Motion was put and agreed to.

PRISONERS' BILL.

The Hon'ble MR. COCKERELL asked leave to postpone his motion for leave to introduce a Bill to consolidate the laws relating to prisoners.

Leave was granted.

The following Select Committee was named:—On the Bill to amend the Indian Penal Code, the Hon'ble Messrs. Strachey, Ellis, Cockerell and the Mover.

The Council then adjourned to the 30th August 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

SIMLA;
The 16th August 1870.

No. 33 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, AUGUST 27, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

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GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

NARRATIVE OF EVENTS CONNECTED WITH DR. CAYLEY'S MISSION TO LADAKH

No. 223—380, dated Murree, the 28th July 1870.

From—T. H. THORNTON, ESQ., D.C.L., Secretary to the Government of the Punjab,

To—The Offg. Secretary to the Government of India, Foreign Department.

WITH reference to your No. 1254 P, dated 19th instant, I am directed to forward copy of report by Dr. Cayley, on special duty, Ladakh, No. 1, dated 1st June 1870, together with copy of a letter addressed to the Commissioner of Jullundhur, No. 691 of the 10th idem.

No. 1, dated Nagar Kullu, the 1st June 1870.

From—DR. H. CAYLEY, on special duty at Ladakh,

To—The Secretary to the Government of the Punjab.

I HAVE the honor to commence a weekly narrative of events connected with my mission to Ladakh for the present season.

2. I reached the Kullu Valley on the 29th May, and found that the merchants, both Yarkundis returning from the Punjab and traders of Kullu, had already commenced their journey to Ladakh, and a considerable quantity of merchandise is now on the road. Very little has as yet, however, crossed the Rotang Pass into Lahoul.

3. Very great difficulty is already experienced in getting carriage, and this difficulty is certain to increase as the season advances. I have already passed one Yarkundi merchant unable to proceed for want of carriage, and another, Mahomed Ali, who came over last year as an agent of the Governor of Yarkund, has been supplied with coolies by the aid of the District officials; but this could only be done as an exceptional case.

There is no scarcity of labourers in the Valley, but they do not readily come forward, even for very high rates of pay.

4. When the subject of want of carriage was last year brought under consideration, a very carefully-planned scheme was proposed by Captain Harcourt, the Assistant Commissioner of Kullu, for the establishment of a mule train through the District. In this he showed that, calculating on the large quantity of merchandise passing through, and the great demand for carriage, if the Government started a mule train, it was hardly possible that it could not be worked at a profit, and that receipts would not more than cover the Rs. 3,500, the estimated expenditure for the season. The sanction of Government was given for a trial of the scheme, and the Assistant Commissioner was prepared to start it; but it was thought advisable by the Commissioner that an attempt should first be made to get it carried out by private contract, and notices were circulated but without any result.

In your letter No. 260 of 25th February, paragraph 3, it is stated that a mule train is being organized by Captain Harcourt; but, as stated above, his plan was not adopted, and no arrangements are as yet being made.

5. The road through Kullu is now in first rate order, and remarkably level and easy.

6. With regard to supplies, the Kullu Valley is very fertile and productive, and grain of all kinds is cheap and plentiful, but not so in Lahoul (with the exception of barley). In order to meet the wants of the traders at Lahoul, it would be necessary to establish a grain depôt at Kielang or other suitable place. I doubt if any private individual would, for the first year at least, undertake this without help from Government.

Captain Harcourt recommends that the services of Tara Chund Negi, of Lahoul, should be enlisted, and that he should be aided by a loan to enable him to lay in supplies,—the loan to be repaid in, say, two years. Tara Chund can give no regular security, but he is, I believe, thoroughly honest, and, as he receives a yearly salary of over Rs. 500, there could be no risk in advancing him a sum of Rs. 800 to Rs. 1,000, which would probably suffice.

7. The question of erecting shelter and providing supplies at Lingtee, on the boundary between Lahoul and Ladakh, has often been brought forward, though nothing has yet been done about it. The subject is of great importance to the trades, who have been petitioning me to have the matter arranged. I propose, however, to refer more fully to this after I have passed through Lahoul and made further inquiries.

No. 691, dated Lahore, the 10th June 1870.

From—Lepel H. Griffin, Esq., Under Secy. to the Govt. of the Punjab,

To—The Officiating Commissioner and Superintendent, Jullundhur Division.

Some time ago a mule train was proposed through the District of Kullu by Captain Harcourt, and was sanctioned by this Government in letter No. 3655, dated 8th December last. The Commissioner is understood to have thought it advisable that an attempt should be made to get the mule train organized by private individuals before the Government itself tried the experiment; but Dr. Cayley, writing from Nagar on the 1st of June, states that nothing has been done.

2. I am desired by the Hon'ble the Lieutenant-Governor to request you to take immediate steps to carry out the proposal sanctioned by Government. The season is now far advanced, but whatever is possible to be done in establishing the train should be done at once.

3. Secondly, I am directed to inform you, with reference to the 6th paragraph of Dr. Cayley's letter (a copy of which is herewith sent for your information), that His Honor sanctions an advance of Rs. 1,000 to Tara Chand Negi, of Lahoul, for the establishment of a grain depôt at Kielang, or any other place more appropriate—the loan to be repaid in two years;—and I am to request that you will at once take measures for giving effect to this sanction.

No. 197-757, dated Murree, the 29th June 1870.

From—T. H. Thornton, Esq., D.C.L., Secretary to the Govt. of the Punjab,

To—The Offg. Secretary to the Govt. of India, Foreign Department.

I am directed to forward, for the information of the Supreme Government, copy of a report No. 2, dated 13th instant, received from Dr. H. Cayley, on special duty.

No. 2, dated Kolang—Lahoul, the 13th June 1870.

From—Dr. H. Cayley, Joint Commissioner to Ladakh,

To—The Secretary to the Government of the Punjab.

I have been halting for four days at Kailang to enable Pundit Bukshi Ram, the Joint Commissioner appointed by the Maharaja of Cashmere, to join my camp. He was originally to have gone by Cashmere, Ladakh, and meet me in Lingtee, but he afterwards changed his plans and followed me by Kullu. He is anxious to cross the passes into Ladakh with me, and I have waited in consequence. He is to be here to-day.

2. I found the road through Kullu very easy and good in every way, with the exception of some of the bridges near Pulchan at the head of the Valley, which require repairing and strengthening. Over the Rotang Pass the road is hardly yet sufficiently clear of snow for repairs to be fully executed, but laden horses cross it safely. The descent by the old road to Koksur Village is much easier and less steep than the present road to the bridge four miles above the village; nearly all the coolies with loads and other pedestrians follow the old road and cross by the rope bridge, *Jhula*, opposite the village; but all animals have to go round by the new road and bridge as they cannot cross the *Jhula*.

3. The Koksur Bridge is greatly in need of repairs; but I believe that Captain Harcourt, the Assistant Commissioner in Kullu, is making arrangements for at once improving and repairing the roads, bridges, &c.

The road through Lahoul from Koksur Bridge to Kolang, four marches, is generally good and easy, and very much improved since I passed along it in 1867. In a few places petty repairs are required, which, Tara Chund tells me, shall immediately be done. In two or three places, where the old road was difficult, a new one is being laid out, and the work is rapidly progressing.

4. Nearly one hundred horse-loads of merchandize, the property of Yarkundis returning from the Punjab, have reached Lahoul. For about 65 loads the merchants have to depend upon hired carriage. They experienced some delay and difficulty in Kullu, but less in Lahoul. Tara Chund has as yet only purchased 22 yaks with the money advanced to him for the purpose of providing carriage; but he only received the first instalment of the advance last autumn, and the second half only two months ago. He is arranging for the purchase of more animals.

5. All ordinary supplies can now be obtained by the merchants at Kailang, in Lahoul, though at very high prices. A supply depôt is to be established at Dârcha, two stages higher up the Valley.

6. The first batch of merchants in this season proceeding to Ladakh nearly a month earlier than usual.

No. 212—842, dated Murree, the 16th July 1870.

From—T. H. Thornton, Esq., D.C.L., Secretary to the Government of the Punjab,

To—The Offg. Secretary to the Government of India, Foreign Department.

I am desired to forward, for the information of the Government of India, copy of report received from Dr. Cayley, on special duty to Ladakh, No. 3, dated 21st June 1870.

No. 3, dated Serab Valley, the 21st June 1870.

From—Dr. H. Cayley, Joint Commissioner to Ladakh,

To—The Secretary to the Government of the Punjab.

On the 1st instant I was joined at Kolang, in Lahoul, by Pundit Bukshi Ram, Joint Commissioner appointed by Cashmere, who had followed me through Kullu and Ladakh. He has with him a large camp and escort of twelve sepoys.

His orders are to follow the rules issued for the guidance of the Joint Commissioner, and is authorized, in all ordinary matters, to act without special reference to the Maharaja's Government.

2. We left Kolang on the 14th, and marched by regular stages over the Baralacha Pass to Lingti, and encamped on the Serab River on the 18th.

The road through Lahoul and over the Baralacha to Lingti is vastly improved in the last three years. It is now in very fair order, except where covered with snow, as it still is, for some four miles over the Pass, and quite passable and easy for laden horses. It requires the ordinary repairs in places where portions of the road or bank above have here and there slipped down from the effects of the winter's snows. All this I have pointed out to Negi Tara Chand who accompanied me to the foot of the Baralacha, and he promises to have the necessary repairs at once carried out. On the north side of the Baralacha, just above Kailung, similar repairs are much wanted, and it is very important that the road should be put in order quickly. In two places in Lahoul,—*first*, between Koksur and Sisu, and again close to the bridge over the Bhaga, where great difficulties occur,—an entirely new line of road is being laid out for a short distance, and the work is rapidly progressing under the superintendence of the Assistant Commissioner of Kullu and Mr. Theodore. After its completion, there are some similar portions of new road to be made higher up the Valley between Kailang and Darcha.

The bridge at Putseo, in Lahoul, is very weak and unsafe for animals: the river is, however, almost always fordable.

The bridge over the Yunam at Kailung north of the Baralacha is also unsafe for horses, and should, I think, be improved. The bridge built last year over the Serab below Lingti plains is remarkably good and substantial. A bridge is very much wanted over the Serchu where it crosses the Lingti plain, as the river often becomes dangerous for fording. This road will, of course, always require annual repairs, but when once it is completed they would not be of an expensive character.

3. In consultation with Tara Chand, I selected what appeared to be the most suitable sites for building *serais*, or rest-houses, at Putseo and Zinzingbar. These *serais* should, I think, be of the most simple construction,—merely a row of very strongly-built huts without wooden doors (which are sure to be used as fuel), but with a high wall enclosing a small court in front to keep off wind and snow, and give shelter to horses.

* * * * * * * * *

6. The scheme proposed two years ago of establishing a summer village at Lingti, has not been carried out. The plains, though presenting a fine level expanse of grass with abundance of fuel (the Tama or Tibetan furze), have no surface water and cannot be irrigated, so that in this dry climate cultivation would be impossible. The Lahoulis being cultivators and not a pastoral people, will not settle for the summer with their flocks and herds as the nomad Tartars do in Rupshu and other parts of Ladakh.

It would be a great boon to traders if a small settlement or even a grain depôt could be established at Lingti, as it just breaks the journey of nine marches between Darcha and Ruckchoo, along which no supplies can be procured. A rest-house or rather huts for shelter is much wanted on the north side of Baracha at Kailung.

7. In order to examine the Serab Valley and Pongpo Pass before deciding on the best trade route through Ladakh, I have turned south-east from Lingti, and am now marching up the Serab Valley. Pundit Bukshi Ram is unable to accompany me, as he finds it necessary to travel part of the way in a *dooly*, and the Rupshu people all say that the Pass is not yet open, and no pony can cross it: it would be impossible to carry a *dooly* over safely.

He will go by the Lacha Ling which I already know, and meet me again at Perga.

No. 206—797, dated Murree, the 9th July 1870.

From—T. H. THORNTON, ESQ., D.C.L., Secretary to the Government of the Punjab,
To—The Officiating Secretary to the Government of India, Foreign Dept.

I AM desired to forward, for the information of the Government of India, copy of Report No. 4, dated 28th ultimo, received from Dr. Cayley, on special duty at Ladakh.

No. 4, dated 28th June 1870.

From—DR. H. CAYLEY, Joint Commissioner to Ladakh,
To—The Secretary to the Government of the Punjab.

SINCE my last report I have thoroughly examined the eastern route from Lingti by the Serap River over the Pongpa Pass and along the Isomriri Lake to Puga, and I am fully convinced that it is not only far inferior in every way to the old road by the Lachalang Pass and Rukchen, but that it is almost impracticable as a commercial route, unless enormous

expense is incurred in making a new road for nearly 30 miles over very difficult ground, which would take several seasons to complete, and, when made, would require extensive repairs and partial renewal every year on account of the effects of landslips and avalanches. This route has often been mentioned as possessing many advantages over that by the Lachalang, and from what I had heard from Natives who had travelled along it, I had myself that idea. I now find, however, that it is only traversed late in the autumn by traders with wool, borax, &c., carried on sheep and goats, which easily clamber along the rough stony slopes, and that in August it is looked upon as impassable from the size and force of the river, which has to be crossed several times.

2. I need not give a detailed description of the route, but only mention the following points:—

I.—From the junction of the Yunam and Serap streams at Lingti to Puga is by the Pongpala seven stages; by the Lachalang, Puga is only five, and the marches are as long or longer by the former than the latter route.

II.—Grass is not more abundant than by the Lachalang, although there is one very extensive grazing ground near the foot of the Pongpa Pass.

III.—The first march up the Serap to an encamping ground, called Lama Gura, is tolerably good and easy, but the next stage presents many difficulties. The path runs sometimes in the bed of the stream, which in August becomes a tremendous rushing torrent; at other times it lies along the steep stony slopes of mountains composed of brittle limestone, where, every spring, landslips occur and carry away or cover every vestige of a path.

IV.—The river has to be forded two or three times, and though a very insignificant stream when I saw it, in the height of summer it becomes dangerous and often quite unfordable.

V.—The ascent of the pass is not difficult; the height is, however, nearly 17,500 feet; the Lacha-lang being 800 feet less. The pass is, however, not safely open till late in July on account of some steep slopes of snow under overhanging precipices, from which water drops continually on to snow below, and freezes into a steep incline of smooth hard ice, on which laden horses can never safely pass. The snow is so completely sheltered from the sun by lofty precipices above, that it does not melt till late in summer. On the Lachalang scarcely any snow lies after June 15th, and never offers any difficulties.

VI.—The descent of the pass on the Ladakh side is very gentle and easy, as is the whole road on to Isomriri and Puga. The northern slope of the Lachalang is much more steep, but there is now a fairly good road, which only requires ordinary repairs to render it quite easy. These repairs will at once be commenced. The road from the north side of the pass to Puga is almost a level plain.

3. It admits of no doubt in my mind that the Pongpala route is unsuitable as the main trade road through Ladakh, and the old route by the Lachalang must be taken.

In this opinion Pundit Bakshiram concurs.

4. The next point to be determined is the line of route from Rukchen to the head of the Pangong Lake. There are two ways that are quite practicable,—*first*, the old well-known road which goes over the Taklang Pass to the Valley of the Indus, crosses the river at Machalang, 22 miles east of Lé, then runs up the Chimri Valley and over the Changla Pass to Tantsi and the Pangong Lake.

The other road turns eastward from Rukchen, crosses the Polokonko Pass to Puga, and then runs down to the Indus at Mahie or Nioma, and crossing the river by ford or ferry at high water, goes over a pass to Chushul on the Pangong Lake.

The distance by the two roads is about equal. The old road is well known and well-established, and fairly good, and can easily be improved. The passes, though high, are not difficult, and there is a good bridge over the Indus at Machalang. The other route for the four marches between Puga and Chushul I have not yet seen, but I believe it is very favourable, and the pass easier than the Chungla. A bridge would have to be thrown over the Indus, for which the timber would have to be carried at least 15 days' journey. The essential difference between the two routes is, that the old passes through inhabited and cultivated parts of Ladakh, where supplies of all kinds, grain and fodder, are plentiful, and carriage can more readily be obtained; whereas the Puga route lies through almost uninhabited tracts, where there are only two or three insignificant villages, and where cultivation is hardly carried on at all, and the distances from the sources of supplies so great that I can hardly think it possible that efficient supply depôts can ever be kept up, especially as regards grass and fodder; nor will carriage ever be procurable.

I hope shortly to traverse the portion of this route I have not yet seen, but unless it presents very decided physical inferiority over the other, I do not think it would be advisable

to fix upon it as a commercial road to be in future under the Joint Commissioners: the probable result would be that hardly a trader would ever travel by it.

In discussing the matter at Puga, three days ago, with Pundit Bakshiram, he said he was unable to express an opinion until he had referred to the Maharaja, and I now briefly bring these points to your notice, as I may have to ask for definite instructions on the subject before it can be decided.

5. My original plan was to proceed from Puga by Nioma and Chushul to the head of the Pangong Lake, and there meet the mission going to Yarkund; but at Puga I heard that Mr. Forsyth would not reach Lé till July, and also that messengers had just come over from Yarkund, and I deemed it advisable at once to hurry into Lé and pick up all the Yarkund news and ascertain accurately the state of the country. As this information may be of importance to Mr. Forsyth, I expect to reach Lé July 1st.

The arrivals from Yarkund are two messengers of the Dad Khwah of Yarkund, from whom they have brought letters for me,—one a complimentary letter expressing his wish for a continuance of friendship, and thanking me for some breech-loader cartridges and powder and caps I sent him last year, and sending me some specimens of China and Kashgar silk fabrics. The other letter was asking for medical advice.

The messenger left Yarkund about April 12th, and reached Lé on 16th June.

6. Mr. Shaw's servant and baggage have reached Ladakh. He has not yet arrived, but a dooly dâk is laid for him on the road.

7. Pundit Bakshiram has continued his march on from Puga towards the Pangong Lake.

No. 209-827, dated Murree, the 15th July 1870.

From—T. H. THORNTON, ESQ., D.C.L., Secretary to the Government of the Punjab,

To—The Officiating Secretary to the Government of India, Foreign Department.

I AM desired to forward, for the information of the Government of India, copy of a memorandum No. 5, dated 5th July 1870, from Dr. Cayley, on special duty at Lé, in Ladakh.

No. 5, dated Lé, the 5th July 1870.

From—DR. H. CAYLEY, Joint Commissioner to Ladakh,

To—The Secretary to the Government of the Punjab.

I REACHED Lé on the 1st of this month, and, on arrival, received the customary visits of ceremony from the officials of the District, who, as usual, came out to meet me and conduct me to my residence. Shortly afterwards, Mulla Bákí, the messenger of the Dad Khwah of Yarkund, came to see me, and spoke, without hesitation, about the state of Yarkund, and described everything as being well and prosperous. The Atálík Ghází was at Kashgar; but I gathered that he had been for a day or two at Yarkund to receive the annual tribute or presents.

The messengers left Yarkund about the 12th April, and reached Lé on the 16th June; and no intelligence of any kind has come over since the middle of winter almost immediately after the arrival of the envoy, Mirza Shadi.

In the evening I was visited by Kari Hamad, the Vakeel, sent on last winter from Yarkund to the Maharaja of Cashmir, and who returned from Jammú about ten days ago. He spoke of all being well in Yarkund, and will proceed there as soon as he can procure carriage, having sent on messengers about five weeks ago.

2. Mr. Forsyth and his party arrived here on the 2nd, and are still here waiting for the guns and other property belonging to the Vakeel, Mirza Shadi.

Syud Yakúb Khan, the envoy who went to Constantinople, is with Mirza Shadi. He is a connexion of the Atálík, and evidently much looked up to by all the Yarkundis. The letter he received last year from the Viceroy to convey to the Atálík was forwarded in the winter, and reached Yarkund before Mulla Bákí left.

3. Mr. Shaw arrived here on the 3rd, and has not suffered from his rapid journey. On that evening, I invited Yakúb Khan, Mirza Shadi, and Kari Hamad, the envoy to Cashmir, to dinner to meet Mr. Forsyth's party, and the evening passed most satisfactorily. I mention this, as such friendly intercourse with a man in the position of Yakúb Khan may be of assistance to the mission in Yarkund.

4. There is no news as yet of the kafila from Yarkund. The traders are beginning to arrive from the Punjab.

5. The dispensary is opened here as usual, and during the past week there has been a daily average attendance of 14, and 64 new patients have been admitted.

No. 220—875, dated Murree, the 27th July 1870.

From—T. H. THORNTON, ESQ., D.C.L., Secretary to the Government of the Punjab,

To—The Officiating Secretary to the Government of India, Foreign Department.

I AM desired to forward, for the information of the Government of India, copy of a report No. 6, dated the 14th July 1870, received from Dr. Cayley, on special duty in Ladakh.

No. 6, dated Pangong, the 14th July 1870.

From—DR. H. CAYLEY, Joint Commissioner to Ladakh,

To—The Secretary to the Government of the Punjab.

AFTER remaining a week at Lé, I left on the 7th and am now accompanying Mr. Forsyth's party, with whom are the Vakil Mirza Shadi and also Syud Yakúb Khan. I propose going on with them as far as the Changchenmo Valley. My plans then are to go on ahead and take the north-westerly route to the head of the main branch of the Karakash River, which was discovered by Mr. Hayward in 1868, follow down the course of the river and rejoin Mr. Forsyth on the other branch of the Karakash, and continue with him for four or five marches nearly to Shadula. I then wish to turn back over the Sukait Diwan and make my way across the plains between that and the point on the Karakash called by Mr. Hayward Kush Maidan. In this way I shall see all the routes between the Changchenmo Valley and Shadula, and be able to decide upon the best. Mr. Forsyth will go by the route across the northern plains which I followed in 1868, and which is now well known to Mr. Shaw and to many of the Natives with them. It would not be safe for their large camp to follow a new route unknown to every one present, and where the road might be impossible for horses, or where grass and water might not be procurable. My journey will, of course, take time, which I can with difficulty spare; but it is most important that the future trade route beyond the Changchenmo should be definitely settled, and I can only do this satisfactorily by personally examining all the different routes. I shall be able afterwards, in consultation with Pundit Bakshiram, to lay down the road through Ladakh Proper and arrange for *serais*, &c. The road from the Indus to the Changchenmo by Tantsé is now excellent, and *serais* have already been built at several places which I pointed out last year. The Yarkund envoy is greatly pleased with the road thus far.

2. I submit Tables showing the trade of Ladakh during the winter season. The total amount is a little more than in the corresponding period of last year. As will be seen from the Returns, the Rampúr and Kullu routes were quite closed.

The Srinagur route was open in November and June, and a considerable quantity of merchandise, chiefly belonging to traders of Kashmir, passed along it both to and from Ladakh.

In November about 80 horse-loads of goods went to Yarkund, partly belonging to some of the Yarkundis who remained later than usual in Ladakh, but chiefly in the hands of merchants of Kashmir. At the end of October about 120 horse-loads of goods went to Yarkund by the Changchenmo road and reached Shadula with the loss of only three horses (this merchandise was given in last year's Returns). Very soon afterwards the merchants who went back by the Karakoram lost nearly half their baggage animals. The imports from Chanthang and Shapa were considerable, including 106 maunds of brick tea and 340 maunds of pushm and wool. The exports to Chanthang comprised, rice, flour, and dried fruits.

One hundred and eighty-six maunds of brick tea went to Kashmir, and a small quantity (one maund) was taken for the first time to Yarkund.

3. No intelligence of any kind has come from Yarkund since the middle of June as noticed in my last.

TABLE I.

Exports from Ladakh during the eight months from 1st November 1869 to 30th June 1870.

ARTICLES.	QUANTITY IN MAUNDS OF 80lbs. BY						Rate in Lé.	Value in Lé.	REMARKS.
	Kullu.	Rampúr.	Srinagur.	Chanthang.	Yarkund.	Total.			
			Mds. Seers.	Mds. Seers.	Mds. Seers.	Mds. Seers.	Rupees.	Rupees.	
Bhang, Charas ...	.....	.....	59 34	.....	.....	59 34	60 per Md.	3,591	
Pushin, White ...	.....	.....	197 6	.....	.....	197 6	50 „	9,857	
„ Black ...	.....	.....	40 16	.....	.....	40 16	25 „	1,010	
Tea, Brick { Green ...	.....	.....	185 0	.....	0 39	185 39	160 „	29,756	
Tea, Brick { Black ...	.....	.....	0 35	.....	.....	0 35	120 „	105	
„ China and Kangra ...	.....	.....	.....	.....	11 8	11 8	160 „	1,792	Of this, 3 maunds 12 seers Kangra tea, the rest China.
Copper Vessels ...	.....	.....	3 33	.....	.....	3 33	100 „	383	Exported to Skardo.
Phulli, Soda Earth ...	.....	.....	21 25	.....	.....	21 25	1–4 „	27	
Cotton Goods ...	.....	.....	2* 0	.....	30 8	32 8	175 „	5,637	* To Skardo.
Spices, Kiriana ...	.....	.....	.....	.....	73 0	73 0	40 „	2,920	
Iron ...	.....	.....	0 16*	.....	.....	0 16	30 „	12	* To Skardo.
Skins, Lakhi ...	.....	.....	.....	.....	24 0	24 0	68–8 „	1,500	
Sugar ...	.....	.....	.....	.....	58 4	58 4	40 „	2,324	
Senna ...	.....	.....	.....	.....	4 8	4 8	20 „	84	
Hallela (a drug) ...	.....	.....	.....	.....	2 32	2 32	20 „	56	
Borax ...	.....	.....	0 8	.....	.....	0 8	20 „	4	Purified.
Tamarind ...	.....	.....	.....	.....	1 16	1 16	40 „	56	
Riwand, Rhubarb ...	.....	.....	0 20	.....	.....	0 20	160 „	80	
Dried Apricots ...	.....	.....	.....	100 0	.....	100 0	5 „	500	
Rice ...	.....	.....	.....	20 0	.....	20 0	6–4 „	125	
Flour, Sattoo ...	.....	.....	.....	140 0	.....	140 0	1–14 „	263	
„ Common ...	.....	.....	.....	40 0	.....	40 0	1–14 „	75	
Felt Rugs ...	.....	.....	221 in No.	.....	.....	221 in No.	2 each	442	
Silk Fabrics ...	.....	.....	22 Thans	.....	.....	22 thans	.....	50	From Yarkund.
Bulti, Pashmina ... } Cloths (Pattoo and Chadars) ... } Ladaki Pashmina ... }	.....	.....	17 „	.....	.....	17 „	.....	230	
Tawár, Satin ...	.....	.....	1 „	.....	.....	1 „	50 each	50	From Yarkund.
Otter Skins ...	.....	.....	.....	.....	200 in No.	200 in No.	4 „	800	
Carpets ...	.....	.....	2 in No.	.....	.....	2 „	4 „	8	
Yáks' Tails ...	.....	.....	24 in No.	.....	.....	24 in No.	1–8 each	36	
Musk Bags ...	.....	.....	7 „	.....	.....	7 „	10 „	70	
Postin Furs ...	.....	.....	15 „	.....	.....	15 „	12 „	180	
Incense from Lhassa ...	.....	.....	2 bundles	.....	.....	2 bundles	.....	15	
Silver Ingots ...	.....	.....	80 in No.	.....	.....	80 in No.	170 each	13.600	
Gold ...	.....	.....	2,520 tolas	.....	.....	2,520 tolas	13 per tola	32,760	
Arms, Guns, Pistol, &c. ...	.....	.....	.....	.....	16 in No.	16 in No.	.....	210	Of Cashmir make.
TOTAL ...	.....	.....	511 33	300 0	205 35	1,017 28	.....	1,08,608	

H. CAYLEY,
Joint Commissioner to Ladakh.

TABLE II.

Imports into Ladakh during the eight months from 1st November 1869 to 30th June 1870.

Articles.	Quantity in Maunds of 80lbs by						Rate in Lé.	Value in Lé.	Remarks.
	Kullu.	Rampúr.	Srinagur.	Chanthang.	Yarkund.	Total.			
			Mds. Seers.	Mds. Seers.	Mds. Seers.	Mds. Seers.	Rupees.	Rupees.	
Bazzazi Cotton Goods ...	.....	.....	7 19	.....	.....	7 19	175 per Md.	1,307	English Piece Goods.
Coarse Cloth, Garhá ...	.....	.....	.....	.....	1 10	1 10	87-8 „	109	Coarse Yarkund Cloth.
Spices. Kiriana ...	.....	.....	2 32	.....	.....	2 32	40 „	112	
Red Skins, Lakhi ...	.....	.....	36 35	.....	.....	36 35	62-8 „	2,305	
Sugar	.....	.....	84 2	.....	.....	84 2	40 „	3,362	
„ coarse, black ...	.....	.....	2 32	.....	.....	2 32	20 „	56	
Copper Vessels ...	.....	.....	1 12	.....	.....	1 12	100 „	130	
Iron ...	.....	.....	0 6	.....	.....	0 6	30 „	5	
Tea ...	.....	.....	71 0	.....	.....	71 0	160 „	11,360	Of this, 3 maunds 12 seers Kangra tea, the rest China.
„ Brick ... { Green ...	.....	.....	.....	71 0	.....	71 0	160 „	11,360 }	Brick Tea from Lhassa.
„ Brick ... { Black ...	.....	.....	.....	35 20	.....	35 20	120 „	4,290 }	
Indigo ...	.....	.....	3 39	.....	.....	3 39	160 „	636	
Tamarind ...	.....	.....	0 28	.....	.....	0 28	40 „	28	
Senna ...	.....	.....	0 36	.....	.....	0 36	20 „	18	
Drugs of sorts ...	.....	.....	0 22	.....	.....	0 22	40 „	22	
Preserves, Ginger ...	.....	.....	1 24	.....	.....	1 24	40 „	64	
Soap ...	.....	.....	1 0	.....	.....	1 0	40 „	40	
Rice ...	.....	.....	26 4	.....	.....	26 4	6-4 „	163	
Honey ...	.....	.....	26 23	.....	.....	26 23	25 „	664	
Tobacco ...	.....	.....	15 28	.....	.....	15 28	20 „	314	
Majeet, red dye ...	.....	.....	3 30	.....	.....	3 30	20 „	75	From Skardo.
Ghee ...	.....	.....	1 32	.....	.....	1 32	25 „	45	
Specie (Rupees) ...	.....	.....	2 28	.....	.....	2 28	4,000 „	10,800	English Rupees.
Saffron ...	.....	.....	1 4	.....	.....	1 4	1,080 „	1,188	
Pushm, white ...	.....	.....	.....	180 0	.....	180 0	50 „	9,000	
„ black ...	.....	.....	.....	60 0	.....	60 0	25 „	1,500	
Wool, Sheeps ...	.....	.....	.....	100 0	.....	100 0	15 „	1,500	
Otter Skins ...	.....	.....	213 in No.	.....	.....	213 in No.	4 each	852	
Brocade ...	.....	.....	15 pieces	.....	.....	15 pieces	75 „	1,125	
Broad Cloth ...	.....	.....	1 „	.....	.....	1 „	100 „	100	
Miscellaneous, (Shoes, Socks, Caps, &c.) ...	.....	.....	572 in No.	.....	.....	572 in No.	.....	552	
Gagri, green leather ...	.....	.....	60 pieces	.....	.....	60 pieces	1 each	60	
Stationery, Pen Boxes, &c.	.....	.....	103 in No.	.....	.....	103 in No.	.....	117	
Woollen Cloths, Puttoos and and Chadars, colored ...	.....	.....	24 „	.....	.....	24 „	.....	264	
Woollen Cloths, Puttoos and Chadars, white ...	.....	.....	43 pairs	.....	.....	43 pairs	.....	728	
Embroidery, Cotton ...	.....	.....	7 pieces	.....	.....	7 pieces	8 each	56	
Shawls ...	.....	.....	2 pairs	.....	.....	2 pairs	80 „	160	
China Caps ...	.....	.....	500 in No.	.....	.....	500 in No.	0-8 „	250	
Snuff ...	.....	.....	20 bottles	.....	.....	20 bottles	3 „	60	
Arms, Guns, and Swords, &c.	.....	.....	2 in No.	.....	.....	2 in No.	.....	30	
Felt Rugs, Numda ...	.....	.....	.....	.....	23 in No.	23 „	2 each	46	
Lamb Skins, Chern ...	.....	.....	.....	.....	18 „	18 „	0-8 „	9	
Silver Ingots, Kurn ...	.....	.....	.....	.....	80 „	80 „	170 „	13,600	
Gold ...	.....	.....	.....	.....	2,520 tolas	2,520 tolas	13 „	32,760	
Carpets ...	.....	.....	.....	.....	2 in No.	2 in No.	10 „	20	
Silk Cloths ...	.....	.....	.....	.....	4 pieces	4 pieces	6 „	24	
Total ...	.....	.....	292 36	446 20	1 10	740 26	.....	1,11,266	

H. CAYLEY,

Joint Commissioner to Ladakh.

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

CONDITION OF IMMIGRANTS IN THE COLONY OF ST. VINCENT.

Public.
No. 75.

INDIA OFFICE;
London, the 14th July 1870.

To His Excellency the Right Hon'ble the Governor General of India in Council.

MY LORD,—In continuation of my despatch of the 7th of April last, No. 32, I forward herewith a copy of a despatch* from the Lieutenant-Governor of St. Vincent, covering the report of the Immigration Agent in that Colony for the last half of 1869, together with a letter from the Emigration Board to the Colonial Office reviewing the same.

* 9th of May 1870, No. 43.

2. I am glad to perceive that this report is, in all respects, satisfactory.

I have the honor to be,

MY LORD,

Your Lordship's most obedient, humble Servant,

ARGYLL.

No. 43, dated Government House, St. Vincent, the 9th May 1870.

From—The Hon'ble G. BERKELEY, Lieutenant-Governor of St. Vincent,

To—His Excellency GOVERNOR RAWSON, C.B., &c., &c. &c.

I HAVE the honor to forward to your Excellency, for transmission to the Secretary of State, the report* of the Immigration Agent for the half-year ended 31st December last, the delay in furnishing which has arisen, as stated by Mr. Brown, from a want of punctuality on the part of the managers in making their periodical returns.

* 19th April 1870.

2. I trust your Excellency will agree with me in regarding the state of things exhibited in this report as favorable. The principal events of the half-year were the arrival of 343 immigrants from Calcutta, and the commutation of the return passages to which a right had been acquired by 112 of the first batch of coolies (Madrasees) ever introduced. This latter operation of a law recently sanctioned is most beneficial, both as effecting a large saving of expense for return passages (the maximum bounty in lieu being £10), and as retaining in the country laborers who have become acclimated and familiar with their duties.

3. In my despatch No. 689 of the 23rd November 1869, I referred to certain irregularity in the visits to estates of the medical attendants, consequent upon exceptional circumstances which I described. The directions issued by me to the proprietors have resulted in as careful provision as it is possible to make against the recurrence of such irregularity; and I am happy to add that on one estate in the leeward quarter, where the Surgeon's visits had previously been (by special permission) limited to once a month, in consequence of there being no medical gentleman resident within 22 miles, the proprietors have, at increased cost, secured weekly visits of an experienced practitioner from Kingstown.

Dated St. Vincent, the 19th April 1870.

From—J. H. BROWN, ESQ., Immigration Agent,

To—The Hon'ble the Colonial Secretary.

I HAVE the honor to present my Report on Immigration for the half-year ending 31st December 1869.

The reason for its delay I have already communicated to you, *viz.*, the delay in the half-yearly returns from the estates, and from my having to return many of them for amendment.

Half-yearly Visit.—This visit, directed by law, I have paid to the various plantations upon which immigrant laborers are located. I have inspected the immigrants, their houses, and the books required to be kept, and found nothing objectionable. At some places. the buildings, needed white-washing, which I directed to be done. The medicines prescribed by regulation, are in possession of the managers, except on Montrose Plantation, for which, as it adjoins the town, prescriptions as ordered are made up at the druggist.

Medical Visits.—In the month of July, Drs. Arnott and Hughes were compelled to leave the Colony to recruit their health, and, unfortunately, at the same time, Dr. Checkley was attacked by serious illness. These circumstances, beyond control, occasioned suspension of weekly visits to some of the estates. Dr. Cumming has charge of the windward portion. The attention of the Government was directed to the occurrence, and happily it was proved that no sickness prevailed. Upon the return of Dr. Arnott, and the recovery of Dr. Checkley, the punctuality of the visits was resumed, and has since continued.

The following five Schedules convey the information principally looked for, from this report:—

SCHEDULE A.

Births.—The births have been 22. The sexes are detailed, and the plantations on which the deaths occurred.

SCHEDULE B.

Deaths.—The deaths have been 12; the causes of death are shown.

SCHEDULE C.

Exhibits full particulars of the comparative and actual number of Indian immigrants, removals, additions, labor, idleness, and earnings.

Numbers.—The amount of Indian labor was shown to be 722 on 30th June 1869. On 31st December 1869, it has increased to 1,181.

Arrivals.—On the 13th day of July, the ship *Imperatrice Eugenie* arrived and landed 343 souls equal to 306 adults, 200 men, 83 women, 28 boys, 18 girls, and 14 infants. During the voyage, there were six births; and six adults, two boys, and four infants died. The people were landed at the depôt. They were visited twice a day by the Health Officer, Dr. Arnott; the really sick were sent into the Colonial Hospital, where five died; those with slight ailments were placed apart from the body of the people, in a temporary hospital at the depôt. After the lapse of a week, by which time they had recovered from the effects of the voyage, they were distributed as shown in Schedule C. One hundred and twelve people *ex-Travancore* from Madras in 1861, who became entitled to a back-passage, entered into fresh contracts upon the plantations enumerated in same schedule, for a period of three years, receiving a gratuity of $25 equal to £5-4-2 and resigning all claim to back-passage. This arrival, the retention of the *Travencore* people, and the excess of births over deaths, account for the increase in numbers.

Removals.—There have been none during the year.

SCHEDULE D.

Crimes and Offences.—Eighteen immigrants were placed in jail during the half-year Their offences, as shown, were not of a serious nature.

SCHEDULE E.

Particulars of African and Portuguese Immigrants.—The numbers are reduced by five from the last half-year, that number of Africans having passed out of indenture.

Health.—The health of the coolies generally has been favorable.

Relations between Master and Servant—Continue to be satisfactory.

Labor.—The number of days on which labor was performed amounted to 93,694, sickness and holidays to 34·930, idleness to 17·932; the total earnings to $14,866-92c., and the average earnings show an increase upon last half-year. The people received per *Imperatrice Eugenie* have proved well adapted to field work, and are generally pronounced to be the best of the batches of immigrants yet received. Those per *Newcastle* are improving in habits and industry.

The year 1869 closed upon the plan of immigration in as favorable a position as could be reasonably expected and with fair prospects for the future development.

Dated Emigration Board, the 22nd June 1870.

From—Sir T. W. C. Murdoch,

To—Sir F. Rogers, Bart &c., &c.

I have to acknowledge your letter of the 15th instant, with a copy of a despatch from the Lieutenant-Governor of St. Vincent, enclosing the usual report from the Immigration Agent for the half-year ended 31st December last.

2. This report, it is explained, has been delayed from the want of punctuality on the part of managers in making their periodical returns. It is of a satisfactory character, and calls for no comment. The leading statistics are as follows :—

3. The number of indentured Indians on 31st December 1869 was 1,181, including 337 new arrivals in the half-year by the *Imperatrice Eugenie*, 112 who had commuted their right to a back-passage and re-indentured themselves, and 10 the excess of births over deaths. They were all located on 23 estates. The number for the preceding half-year was 722.

4. The deaths in the half-year were 12 and the births 22. The number of offences was 18, of which two were larceny, seven breach of contract, and nine assaults, all committed by coolies *inter se*, and none of them said to be serious.

5. The amount of work performed calculated in days was 936·694, of sickness and holidays 34·930, and of idleness 17·932. The total earnings were $14,866-92c. The health of the coolies was generally favorable, and the relations between them and their employers continue to be satisfactory.

6. Besides the coolies, there were 14 Africans and three Portuguese indentured of five estates. This is five fewer than on the 31st July 1869, that number having passed out of indentureship in the half-year.

MEMORANDUM BY ARMY SANITARY COMMISSION ON DR. BRYDEN'S REPORT ON EPIDEMIC CHOLERA.

Sanitary.

No. 21.

India Office;

London, the 14th July 1870.

To His Excellency the Right Hon'ble the Governor General of India in Council.

My Lord,—I forward herewith, for the information of your Excellency in Council, 20 copies of a memorandum by the Army Sanitary Commission on Dr. Bryden's report on epidemic cholera.

2. I desire that a copy of this memorandum may be sent to Dr. Bryden.

I have the honor to be,

My Lord,

Your Lordship's most obedient, humble Servant,

ARGYLL.

Memorandum by the Army Sanitary Commission on Dr. Bryden's *Report on the Cholera of* 1866-68, *and its relations to the Cholera of previous epidemics in India,—dated War Office, the 20th May* 1870.

This report is a valuable contribution to the epidemiology of India. It contains a large amount of extremely interesting detail on the subject of cholera, extending over many years, including the first connected view of epidemics of cholera in Bengal, with detailed statistics, for British and Native troops and for jails.

The statistical data are deficient in some necessary particulars. For instance, there are no statistics of cholera among the Native population, such information not having been in existence, and there are in the report no detailed statistics of cholera for Bombay and Madras Presidencies capable of being usefully compared with these for Bengal. Without full statistical information,

such as we have asked for in our instructions for the Indian Cholera Enquiry, the law of movement of cholera cannot be accurately arrived at, and the absence of these data renders it necessary for us to suspend our judgment on Dr. Bryden's views for the present.

The general statistical arrangement adopted by Dr. Bryden includes the following data for British and Native troops :—

(1) years of epidemics;

(2) stations attacked in each year;

(3) strength of troops at each station;

(4) monthly admissions and deaths at each station.

The jail statistics include corresponding data, and are partly placed in the text.

Besides these general Tables, there are numerous summary and analytical Tables giving the details day by day of specific outbreaks of cholera in regiments and jails, and showing the death-rates to strength and to cases.

A few Tables showing the influence of rain-fall are introduced, but the meteorological data are generally deficient.

There is little or no information on the sanitary condition of stations.

The influence of meteorology on the progress of cholera is fully acknowledged, and the probable effect of bad sanitary condition and locality in augmenting the severity of attacks is admitted, as is also the influence of personal communication. But all such influences are considered by Dr. Bryden as subsidiary and subordinate to other laws of epidemic movement.

The view generally held by the author on this point resembles that held in Europe, *viz.*, that there is a movement of epidemic cholera independent of all conditions, but the existing state of sanitary improvement in India does not yet appear to have shown to what extent the fatality of epidemics among a population depends on the conditions under which the people live, and hence Dr. Bryden subordinates the conditions to the general law of movement which his report is intended to illustrate.

The law of movement is arrived at through the statistical data.

From what has been already said respecting the nature of these data for regiments and jails, it will be seen that the dates at which cholera has appeared at any station or jail over the North of India can be obtained, and in this way the movement of cholera in time and space from its beginning to its termination, so far as regards stations, at least, can be shown. But without the evidence which would be afforded by statistics from other Presidencies and Governments, including statistics of the Native population, it is evident that the data from regiments and prisoners cannot by themselves be accepted as affording all the information required on the movement of an epidemic. The military or jail statistician may be able, in his own estimation, to fix the precise date of the arrival of an epidemic from his hospital books, while cholera may have passed the locality long before, and be many miles ahead in its course among the Native population. A similar remark applies to the termination and resuscitation of an outbreak. Again, while the statistician in the North of India may be dealing with one group of facts, there may be phenomena in progress in the South which would materially influence his conclusions.

We have stated in our "Instructions" what appears to us to be the only true principle on which such an investigation can be carried out, as follows :—"Epidemics seize on all classes of the population, and no trustworthy information can be obtained regarding the movement of epidemic cholera, except by including all classes in the same general statistical inquiry."

Taking Dr. Bryden's data as they are, we shall next proceed to state generally the principles at which the reporter has arrived. But in doing so, it is necessary to premise that, from certain obscurities in style in parts of the report, it is not always easy to follow the author's reasoning.

A line drawn along the 86th meridian of East longitude, from the mouths of the Mahanuddy to the roots of the Himalaya, and another line parallel to this, drawn from the North-East angle of the Bay of Bengal to the Himalaya, will form the Western and Eastern boundaries of a great tract of country, with an area of about 122,500 square miles, having the Himalaya for its Northern, and the sea for its Southern limit. It is the country of the great waters, and contains within it the deltas of the Mahanuddy, Ganges, and Bramahpootra.

This great District is, in Dr. Bryden's view, the perennial home of Indian cholera. It was first recognized as a mortal disease within this area. It always exists in its endemic

condition within this endemic country. It never dies out, it appears and disappears at different points and at different seasons, and sometimes even within this area it becomes epidemic without necessarily passing over the ordinary endemic limit. Its climatology is peculiar. The whole region is under the influence of the sea board. It is a region of perennial moisture, from drainage of its own hills and from river outlets. Its rain-fall is double that of any other Province in Bengal Presidency. It receives the full force of the monsoon. Ground moisture is always within a few feet or inches of the surface. Vast tracts are under water every year until the cessation of the monsoon, and the fall of the rivers permits the ground to rise above the water. "It is with the inundation of these tracts that cholera disappears; it is with their re-appearance that cholera re-appears upon the diluvial soil and Districts adjacent, immediately invaded by it"

Besides cholera, the population of this endemic area suffers intensely from the whole group of miasmatic diseases and their consequences.

It may be stated here that Colonel Henderson showed that, of the third of the Bengal Native Army serving in Bengal Proper, the mortality was greater than of the two-thirds occupying the plains to the North-West.

It is the weak point, so to speak, of India, and from among its teeming population spring up those "bodies of cholera," as Dr. Bryden defines them, which overflow the boundary from time to time, and commence their destructive march towards the North-West, or West or South-West, East, or North-East, overflowing at last the boundaries of India and invading the regions of Asia, Africa, and Europe which happen to be in their course.

Much cholera within the endemic area bodes danger to the Districts beyond it.

Little cholera within the area is unfavorable to epidemic advance.

Dr. Bryden appears to hold the view that all cholera occurring outside the endemic area is invading cholera. It is a cholera which originally came from the endemic area. It may have apparently disappeared and died out, and its re-appearance, if this takes place, is simply a revival of the original body of the invading cholera. Such a revival outside the endemic area may itself become the starting point for further progress of cholera into the regions beyond.

India is thus to be considered as divided into an endemic area and epidemic areas. The phenomena may differ in the epidemic areas, but they are to be considered as epidemic phenomena nevertheless.

In the present state of knowledge, Dr. Bryden considers that the ultimate cause or *materies* of cholera, whatever this may be, comports itself more like an organized vitalized body than anything else. That it has a period of growth, existence, decay, re-vitalization, and death, and that these states are under the influence of time, place, and atmospheric conditions.

Hence he holds that when any Station or District, outside the endemic area, is attacked with cholera, with intervals or seasons of entire cessation, the fact is not to be interpreted as showing that cholera is endemic in the station or locality, and has broken out afresh at each increase. He holds that these variations in intensity are influenced by season or by monsoon influences, or by rain-fall or winds, but that they are all part of the original epidemic invasion of the country.

The epidemic itself is made up of these periodical appearances and disappearances, and the *materies* of which it consists may be augmented from time to time by fresh invasions from the endemic area.

The direction which any epidemic may take, depends on the point at which cholera overflows the endemic boundary. If this is towards the North-West it would follow the Ganges Valley upwards. If towards the West, it would seize the Hazareebagh plateau, and proceed Westwards. If towards the South and West, it would cross the country towards Bombay.

Cholera epidemics proceeding Westward would continue their course until met by the South-West monsoon, and would then be turned Northward by the atmospheric influences.

The arrest of cholera at any part of the Indian frontier will depend on the strength of the body moving, and on conditions favorable or unfavorable to its onward progress. It might stop anywhere when exhausted.

A Westward moving cholera is the one which, under favoring conditions, would pass into Arabia, Africa, and Southern Europe; while a cholera moving to the Northward would invade Persia and Russia.

Dr. Bryden considers that the whole bearing of the cholera miasm has a remarkable resemblance to that of the miasm producing malarial fevers, only that it has its own specific character. He holds that cholera miasm may exist without population; that the existence

of population is only the condition under which its presence is manifested; that it will cross unpeopled deserts and attack the Districts beyond, if lying in the direction in which it is progressing, and hence that all attempts to arrest its course by quarantine must necessarily be futile; that, once started on its course, it must fulfil its life period, which, for Northern India, appears to be four years.

There is a most interesting series of maps in the report, illustrating the laws of progress of cholera as deduced from the available statistics over the North-West and West of India.

These maps show cholera always present within the endemic area already described. In the first year of its epidemic progress, it is shown as overstepping the endemic boundary, and occupying a certain region of country to Westward. Next year, as occupying more ground; the third year, as still progressing, but occupying some of the older ground with less intensity, and during the fourth year reaching its most distant limit from the endemic boundary, while the District immediately outside the boundary which was first attacked is free or nearly so.

The next epidemic shows a fresh outbreak on this exempted District, and then a progressive course West and North-West as before for the next four years.

Dr. Bryden appears to consider that the force which moves an epidemic of cholera is the wind. He doubts altogether the alleged fact that an epidemic has ever progressed in a direction contrary to the wind; a resuscitation of cholera in any direction contrary to that of the wind would, in his view, depend on some other cause, possibly a re-vitalization of part of an epidemic which at the very time is moving with the wind.

The course taken by the epidemic in any particular District or Province will be modified by local geographical or topographical conditions, or by meteorological causes of a temporary nature, but all will be subordinate to the great onward primary movement and the force which guides it.

Among subordinate conditions influencing the local course and local severity of an epidemic progressing in obedience to the great primary movement, Dr. Bryden ranks all those causes included under local sanitary condition, local topographical causes, such as wet or marsh land, local rain-fall, changes of temperature, great stillness of atmosphere, personal communication, bad personal habits on the part of troops, intemperance, general want of cleanliness, fatigue, terror, alcoholic poisoning, and the like. He adduces cases which appear to him to prove communication from persons to persons of cholera; but communication would not, in his view, influence the movement of the epidemic itself, which is subject to other laws altogether.

On the other hand, he brings forward long experience in the hospitals of Calcutta within the endemic area, and also of hospitals elsewhere, to show that apparent communication of cholera from affected patients to attendants or to other patients is a rare occurrence, if it ever really takes place.

He calls in question all the recent popular theories of epidemic cholera, and shows that none of them can account for the facts of epidemics. He shows that the dry-earth system, from which so much was expected on account of its supposed more complete disinfection of cholera excreta, had led to no apparent result as regards this disease. He sets aside the decisions of the Constantinople Conference regarding the movement of cholera, as not being in conformity with facts. Dr. Bryden adduces some most interesting, though melancholy, facts, showing the influence of cholera on different races attacked at the same stations and at the same dates.

The general results are as follow:—

Attacks per 1,000—	
European Troops	89·20
Native „	9·56
Died per 1,000—	
Europeans	53·68
Natives	4·11
Died out of every 100 cases—	
Europeans	60·19
Natives	43·02

Goorkhas suffer even more than Europeans from cholera.

These figures represent the terms of the great problem which has to be studied and solved in India.

If cholera depends on a specific cause, what is the reason that it is 13 times more fatal to one class of men than to another? And can we by any procedure reduce the mortality among British and Native troops serving at the same station to the same figure?

Dr. Bryden makes a few important suggestions, and brings forward a few facts on the subject which merit consideration.

The history of cholera and its origin within the endemic area has never been studied. This should certainly be done at once. It would be a special application of our instructions if it were undertaken.

Dr. Bryden has adduced strong reasons for anticipating that the severity of epidemics in India would be materially diminished by attacking cholera in the endemic District. If the waters of this great area were brought under some control; if wet parts were drained; if the localities where cholera is ever present were specially dealt with; if, above all things, this rich Province were to be placed under improved culture and its malaria exchanged for useful produce, should we have reason to anticipate less cholera, or even its extinction?

This is a question to be specially dealt with in India; it can only be hinted at here as an apparent induction from Dr. Bryden's facts.

Another striking class of facts is the exemption from cholera of well wooded Districts, and increasing liability to the disease apparently in proportion to the denudation of the country.

Allied to this class of facts is the practice successfully followed by Native villagers of flying to the jungle for safety during cholera seasons.

The greater sub-division of Native than of European Regiments, from the practice of Native hutting, is another point worthy of notice.

Cholera is stated to have appeared in double-storied barracks in India, but Dr. Bryden shows that for seven years the new lofty barracks in Fort William have enjoyed comparative immunity from cholera.

An important fact, as bearing on the probable effect of keeping masses of men aggregated on a small surface in augmenting the severity of cholera, is that Native troops crowded together in boats appear to suffer as great a mortality as European troops in barracks.

The argument from this class of facts bears on the necessity of separation among men when cholera is expected, sowing them, as it were, broadcast over the ground.

Dr. Bryden adduces striking proof of great loss of life from increasing the number of men in a barrack during cholera times.

These are the main practical points in the report, which, it must be borne in mind, has for its object ascertaining the laws of movement of cholera, rather than suggesting meansolf diminishing its mortality. If our "Instructions" for the Indian Cholera Enquiry are rigidy followed, additional light will be thrown on all the questions dealt with by Dr. Bryden, as well as on many other questions beyond the scope of this valuable report, which, in addition to its special object, contains a large number of facts of great interest to all engaged on similar enquiries.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

REPORT ON THE DESERT OF BHAWULPOOR.

No. 2453I, dated Lahore, the 1st July 1870.

From—Lieut.-Col. J. Crofton, R.E., Joint Secretary to the Government of the Punjab, Public Works Department, Irrigation Branch,

To—The Secretary to the Government of India, Public Works Department.

With reference to your Office letter No. 347 I of 28th September last, calling for information regarding the tract of culturable land in the so-called "Desert" of Bhawulpoor, I am desired by the Hon'ble the Lieutenant-Governor to forward a letter as per margin, from the Political Superintendent of the State, Major Minchin, with enclosures, and a brief summary by the Chief Engineer in this Department.

No. 38 of 11th May 1870.

2. The apprehensions expressed by Major Minchin of the probable effect on the volume of the Sutlej adjoining Bhawulpoor from the construction of the large irrigation works higher up are not, His Honor considers, without some foundation. In the *Bangur* and even the desert, the wells show a change of water level, one proof of which may often be seen in the upper portion of a well being of large diameter, while a cylinder of smaller diameter has been carried down to the present spring level from the bottom of the large portion. The fact is not noticed in these reports, but it was formerly a subject of much discussion as to the causes of the change in the level of the water.

3. The Political Superintendent will be advised to carry out the annual measurements of the discharge of the river suggested by the Chief Engineer.

4. The papers and maps from Bhawulpoor are forwarded in original, no copies have been kept, and I am to request the favor of 50 copies of all, when printed, being sent to this Office.

No. 38, dated Bhawulpoor, the 11th May 1870.

From—Major C. C. Minchin, Political Agent and Superintendent of Bhawulpoor,

To—The Joint-Secy. to the Govt. of the Punjab, in the P. W. Dept., Irrigation Branch.

Referring to your letter No. 3666I, dated 16th October last, forwarding copy of letter No. 347I, dated 28th September 1869, from Secretary to Government of India, Public Works Department, calling for a report on the tract of arable land in the desert near Bhawulpoor with a plan showing the levels, &c., I have now the honor to submit a report from Mr. Barns, F.G.S., Superintendent of Irrigation, on the subject, together with a map and sections of levels taken during the past 18 months, reduced to the mean sea level, Kurrachee harbour.

2. In this map Mr. Barns has entered all the existing canals having separate heads from the rivers, which will show how largely advantage has been taken of our river board, and how deeply interesting the large irrigation schemes entered upon by Government are to us as affecting or likely to affect, our canal irrigation.

3. The Sirhind Canal is the one I view with the greatest alarm, as it must eventually reduce the volume of water in the Sutlej until it becomes a mere tributary of the Beas; and if, in addition, the dam is constructed at Ferozepoor, we must be prepared to see not only our canals affected, but the water in the wells lowered to an extent that may make them useless for agricultural purposes, as I believe has happened in the Mooltan villages bordering the Ravee.

4. If the Ferozepoor dam is constructed, I trust that Government will consider the regulation and control of the river between the dam and the Bhawulpoor Railway Bridge as an integral portion of the scheme, and affording some hopes of averting the heavy losses which this State must otherwise incur even when the State has obtained a share in the dam and a canal brought down the left bank.

5. The levels taken in this neighbourhood show that a canal from this dam would command the whole Bungur Tract, and as this tract is intersected by long ranges of sand hills running parallel to each other, it would be quite possible to convert some of them into tanks for storing water by closing the ends, as I believe was done in Ajmere.

6. The preparation of this map has been a work of time, as it could only be taken in hand when leisure was afforded from other important works; as, in addition to the ordinary canal clearances, we have excavated this season one entirely new canal and given new heads to five other large canals, which will account for the slight delay in the submission of this report.

Dated Bhawulpoor, the 31st March 1870.

From—J. W. BARNS, ESQ., F.G.S., Supdt. of Canal Irrigation, Bhawulpoor State,

To—The Political Agent and Superintendent, Bhawulpoor State.

THE levels taken last working season by Supervisor Keddar Nath and party over a large portion of the *Bangur* and desert land within this State having now been plotted, I have the honor to forward herewith a tracing of the same, on a scale of eight miles to the inch, on which I have also fixed in the levels of many other portions of the State, which have been taken during the present working season; the bench marks laid down by the officers of the Great Trigonometrical Survey, form the basis of this work, and all levels are reduced to the same datum, *viz.*, that of mean sea level, Kurrachee harbour; simultaneously, the plan itself is simply a copy of the eight-inch scale map of the Great Trigonometrical Survey Department, such points only as are not therein delineated being fixed in by compass traverses; canals shown by dotted lines are merely sketched in; and, as regards the rest, they are fixed in from rough compass Surveys. With this map I also beg to forward the following sections: section from Ameera in the Ferozepoor District along the line of levels taken past Ramnuggur, Wullur, Mojgurh, Trehara, Dilawur to Kundairah, also three cross-sections of the State, *viz.*, one from the river Sutlej through the Great Trigonometrical Survey bench mark at Golam Allee and the arain Great Trigonometrical Survey to Wullur; second, by one from the river Sutlej at Bhawulpoor in a South-Easterly direction through Mojgurh to the confines of the State, and a third from the River Indus near Shahpoor Great Trigonometrical Survey nearly due South to Kundairah.

Sheet of levels of the *Bangur* and desert land of the Bhawulpoor State forwarded.

2. On this plan there will be observed a ridge of low sand hills more or less parallel to the rivers which border the State, and the land on the North side of that ridge is what is called Khadir, being the recent alluvion of those rivers; its average breadth may be assumed as 10 miles and both in the directions of its length, *viz.*, from North-East to South-West, and in the direction of its breadth, *viz.*, at right angles thereto, its slope is from 12 to 13 inches per mile; and although it is within this Khadir that all irrigation is at present for the most part confined, we are gradually extending some of our present canals into the adjoining *bangur* which I will now describe.

The recent alluvion of the rivers bordering the State called Khadir—its description.

3. The *Bangur* forms a second or intermediate strip of land running the whole length of the State parallel to the Khadir from which, on its Northern side, it is separated by the ridge of low sand hills before referred to, and on its Southern side a depression, known as the Hukra or Wahund, separates the *Bangur* from the great desert, a portion of which, as shown on the plan, lies within the Southern boundary of the Bhawulpoor State.

4. This *Bangur* tract covers an area of about 9,000 square miles, large portions of which are covered by sand drift from the adjoining desert; but, on a rough calculation, I consider that about half or, say, 4,500 square miles of first class land is fit for the plough, if water for irrigating it were available. A reference to the sections forwarded will show that at the upper end of the State the highest part of the *Bangur* land is 31 feet above the Sutlej and that at Bhawulpoor it is about 16 feet, and therefore how costly it would be to lead the Sutlej water into any part of the *Bangur* between those points; below Bhawulpoor the difference of level between the two lessens considerably, so much so, indeed, that at a point 36 miles from Bhawulpoor we can command the highest ground to be found; and the line of a new canal past Dairee to Dilawur Fortress, as shown on the plan, has been laid out this season and is now being lock spitted; but should Colonel Anderson's projected dam across the Sutlej near Ferozepore be constructed and a channel be brought down on the left bank from it, we could command every acre of this *Bangur* land for perennial high level irrigation, as far as water could be spared for the same.

High land parallel to the Khadir called *Bangur*—its description.

Aided by a channel from Colonel Anderson's projected dam at Ferozepoor, every acre of the *bangur* land could be irrigated at a high level.

5. Both the soil and the sub-soil of this intermediate tract differ considerably from that of the Khadir; for, whereas the latter consists of alternate layers of clays and silt, in the *Bangur* land the deposit is homogeneous, consisting wholly of clay with an admixture of sand such as is now drifted up from the adjoining desert and is similar throughout from the ground surface to the spring water level; this latter varies in depth from 43 feet at Dilawur where the nearest part of the river is 38 miles distant to 120 feet at Ramnuggur in Bikaneer, where the river is 30 miles distant, the two stations being 180 miles apart, between which the slope of country averages 15 inches per mile, and that of sub-soil water 11 inches per mile; the slope between zero level of the nearest part of the Sutlej and the spring water at Ramnuggur being at the rate of 38 inches per mile, and between the nearest part of the Sutlej to Dilawur being 17½ inches per mile.

Description of the *bangur* land continued.

6. The water met with in the wells within this tract seems to differ but slightly from the water in the Khadir lands, as long as water is being continually drawn from them; but, when allowed to stagnate, it becomes more or less saline. The stratum in which water is tapped is a light bluish silt identical with that found in the present bed of the Sutlej; and although there is an obscure tradition that, at some former period, the Sutlej River flowed through this tract and that,

Water in the wells of the *Bangur* sluice when allowed to stagnate.

even as late as Alexander's invasion of the Punjab, I am rather inclined to consider that the alluvion of the *bangur* was deposited from the waters of the Ghuggur River whose natural exit towards the sea through Sind (where it is known as Hukra and Narra) is in the depression hereinbefore referred to on its passage through this State. It is of course possible that the waters of both these rivers may at one time have mingled together in their downward course; but I do not think it possible, with a volume such as the Sutlej carries, for the main stream of that river to have ever flowed in such a comparatively straight course as the line of depression shows; most probably therefore if ever there was a perennial river there, it meandered through this central tract in the same tortuous manner as other rivers exhibit; and, in such case, further research will probably throw much additional light on the subject. The remains of mounds of brick pottery on the banks of this depression, and which are found also in other parts of the *Bangur*, evidently point back to a time when it must have possessed all the elements necessary for the support of a fair population.

Traditional flow of a perennial river through the *bangur* land.

The Ghuggur River most probably had its exit towards the sea through the Hukra depression.

7. In the present day it is only on occasions of extraordinary rain-fall in the country East and North-East of Bhutneer that any water flows in the depression before referred to, and from its casual nature it would not be sufficiently remunerative to incur any outlay for utilizing it, whilst we have so many calls for expenditure on more productive works within the more thickly populated parts of the State.

The flow of water through the Hukra is too casual to make it worth while to expend capital for utilizing it.

8. South of the *Bangur*, as I have said before, and separated from it by the Hukra or Wahind depression, is a portion of the great sandy desert. Its surface for the most part consists of a succession of undulating sand ridges 40 to 60 feet high, with a vegetation peculiar to sandy tracts; but here there is no soil-down to the lowest depths yet penetrated by wells: all is sand, and bitter water is met with at a depth of 80 feet below the surface. In the valley intervening between the sand ridges, overlying the sand in some of the valleys, as at Ghospoor, Rookunpoor, and Khangurh is found a deposit three to six feet thick of sulphate of lime, which from the absence of any regular crystallization, presents the appearance of having been rapidly desiccated from a concentrated solution; the water in the wells where this gypsum predominates is found in a thin stratum of needles of gypsum, and as these wells are sunk through a stratum of fine sand, the sides are supported by a steining of the lime plaster two or three inches thick, which is added as the excavation proceeds; the wells are seldom more than three or four feet in diameter, and, even with the precaution of steining, the excavation of these wells appears to be looked on as a perilous adventure.

The most Southerly division of the State is a portion of the great sandy desert.

Gypsum beds found at Ghospoor, Rookunpore and Khangurh.

9. **At your suggestion I have subjoined to this a translation of an interesting report on the *Bangur* and desert lands of the State by Syud Morad Shah, Assistant Superintendent.**

10. **I cannot close this report without bringing to your favorable notice the creditable manner in which Lalla Keddar Nath, Supervisor, and the party under him carried out this work at a time when famine increased the difficulties ordinarily met with, and my best acknowledgments are due to Syud Morad Shah for the satisfactory manner in which the party were kept supplied with forage, water, and the necessaries of life during the period the survey lasted**

Memorandum by LIEUTENANT-COLONEL J. CROFTON, *Chief Engineer, Irrigation Works, Punjab on Culturable Land in Bhawulpoor.*

THE Government of India in No. 347 I, dated 28th September 1869, from the Secretary, Public Works Department, called for information on arable land in the so-called desert in Bhawulpoor Territory.

It is submitted with Major Minchin's No. 38, dated 11th May 1870.

From these papers it appears, that the State of Bhawulpoor is divided into three well-defined portions, differing in appearance and nature of soil.

1*st*.—The Khadir or present Valley bordering the Sutlej.
2*nd*.—Bangur or high land.
3*rd*.—Desert.

The Khadir is bounded on the land side by a ridge of low sand hills, which also forms the edge of the high or Bangur land. The latter is bounded on the south or desert side by a deserted nullah, locally known as the Hukra or Wahmul, which, from the old part of Wullur downwards, is evidently the continuation of the old bed of the Cuggur which was traced down to this point, many years ago, by Colonel John Colvin, then Superintendent of the Western Jumna Canal.

The Khadir land is irrigable from ordinary inundation canals which are being extended as rapidly as the available men and means will admit of.

The Bangur land estimated by Mr. Barns, Superintendent of Irrigation in Bhawulpoor, to cover an area of 9,000 square miles, is about half covered with sand drift; the remainder or about 4,500 square miles, on a rough calculation, is stated to be culturable if artificial irrigation could be supplied to it. From the ordinary inundation canals, however, water can only be economically delivered on this tract in the lower portion, from a point about 36 miles below the city of Bhawulpoor downwards, where the average width does not exceed 10 or 12 miles. This is owing to the elevation of the tract above the Khadir, which at the North-East boundary of the State is upwards of 30 feet, gradually decreasing until at a point some distance below that indicated above. The land on either side of the sand ridge is on the same level.

A cross-section (given on the tracing near the South-West boundary of the State, shows a continuous fall from the river to the old bed of the Cuggur or boundary of the "dèsert." The main stream of the Indus probably ran in the old bed at this point at some former period of its history.

For the irrigation of the upper and by far the larger portion of the Bangur channels from the proposed dam across the Sutlej near Ferozepoor (now being worked out) or, perhaps, the branches of the Sirhind Canal are probably the only available sources of economical supply. This, however, cannot be decided until the project above alluded to is completely elaborated. A section (sent up with this report) from the Sutlej at a point about 25 miles below Ferozepoor down the old bed alluded to as the Hukra, which appears to be at present silted up nearly to the level of the adjacent lands, show that a channel on this course, carried at a declivity of half a foot in a mile, and taking its supply at the head, at the level of water in the Sutlej on the 23rd May 1869, would not deliver the water on the surface of the Bangur, at a less distance than 60 miles from the head.

Major Minchin expresses his apprehensions of the results of the construction of the Sirhind Canal, and the channels from the dam at Ferozepoor on the volume of the river where the Bhawulpoor inundation canals are taken off, and mentions that he has heard that the level of water in wells along the Ravee has subsided since the opening of the Baree Doab Canal. I have never heard of this myself, but will have enquiries made. In a very dry year such as 1868-69, the level of the springs in lands adjoining the rivers was affected, but that was owing apparently more to the general desiccation of the country than to the exceptionally low state of the rivers.

In order to give reliable proof hereafter of the effect (if any) of the works mentioned on the volume of the Sutlej, I would suggest that the Superintendent of Irrigation in Bhawulpoor, be directed to measure the discharge of the river near the North-East boundary of the State, annually, at the usual periods of opening and closing the inundation canals, or at the commencement and termination of the period during which irrigation is required to bring the crops to maturity, say on the 15th April and 15th or 20th September.

This is now annually done at the heads of the permanent canals, in order to obtain data for the calculation of the supply available for a Khureef crop in ordinary years.

The report is, I think, very creditable to Mr. Barns; the map will show that Major Minchin and his subordinates are losing no time in developing the irrigation in the State, so far as their means will allow; and increase of water supply in these tracts, means increase of cultivation and population as well as development of trade.

From COLONEL J. ANDERSON, R.E., Officiating Deputy Secretary to the Government of India, to the Joint Secretary to the Government of the Punjab, in the Public Works Department, Irrigation Branch,—No. 344 I, dated Simla, the 19th August 1870.

IN reply to your letter No. 2453I, dated the 1st ultimo, I am directed to request that the thanks of His Excellency the Governor General may be communicated to Mr. Barns, for his highly interesting and valuable report on the desert of Bhawulpoor.

2. The Punjab Government, it appears, have arranged to have the discharge of the Sutlej measured annually at the North-East boundary of the State, with the view of ascertaining the effect of the withdrawal of a large body of water for the Sirhind Canal and proposed additional canal from this river near Ferozepoor. I am to suggest that measures may also be taken to register the surface levels of the river. It does not follow that any great lowering of the surface would be produced by the abstraction of the greater part of the cold weather supply, and at all events since a rise in the floods of 6 or 8 feet only above the cold weather level has the effect, it is believed, of increasing the volume of water 30 or 40 fold, any possible reduction of the volume is unlikely to lower the surface to such an extent as to produce any injurious influence on the wells in the low lands adjacent to the river.

3. Of course, if the project for a dam across the Sutlej near Ferozepoor is recommended for sanction, care will have to be taken that proper provision for the requirements of the Bhawulpoor State should also be made, or, at least, that existing interests in that State will not be liable to sustain injury.

4. In compliance with paragraph 4 of your letter, I enclose 35 printed copies of Mr. Barn's report and other papers on the subject. An equal number of copies of the map will be furnished hereafter. The sheet of levels is herewith returned.

No. 34 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, SEPTEMBER 3, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

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GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

TRADE BETWEEN INDIA AND THE GULFS OF PERSIA AND OMAN.

From LIEUT.-COLONEL LEWIS PELLY, C.S.I., Her Britannic Majesty's Political Resident in the Persian Gulf, to the Secretary to the Government of Bombay, Political Department,—No. 265—81, dated Muscat, the 10th July 1870.

Dated, I think, 23rd April 1870. But my records not being with me, I quote from memory.

* *Vide* Supplement to the *Gazette of India* dated 20th August 1870, pp. 1049 to 1073.

IN supplement of my recent report* on the trade of the Persian Gulf, I have now the honor to submit a few facts indicative of the development of the steam-borne portion of that trade.

1*stly*.—A few weeks ago the first steamer arrived direct from England, *vid* the Suez Canal.

2*ndly*.—The first of an intended line of steamers between Constantinople and the Gulf arrived. On this subject, the Political Agent, Muscat, writes as follows:—"The Turkish merchant steamer *Babylon* arrived here from Aden on the evening of the 27th (May) ultimo, and left for the Persian Gulf the next morning. This vessel is, I understand, the first of a line of steamers to run regularly between Constantinople and Bussora, and call at the intermediate ports of Jeddah, Aden, Muscat, Bunder Abbass, and Bushire."

3*rdly*.—Two or more steamers have run with corn and dates for Jeddah.

4*thly*.—Two Persian Companies have commenced running between the Gulf and British India. These vessels run under the British flag.

5*thly*.—I understand that the British India Steam Navigation Company have it in contemplation to run a weekly steamer between British India and the Gulf.

6*thly*.—The first of a British line of steamers to run between London and the Gulf, *vid* the Suez Canal, is expected at Bushire about three months hence.

7*thly*.—A steam trade in dates, corn, and dried-fish with Mauritius and Batavia is spoken of.

2. As yet all the steamers appear to have found full cargoes at rates which, although lower than those which obtained in former years, still pay.

3. It is remarkable that the Native merchants, inclusive of those now largely interested in steamers, have from the commencement of steam communication, eight years ago, consistently urged the inconvenience and injury that would result to the Gulf trade from the substitution of steamers for Native craft.

4. The fact seems to be that the Gulf trade is capable of indefinite development, provided freights be sufficiently low to admit of produce competing with that of other countries in foreign markets; in other words, the Gulf being the only ocean basin for a vast range of territories, the resources of those territories will increasingly seek the ports of the Gulf, provided they can be exported at a profit.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

No. A.—KHURREEF STATEMENT.

IRRIGATION OPERATIONS OF FUSL KHURREEF, 1869-70.

Comparative Statement of Irrigation and Rain-fall in Canal Districts of the North-Western Provinces.

ZILLAH.	Area, in Acres.	Cultivated Acres.	AREAS IRRIGATED.		1869-70 OVER 1868-69.		RAIN-FALL FOR KHURREEF MONTHS.													
							April.		May.		June.		July.		August.		September.		October.		TOTAL.	
			Khurreef, 1868-69.	Khurreef, 1869-70.	Increase.	Decrease.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.	1869.	1868.
1.	2.	3.	4.	5.	6.	7.	8.		9.		10.		11.		12.		13.		14.		15.	
Saharunpore ...	1,425,825	1,001,518	49,242	58,454	9,212	.....	...	1·4	...	1·1	2·0	4·2	7·3	8·1	3·0	1·4	4·6	0·3	...	...	16·9	16·5
Moozuffernuggur.	1,054,065	703,549	63,388	74,127	10,739	.....	...	0·6	...	0·1	0·5	1·4	9·0	9·1	13·8	0·5	4·1	0·4	0·4	...	27·8	12·1
Meerut ...	1,511,661	1,082,196	106,912	113,037	6,125	.....	...	1·0	...	0·9	...	1·0	6·6	9·7	2·6	0·4	6·0	...	1·2	...	16·4	13·0
Boolundshuhur ...	1,821,373	823,004	45,643	64,390	18,747	.....	...	1·4	...	1·0	...	1·5	5·8	6·6	4·6	0·2	6·6	1·2	2·3	..	19·3	11·9
Allygurh ...	1,190,118	932,640	46,232	55,989	9,757	.....	...	0·4	...	1·8	...	0·7	4·7	4·6	6·2	0·3	5·8	0·5	5·8	...	22·5	8·3
Muttra ...	1,032,021	831,124	8,669	7,689	.....	980	...	0·1	...	0·2	0·5	2·6	5·1	7·6	7·1	0·8	5·1	1·0	1·0	...	18·8	12·3
Agra ...	1,199,037	886,774	812	587	.....	225	...	0·1	...	0·5	0·1	3·1	5·1	12·8	3·0	2·0	13·4	0·3	4·1	...	25·7	18·8
Etah ...	898,838	585,330	12,285	12,041	.....	244	...	0·4	...	0·8	0·1	1·3	6·0	5·6	3·1	1·5	8·0	0·5	7·3	...	24·5	10·1
Mynpoorie ...	1,066,534	576,615	31,979	17,583	.....	14,396	...	0·4	0·6	1·1	0·1	0·4	10·5	6·1	8·7	1·2	10·8	2·7	1·7	...	32·4	11·9
Futtehgurh ...	1,084,399	674,034	14,296	11,102	.....	3,194	...	0·3	...	0·7	0·3	0·4	11·9	3·6	5·0	3·5	10·4	6·0	4·0	...	31·6	14·5
Etawah ...	1,044,123	572,221	33,082	16,847	.....	16,235	...	...	0·2	1·3	0·6	0·6	14·0	6·7	6·8	0·6	7·2	6·3	7·9	...	36·7	15·5
Cawnpore ...	1,514,343	855,663	33,866	28,420	.....	5,446	...	...	...	0·6	...	1·5	15·1	2·7	2·8	1·0	11·8	4·6	4·3	...	34·0	10·4
Dehra Doon ...	653,271	86,657	4,145	4,246	101	.....	...	0·6	...	0·7	3·6	0·8	21·7	16·9	19·4	11·3	22·8	4·7	2·6	0·1	70·1	35·1
Bijnour ...	1,204,659	685,026	272	1,057	785	.....	...	1·3	...	0·2	0·6	3·7	3·9	15·1	4·2	0·5	16·0	0·5	3·0	...	27·7	21·3
Terai ...	469,760	91,735	3,622	2,986	.....	636	...	1·5	...	0·4	2·6	8·0	7·7	12·5	15·8	3·4	13·4	4·9	4·1	0·9	43·6	31·6
Bareilly ...	1,518,579	1,084,290	29,319	31,646	2,327	.....	...	0·3	...	2·1	0·8	7·2	10·1	10·3	6·7	0·8	18·1	4·1	3·3	...	39·0	24·8
Jhansie ...	1,029,295	504,575	102	15	.....	87	...	0·6	...	...	...	1·8	31·1	8·2	7·9	0·2	9·3	2·1	3·6	...	51·9	12·9
Humeerpore ...	1,464,641	783,987	332	197	.....	135	...	0·2	...	...	1·5	1·0	9·5	6·6	4·0	0·7	17·2	7·7	6 0	...	38·2	16·2
TOTAL ...	20,582,542	12,760,938	484,198	500,413	57,793	41,578	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

No. B 1.—KHURREEF STATEMENT.

Statement in Acres of Crops irrigated by Canals in Zillahs.

DESCRIPTION OF CROPS.	Saharunpore.	Moozuffernuggur.	Meerut.	Boolundshuhur.	Allygurh.	Muttra.	Agra.	Etah.	Mynpoorie.	Futtehgurh.	Etawah.	Cawnpore.	Dehra Doon.	Bijnour.	Terai.	Bareilly.	Jhansie.	Humeerpore.	TOTAL.	GRAND TOTAL.
(1) Gardens and Orchards	856	881	1,652	965	680	307	11	189	401	198	574	681	215	...	4	136	...	...	7,750	7,750
(2) Sugarcane ...	10,686	21,131	40,376	4,317	147	57	5	194	3,762	3,316	4,995	6,131	575	383	345	7,779	...	194	104,393	104,393
(3) Cereal Grains—																				
(*a*) Rice	37,648	32,761	14,572	372	2	...	...	.....	1,185	.....	833	651	2,536	672	2,636	23,040	10	...	116,918	
(*b*) Bajra and Jowar...	722	1,471	7,104	4,662	4,092	364	12	619	346	.....	567	354	...	...	...	86	...	...	20,399	
(*c*) Other Grains ...	3,833	5,804	17,303	7,615	2,921	461	32	1,159	3,056	620	2,361	1,284	780	2	...	505	5	1	47,742	185,059
(4) Pulses	213	1,199	169	60	2	...	...	.....	.....	3	3	5	1	...	...	18	...	1	1,674	1,674
(5) Fodder Crops ...	1,007	2,536	6,548	1,771	197	14	...	.....	.....	.....	.....	.....	...	...	...	.....	...	...	12,073	12,073
(6) Fibres—																				
(*a*) Cotton ...	2,104	6,813	19,618	13,092	9,163	1,685	54	1,940	1,580	.....	188	45	...	...	...	36	...	...	56,318	
(*b*) Other Fibres ...	10	49	12	7	2	1	...	.....	478	14	33	11	4	...	...	10	...	...	631	56,949
(7) Dyes—																				
(*a*) Indigo ...	541	1,231	5,518	31,468	38,760	4,793	471	7,933	6,748	6,786	7,286	19,145	...	...	...	.....	...	...	130,680	
(*b*) Other Dyes ...	5	.....	.....	.....	.....	...	...	.....	1	1	.....	2	...	...	...	.....	...	...	9	130,689
(8) Drugs—																				
(*a*) Opium ...	.....	.....	.....	.....	.....	...	...	.....	.....	.....	.....	.....	...	...	...	.....	...	...	.....	
(*b*) Other Drugs ...	58	12	11	2	23	7	2	7	10	1	4	.....	135	...	1	4	...	...	277	277
(9) Oilseeds	.....	.....	.....	.....	.....	...	...	.....	.....	.....	.....	.....	...	...	...	2	...	...	2	2
(10) Miscellaneous ...	770	240	154	59	.....	...	...	.....	16	163	3	111	...	...	...	30	...	...	1,546	1,546
TOTAL 1869-70 ...	58,453	74,128	113,037	64,390	55,989	7,689	587	12,041	17,583	11,102	16,847	28,420	4,246	1,057	2,986	31,646	15	196	.....	500,412
TOTAL 1868-69 ...	49,242	63,388	106,912	45,643	46,232	8,669	812	12,285	31,979	14,296	33,082	33,866	4,145	272	3,622	29,319	103	332	.....	484,198

NOTE.—The Ganges Canal full supply is 5,387 cubic feet per second. During the khurreef its mean supply while running was 3,983 cubic feet per second. The Eastern Jumna Canal carries a full supply of 1,300 feet per second. Its average supply while running was 1,242 cubic feet per second.

ALLAHABAD;
The 20th May 1870.

W. G. ROSS, *Lieutenant, R.E.,*
Assistant to Chief Engineer, Irrigation Works, N. W. P.

Resolution by His Honor the Lieutenant-Governor of the North-Western Provinces,—No. 1338 I, dated Allahabad, the 26th July 1870.

READ the following Statements:—

No. A.—Comparative Statement of Irrigation and Rain-fall in Canal Districts, North-Western Provinces.

No. B1.—Statement in Acres of Crops Irrigated by Canals in Zillahs.

OBSERVATIONS.—Statement A. records an increase of 16,299 acres, even on the unprecedented khurreef return of 1868-69.

2. Statement B1. is prepared for the first time by zillahs, which makes the return more generally useful. A large increase is noticeable in sugarcane, cereals, and indigo (dyes). The acreage of rice in 1869-70 is 5,998 more than in previous year: in indigo the increase is 52,700 acres, and in sugarcane 6,840 acres.

3. In miscellaneous the decrease amounts to 51,600 acres, showing that farmers do not at present find it answer to irrigate inferior crops, save in a year of scarcity.

ORDER.—Ordered, that the Statements, with this resolution, be forwarded to the Secretary to the Government of India, Public Works Department, and to the Superintending Engineers of the Department in the North-Western Provinces, for information; and also that they be published in the *Government Gazette* for general information.

By Order, &c.,

W. H. GREATHED, *Colonel, R.E.,*
Joint Secy. to the Govt., N. W. Provinces.

From the Government of India, Public Works Department, to the Joint Secretary to the Government, North-Western Provinces, Public Works Department, Irrigation Branch,—No. 342 I, dated 18th August 1870.

THE Statements of irrigation operations in the North-Western Provinces during Fusl khurreef of 1869-70, and the Resolution of His Honor the Lieutenant-Governor thereon, No. 1338 I, dated the 26th July last, have been laid before His Excellency the Governor General in Council, who directs me to express his high satisfaction at the results obtained.

2. Copies of the Statements will, as usual, be forwarded to Her Majesty's Secretary of State for India for information, and to the Home Department for publication in the *Gazette of India.*

THROUGH RAILWAY COMMUNICATION BETWEEN MADRAS AND BOMBAY.

READ the following letter:—

From the Acting Consulting Engineer for Railways, to the Secretary to the Government, Public Works Department,—No. 298 A., dated Kasapoor, the 20th July 1870.

I have the honor to report that a meeting took place at Raichore on the 18th instant, between the Deputy Chief Engineer, with two Engineers of the Great Indian Peninsula Railway Company, and the Agent and Manager, Chief Engineer, and two Engineers of the Madras Railway Company.

2. The arrangements for the Junction Station were fully discussed and agreed upon, with the exception only of one or two minor points that do not affect the general plan.

3. The Government are aware* that a plan was sent from Madras to the Agent of the Great Indian Peninsula Railway for consideration, and the plan was received back by the time we arrived at Raichore. The Agent of the Madras Railway agrees to modify the plan of the station-yard and booking-office; to change the position of the lamp-room, and improve the lavatory in the latter, and to provide only one well and one 40-feet turn-table, instead of having two wells and turn-tables as at first proposed; a question as to the

* *Vide* G. O. No. 1672, dated 12th July 1870.

number of points is reserved for the opinion of the Traffic Manager at Madras, and another question, regarding the position of the engine turn-table, will be referred to the Locomotive Superintendent. A room for the Post Office has been included in the plan as accepted for the station buildings.

4. The officers of the Great Indian Peninsula Railway wish to build their own engine-shed and the quarters for their drivers, firemen, &c., and they will lay the permanent-way up to the outer points at the Bombay end of the station-yard; otherwise all the buildings for general occupation and joint purposes, as well as all material and labor, will be provided by the officers of the Madras Railway.

5. It is expected on the Bombay side that the line will be completed to the Kistna River by December, and to Raichore by the end of March 1871, while there is little doubt about the line from Madras being finished by that time. Hence as the break in the journey will be at the Kistna River, not at Raichore, temporary accommodation will be provided for travellers at the river.

6. The Agent of the Madras Railway expects to have his plans of the station ready early in next month, and is particularly anxious to have authority to commence the construction of the buildings in anticipation of formal sanction of the estimates. If work is put in hand now, it is possible to advance the buildings to that stage that temporary accommodation will not be necessary when the line can be opened throughout; but, on the other hand, if action is not taken at once in getting in the foundations, additional expense must unavoidably be incurred in providing temporary shelter.

7. A large quantity of stone is already quarried, and 1,300 cubic yards brought to the station ground; the station arrangements have been economically devised, and as, in addition to the saving of expenses, the provision of suitable shelter for drivers and other employés in the intense heat during April and May, is of considerable importance, I would request the sanction of Government for the immediate prosecution of the station works, pending final sanction.

Order thereon No. 1939, dated 18th August 1870.

THE Government are gratified to learn from the letter of the Consulting Engineer printed at the head of these Proceedings, that a satisfactory settlement has been arrived at by the officers of the Madras and Great Indian Peninsula Railways in regard to the general arrangements of the joint station at Raichore, and that there is a prospect of the line being opened for through traffic by the end of March 1871.

2. Looking to the extreme urgency of the case, and having in view the expressed wish of the Government of India that through traffic between Madras and Bombay should be established with the least practicable delay, and moreover that a considerable saving is likely to be effected by having the station works at Raichore advanced to such a state of forwardness on the opening of the line as will admit of shelter being afforded to passengers, who would otherwise have to be provided with temporary accommodation, the Government authorize the immediate commencement of the buildings in anticipation of formal sanction.

3. This course, however, being irregular, Captain Prendergast will take measures for expediting the submission of the requisite plans and estimates which the Government are glad to observe are in active preparation.

CHARLES A. ORR, *Colonel, R.E.,*
Secretary to the Government, Madras.

No. 1940.

COPY of the above forwarded to the Government of India in continuation of docket No. 1397, dated 4th June 1870.

CHARLES A. ORR, *Colonel, R.E.,*
Secretary to the Government, Madras.

READ the following letter:—

From the Acting Consulting Engineer for Railways, to the Secretary to the Government, Public Works Department,—No. 302, dated Madras, the 25th July 1870.

IN continuation of my letter No. 298 A of the 20th instant, regarding the arrangements made with the Great Indian Peninsula Railway Company for the Junction Station at Raichore, I have the honor to report that there is every probability of the north-west line being ready for opening as far as the Toongabudra during the month of September. The distance from Ghooty to the Toongabudra is 88 miles, but it has not been proposed to open the line to Adoni, 60 miles, or any other immediate point, for the works have been less advanced on Districts 15 and 16 to the south of Adoni than on the more favorable country further on.

2. I was able to travel by contractor's material train on the 16th instant from Ghooty to the river. The line is in very good order as far as Goondacul,—the branch station for the Bellary diversion,—the ballasting and fencing being completed. As far as Nuncherla there is but little required, the line is well ballasted, but the wire fencing remains to be put up. On the next two Districts up to Adoni, there is nothing but cotton soil, and the heavy rains in the past few weeks have retarded progress; a good deal of ballasting has to be done here and there, and the side slopes require bringing to section. To the north of Adoni the road is again in fair order, though ballasting is not yet completed.

3. The following is the condition of the stations:—

Goondacul.—The double platform is complete and roofed in; the booking-office and adjoining buildings are completed; the walls of the goods-shed are finished, and the roof trusses put up.

Nuncherla.—The platform wall is built, and the walls of the booking-office raised full height; the roofing just begun.

Auspree.—Platform wall built; the walls of the booking-office are raised to the level of the top of the door and window frames; the walls of the goods-shed are nearly completed.

Adoni.—The offices are completed, and have a very good appearance; the roof is being put on the goods-shed.

Kosgee.—Booking-office very nearly finished; goods-shed walls built, and the roof being laid on. The masonry works are all completed, with the exception of coping; there is one temporary bridge near Kosgee, but otherwise all the bridges as far as the Toongabudra are now ready to bear traffic.

4. To the north of the river the works are more backward; no portion of the permanent-way is laid, and a good deal of the masonry remains to be done. This, however, is expected to be completed by the end of the calendar year. At the Mutmurri Station a large quantity of stone has been brought to site. On the banks of the Toongabudra the girders are being set up and rivetted; the masonry of the large bridge is quite complete and ready for the girders.

Order thereon No. 1941, dated 15th August 1870.

ORDERED, that this letter be forwarded to the Government of India.

CHARLES A. ORR, *Colonel, R.E.*,
Secretary to the Government, Madras.

No. 1942.

COPY of the above forwarded to the Government of India in continuation of docket No. 1940, dated 15th August 1870.

CHARLES A. ORR, *Colonel, R.E.*,
Secretary to the Government, Madras.

GOVERNMENT OF INDIA.

FINANCIAL DEPARTMENT.

APPLICATION FROM BENGAL CHAMBER OF COMMERCE FOR THE REDUCTION OF THE RATE OF INCOME TAX.

From H. W. I. WOOD, ESQ., Secretary, Bengal Chamber of Commerce, to the Officiating Secretary to the Government of India, Financial Department,—dated Calcutta, the 10th August 1870.

I AM directed by the Committee of the Bengal Chamber of Commerce to forward the following remarks on the subject of the existing rate of income tax, with the request that you will be good enough to submit them for the consideration of His Excellency the Governor General in Council.

2. I may mention in the outset that, although the Committee of this Chamber did not send up any remonstrance to Government at the time the Act for increasing the income tax was passed, their silence was due, not to approval of the measure, but rather to the belief that the Members of the Chamber unanimously sympathised with, and shared in, the more extensive expression of opinion which was then so unmistakeably pronounced by the community in general. The Committee are, however, of opinion that the time has now arrived when they may, with advantage, make this important question the subject of special representation to the Government of India.

3. When submitting to the Legislative Council the usual statement of ways and means for the current financial year, Sir Richard Temple explicitly and emphatically asserted that this new measure of taxation was forced upon the executive by sheer necessity as an only means of relief from grave financial embarrassment. He declared that without this further increase, *i. e.*, if he retained the impost at the figure fixed in November last, or two per cent., the present year was estimated to close with a considerable deficit, which the raising of the duty to six pies in the Rupee converted into a probable surplus of £163,440. This estimate was founded, according to Sir Richard Temple's Statement, on the assumption that the previous financial year, 1869-70, would close with a large deficiency; but it now appears that a much more prosperous state of affairs actually exists, and that, instead of having to meet a deficit, Government will be in receipt of a surplus from that year.

4. The Committee are aware that they cannot, in support of this statement yet point to any authoritative document from the Government of India, but they believe the same to be substantially correct; and they have observed, with much satisfaction that the Secretary of State, in his recent statement to Parliament, announced the probability of the year in question ending thus favorably.

5. The Committee cannot doubt that a result so happy and unexpected is due, in large measure, to the vigorous policy of retrenchment so properly set in motion in September last, the effects of which, it is not unreasonable to assume, will tell even more strikingly upon the finance of the year now current, leading up to the belief that the expenditure for same under various heads will eventually fall considerably under the amount estimated for in the Budget.

6. In one very important item of revenue, *viz.*, opium, it appears likely that the receipts will prove largely in excess of the figure at which they were put down in the Budget Estimate; nearly half of the current financial year has now expired, and the drug still stands in the market at a figure which, with all deference, the Committee submit, justifies the Government in assuming a considerable further credit under this head.

7. In the abundant rains with which the country generally seems lately to have been favored, giving promise of a plentiful autumn harvest, the Commitee would also recognise another source of hope for the current financial year. The records

of the past few years show, unfortunately only too often, how material have been the calls made on the Government of India when the reverse has been the case,—calls entailing not only much extra expenditure, but, in addition, loss of revenue to a greater or less extent;—and the Committee are encouraged to hope that, should the promise of the present season be realised, and scarcity disappear, Government may find itself in the happy position of being called upon to spend less and receive more than was anticipated.

8. The above and other considerations, on which the Committee need not dwell, lead directly, in their judgment, to the question whether, in connection with the existing rate of income tax, Government can longer maintain the plea of absolute necessity? Whether circumstances any longer justify the retention of what is really a war tax?

9. With the information at present before them, the Committee venture to think that neither of these questions can be answered in the affirmative: they, on the contrary, consider themselves warranted in believing that a state of things which either did exist or at least was supposed to exist, has now passed away; and they would respectfully but earnestly express their hope that the subject of this communication may receive the early and favorable consideration of His Excellency the Governor General in Council, with a view to some substantial reduction in the rate at which income tax shall be leviable for the half year commencing on 1st October next.

10. Such a reduction appears to the Committee not only matter of bare justice but attended, also, with other most important considerations. It is well known that two additions to the income tax within less than a year have given rise to wide-spread feelings of irritation and distrust among the masses of the people,—feelings hardly perhaps suggestive of actual political danger, but still such as it is most desirable to modify and subdue. As already mentioned, the Government of India, when imposing the latter and heavier of these additions, stated plainly that it did so with extreme reluctance as a dire necessity, and the Committee are of opinion that nothing would more tend to soothe the feelings already indicated, nothing be more likely to impress upon the people the justice and good faith of the Supreme Government than the voluntary relinquishment of part of what was so reluctantly taken in the hour of need.

From R. B. CHAPMAN, ESQ., Officiating Secretary to the Government of India, Financial Department, to the Secretary to the Bengal Chamber of Commerce,—No. 3263, dated the 3rd September 1870.

I AM directed to acknowledge the receipt of your letter dated the 10th of August, submitting remarks upon the financial circumstances of the country, with the prayer of the Bengal Chamber of Commerce that the rate of the Income Tax may be substantially reduced for the half year beginning on the 1st October next.

It is a matter of satisfaction that this temperate and clear representation affords an opportunity of explanation on certain points regarding which misapprehension appears to exist.

2. In September last year, decisive steps were taken to remedy a financial condition which was most unsatisfactory, and the course then adopted, appears to have commanded general approval. The measures of the present year were a necessary complement to those of the preceding autumn. It is true that the high rate of Income Tax imposed by Act XVI. of 1870 was forced upon the Government as a means of relief from grave financial embarrassment. It is also true that, in explaining the emergency, the Hon'ble Sir Richard Temple alluded to the "actual deficits which have occurred in past years," and to the apprehension that, despite all the exertions that had been made, the year 1869-70 would "close with a substantial deficit instead of the equilibrium that was expected." The series

of deficits which had occurred, were a cogent additional reason for precaution against any fresh failure of resources. But the deficit of 1869-70 then anticipated, had no direct connection with the estimates for 1870-71, the duty of finding sufficient ways and means for which year would have been quite as clear if it had been known that the accounts of 1869-70 had closed favorably.

3. It is necessary to provide that the ways and means shall fully suffice for the services of each year. If, as has too often been the case in India, it turns out, that the expenditure exceeds the income, the result is fraught more or less, with embarrassment; but it has never been suggested that the country should be taxed in any subsequent year to supply the deficiency. It can hardly be seriously argued, nor, it is observed, does the Chamber of Commerce allege, that, when there is a contrary result, and income exceeds expenditue, the Government ought deliberately to remit taxation in order to bring about a counterbalancing deficit in some later year. Still less can it be contended that because equilibrium has resulted when deficit was expected, the State should purposely allow the income of any later year to fall below its expenditure.

4. The circumstances of each year are considered, beforehand, independently of the out-turn of the accounts of any preceding year, with the sole object of providing sufficient means for current requirements. The arrangements for 1870-71 were made precisely on this principle. The unfortunate "necessity," so "explicitly and emphatically asserted," for the imposition of the present high rate of Income Tax, was the necessity of 1870-71, not of any other year. An argument in support of vigorous measures was naturally drawn from the recent adverse annual balance sheets; but it was the deficiency in the ways and means of 1870-71 alone that justified the fresh taxation imposed.

5. The approximate accounts of 1869-70 this day published are indeed, more satisfactory than was supposed in April last. But without the measures taken in September 1869, there must have been a deficit in 1869-70 of about $1\frac{1}{2}$ million sterling; and, moreover, if equilibrium has been attained, that is due, not to those extraordinary measures alone, but also in part to an excess of credit over debit adjustments, which cannot be again expected.

6. The effect of the retrenchments begun in September last was taken into account in framing the estimates of the present year, and the hopes entertained by the Chamber of Commerce that those measures will tell more favorably upon the finances of 1870-71 than was anticipated, and that the expenditure will be less than the amount estimated, are not likely to be realised. Attention is constantly given to the diminution of expenditure: but measures of reduction, to be efficient and safe, must be, to a certain extent, gradual.

7. The actual accounts of 1869-70, as approximately ascertained, do not support the inference that the estimates of 1870-71 are too unfavorable; nor are any better indications to be found in the experience of the present year hitherto. There is, indeed, promise of a prosperous harvest and of a larger revenue from opium than was anticipated; but, on the other hand, owing to the war in Europe and other causes, there may probably be some failure of revenue and some expenditure in excess of grant. Upon the whole, the general prospects of the year are by no means improved since the financial statement was made.

8. The Chamber of Commerce doubtless admits that the Government was bound to take measures to secure the country against the evil consequences of a deficit in time of peace. While nothing but imperative necessity would have justified the increase of taxation last April, it is right to state that the necessity for what was done is more evident now than it was then. Any sacrifice, therefore, of the resources then provided for the service of the year could only end in serious embarrassment.

9. At the same time, the objections that have been made in many quarters to the present rate of the Income Tax, are not regarded with indifference; though

a very much larger portion of the people bore a similar burden, some years ago, without serious discontent, and a tax to which incomes of less than Rs. 500 a year are not liable, and which is paid by only about one in every three hundred* of the population, can hardly be said to affect "the masses of the people."

* *Note.*—About 477,000 persons not in the service of the State were assessed to Income Tax last year.

10. In the discussion which took place in the Legislative Council on the 5th April 1870, Sir Henry Durand stated the case well when he said, "that as a pure necessity he supported the measure," and that "considering the circumstances and difficulties which surround the Financial Member in this instance, and also bearing in mind how very moderate is the amount which he calculates on as a surplus, how he has limited the taxation which he imposes, which is barely enough to cover the deficit, the anxiety which he has evinced not to impose more than what is absolutely necessary is beyond dispute."

11. A high Income Tax in time of peace is, under ordinary circumstances, undesirable. It is a resource which should be kept in reserve, to be used only in periods of political or fiscal emergency. Act XVI. of 1870 will cease to be in force on the 31st of March, and unless some unforeseen emergency occurs it is not the intention of the Government of India to renew, next year, the present rate of Income Tax. Measures for providing otherwise the needful ways and means for the service of the State are under consideration, and will be communicated to the public as soon as they are sufficiently matured.

GOVERNMENT OF INDIA.

LEGISLATIVE DEPARTMENT.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Tuesday, the 30th August 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K.P., G.C.S.I., *Presiding.*
His Excellency the Commander-in-Chief, G.C.B., G.C.S.I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K.C.S.I.
The Hon'ble J. Fitzjames Stephen, Q.C.
The Hon'ble B. H. Ellis.
Major-General the Hon'ble H. W. Norman, C.B.
The Hon'ble F. R. Cockerell.
His Highness the Hon'ble Sarámade Rájáhae Hindustán Ráj Rájendra Srí Maháráját Dhiráj Sivái Rám Singh Bahádur of Jaypúr, G.C.S.I.

OUDH TALUQDARS' RELIEF BILL.

The Hon'ble MR. STRACHEY asked leave to postpone his motions relating to the Bill to relieve from incumbrances the estates of taluqdárs in Oudh.

Leave was granted.

PENAL CODE AMENDMENT BILL.

The Hon'ble MR. STEPHEN presented the Report of the Select Committee on the Bill to amend the Indian Penal Code.

COINAGE AND MINT BILL.

The Hon'ble MR. STEPHEN presented the Report of the Select Committee on the Bill to consolidate and amend the law relating to Coinage and the Mint.

EUROPEAN BRITISH SUBJECTS' BILL.

The Hon'ble MR. STEPHEN moved that the Report of the Select Committee on the Bill to confirm certain laws affecting European British subjects be taken into consideration. He said that he need not return to the general question involved in the Bill, but some remarks had been made on it which appeared to require notice. It was said that the Bill was defective in so far as it did not confirm the future Acts of the local legislatures. But the answer to this was, that under the Indian Councils' Act the Governor General in Council had no power to do so. The Government of India would address the Secretary of State with a view to the introduction into Parliament of a Bill to confer power on the local legislatures to deal with European British offenders.

Another objection raised to the Bill was, that it would prevent the local legislatures from modifying their penal Acts heretofore passed, so far at least as those Acts related to European British subjects. This was perfectly true, but the evil was inevitable, and we had to choose the least of two inconveniences. The Secretary of State would be moved to insert in the Bill, to which MR. STEPHEN had referred, a clause enabling the local legislatures to modify those Acts notwithstanding their having been affected by an Act of the Governor General in Council. Lastly, the Governor of Bombay had objected that the present Bill, in so far as it purported to confirm invalid local legislation, was beyond the power of the Council of the Governor General as limited by the Indian Councils' Act. But this objection, MR. STEPHEN thought, rested on a misapprehension. What the legislature of the Governor General proposed to do on this occasion was simply to adopt certain local Acts as its own; and the Bill did not affect in any way the provisions of the Indian Councils' Act.

The Motion was put and agreed to.

The Hon'ble MR. STEPHEN then moved the following amendments:—

That the following words be added to section one:—

"And as if it expressly referred to European British subjects;"

And that the following sections be inserted after section one of the Bill:—

'2. Unless there be something repugnant in the context, all Acts heretofore or hereafter passed by the Governor General in Council, which confer summary jurisdiction over offences, shall be deemed to apply to European British subjects, although such persons be not expressly referred to therein.'

'3. Act No. XVIII of 1859 *(to amend the law relating to offences declared to be punishable on conviction before a Magistrate)* shall be construed as if, in sections one, two and four, after the word 'heretofore' the words 'or hereafter' were inserted.'

And that the numbering of the subsequent sections be altered.

These amendments were rendered desirable by a very recent decision of the High Court at Madras, of which information had been received unofficially,

since the Committee had signed their Report, from Mr. Mayne, the learned Secretary to the Legislative Council of the Governor of Madras. The Madras High Court, it seems, had held that even Acts of the Governor General in Council giving summary jurisdiction over offences did not apply to European British subjects, unless such subjects were expressly named therein. Mr. Mayne had also pointed out the anomalous state of things produced by the fact that Act XVIII of 1859 (as to offences made punishable on conviction before a Magistrate) applied only to enactments passed before the 25th of July 1859. The amendments which MR. STEPHEN now proposed would meet the two difficulties thus raised.

The Motion was put and agreed to.

The Hon'ble MR. STEPHEN then said that the adoption of the first of the amendments just carried, rendered necessary two formal amendments: one in the preamble, the other in section one, and he would accordingly move that the following words be inserted in the preamble:—"and whereas doubts have also been raised as to the application to European British subjects of certain Acts of the Governor General in Council:"

and that in section one, line one, after "Act" the following words be inserted:—

> "passed by the Governor of the Presidency of Madras in Council, or by the Governor of the Presidency of Bombay in Council, or by the Lieutenant-Governor of Bengal in Council."

The Motion was put and agreed to.

The Hon'ble MR. STEPHEN then moved that the Bill as amended be passed.

The Hon'ble MR. COCKERELL said that he believed that the words "unless there be something repugnant in the context," which occurred in the first line of the first amendment, excluded its application to the Code of Criminal Procedure. He had himself no doubt as to this being the effect of those words; but he thought it right to draw special attention to the subject, and to appeal to his Hon'ble and learned friend, the Mover of the Bill, for a confirmation of his (MR. COCKERELL'S) impression, inasmuch as if the full effect of these words was overlooked or imperfectly understood, the idea might get abroad that, through the instrumentality of this Bill, a serious alteration of the law was being brought about. That in short by a sort of side-wind, that is to say, in the form of a hurried amendment of a Bill, in the original form of which no alteration had been proposed by the Select Committee, an attempt was being made to render the European British subject liable to be tried and convicted by tribunals to whose jurisdiction he had never been previously subjected, and to which the propriety of his subjection had been so much canvassed in the discussions which preceded past legislation in this matter.

The criminal law of this country was, as the Council knew, now entirely to be found in, first, the Penal Code and the Criminal Procedure Code (by which latter the jurisdiction in respect of offences made punishable under the former was regulated) which were general, and, second, the various Municipal and Police Acts, the enactments regarding offences against the Revenue, and the laws relating to Military Cantonments (some of which had been enacted by this Council and others by the local legislatures), which were all of mere local application.

Now, the punishments to which persons were liable for offences under this last class of enactments, *i. e.*, enactments the operation of which was confined to particular localities, were, with rare exceptions (notably certain sections of the Calcutta Police Act IV of 1866), fines of greater or less amount in the first place, and imprisonment only in default of payment.

The Bill, therefore, in declaring the European British subject equally with other persons liable to summary conviction and punishment under these laws, in no way infringed, or went beyond, the principle of past legislation—such as for example 53 Geo. III., cap. 155, sec. 105, and Act VII of 1853—in this matter.

But if the amendment were to include the Criminal Procedure Code as an 'Act heretofore passed by the Governor General in Council conferring summary jurisdiction over offences,' the case would be very different, and its effect would be to bring about a grave alteration of the law without due notice or consideration.

The Hon'ble MR. STEPHEN said that the only effect of the Bill was to make the law as to European British subjects that which, till lately, every one had supposed it to be. It increased no powers of punishment possessed, or supposed to be possessed, by Magistrates, and it did not confer jurisdiction on any Magistrate who was not a Justice of the Peace. The Code of Criminal Procedure was clearly not affected by the Bill as now amended.

The Motion was put and agreed to.

INSOLVENCY BILL.

The Hon'ble MR. STEPHEN moved for leave to introduce a Bill to amend the law relating to insolvency. He said that the law relating to insolvency, as it stood at present, was contained, as regarded the three Presidency Towns, in an Act of Parliament, 11 & 12 Vic., cap. 21, which had been adapted to the circumstances of the Presidencies from the English laws relating to bankruptcy then in force. As regarded the Mofussil in general there was no law of insolvency; but there was a section in the Code of Civil Procedure which, to a certain extent, answered the same purpose. This was section 271, which provided that 'if after the claim of the person on whose application the property was attached has been satisfied in full from the proceeds of the sale, any surplus remain, such surplus shall be distributed rateably amongst any other persons who, prior to the order for such distribution, may have taken out execution of decrees against the same defendant and not obtained satisfaction thereof: Provided that when any property is sold subject to a mortgage, the mortgagee shall not be entitled to share in any surplus arising from such sale.' In illustration of the objections to the manner in which this section worked as a substitute for a Bankruptcy Act, he might refer to an able pamphlet lately published by Mr. Broughton, the Administrator General of Bengal, upon the state of the law in the Non-Regulation Provinces. Mr. Broughton's remarks were as follows:—

"By that Law the first creditor who gets a decree and takes out execution "is entitled to be paid in full, while the rest come in *pari passu* and divide "what is left. As a natural consequence in places where there is no Insolvent "Law, that is to say, in all India, except the three cities of Calcutta, Madras, "and Bombay, there is no sooner a rumour of a trader being in difficulties than "all his creditors in self-defence rush into Court and contend among themselves "for the first decree against him; his property is attached and sold on the spot, "always at a considerable loss, and the rival claims of different creditors often "produce a contest, sometimes carried out to physical extremities. Perishable "goods are hurried away at the best to improper receptacles, and in most "instances are considerably damaged, while the judgment-debtor, to avoid these "disastrous consequences, finding that his property is unprotected by the Law, "is tempted to resort to all sorts of fraud and chicanery to avoid the conse-"quences of his position. In the early part of the year 1867 this change in "the Law operated in a manner which for the time caused a complete paralysis "in the trade of Rangoon, and flooded the Courts with litigation." There were also provisions as to insolvency in some particular provinces. For instance, the document called the Civil Code of the Panjáb contained such provisions, and others of a similar character contained in what was called Sparks's Code, after

its author, Major Sparks, had been in force in British Burma. The validity of the Panjáb provisions was, as he (MR. STEPHEN) believed, at the present moment under the consideration of the Chief Court of that province, and there would seem to be considerable doubt as to the legal force of many parts of the Code, upon which different decisions had been given by various authorities. The Burmese Code, or at least that part of it which related to the subject of bankruptcy, had been superseded there by the introduction of the Code of Civil Procedure.

The general extension of commerce into various parts of India, and the variety of the provisions which at present obtained upon the subject, suggested the propriety of introducing a general measure. The one which he now asked leave to introduce had been adapted from the Bill passed last year in England, which might be regarded as embodying the result of controversies carried on, and of experience acquired for upwards of three centuries; for the first English Bankruptcy Act was 34 & 35 Henry VIII, cap. 4, passed in the year 1542-43, and the last was passed in 1869. During the interval between these dates, and especially during the last half century, the subject had been almost continually under discussion, and a long series of important changes had been made in the arrangements by which the object of dividing the property of an insolvent amongst his creditors had been attained.

The system finally arrived at, which it was proposed to introduce into British India, had, at all events, the merit of simplicity, and as, he (MR. STEPHEN) thought, of common sense and justice. Its essential provisions might be stated in a very few words, although unfortunately when they were thrown into a legal shape, and when the persons appointed to act under the Bill had been armed by express provisions with all the necessary powers, the result was a measure of somewhat formidable dimensions.

In a few words the system proposed to be established was as follows:—When a man committed any one of a certain number of acts of insolvency and was unable to meet his engagements, he might be adjudicated an insolvent upon a petition by his creditors. His property would upon adjudication pass to a trustee, whose duty it would be to realize it under the inspection, and according to the directions, of a committee of creditors, and to divide it amongst them rateably. If the dividend paid amounted to eight annas in the rupee, or if the creditors were of opinion that the failure to pay so high a dividend arose from circumstances for which the insolvent could not justly be held responsible, and if they desired his discharge to be granted, he could be discharged. If a smaller dividend were paid, the insolvent would have three years in which to make up his payments to the amount in question, and any balance that remained unpaid at the end of that period would constitute a judgment-debt, which might be enforced by leave of the court. English experience seemed to point to the conclusion (after many experiments), that this was a fair compromise between the object of favouring commerce and the object of enforcing a complete execution of the contracts into which a trader might enter.

These were the main provisions of the Bill, but it contained other provisions, which were unavoidably rather long, upon the various points which it was necessary to provide for, in order that the scheme might be properly worked, such as the appointment and powers of trustees, the meetings of creditors, the effects of insolvency upon the property of the insolvent and that of other persons, the distribution of assets and the jurisdiction of the courts. Provisions also were inserted to enable creditors, if they thought fit, to take the matter entirely into their own hands, and to provide, by a process which had been called liquidation by arrangement, for the objects contemplated by the law.

Every effort had been made to render the Bill complete in itself, so that all the law upon the subject might be contained in one measure, and that as little necessity as possible might exist for subsidiary legislation by the courts in the shape of rules of procedure.

The reason for introducing the Bill at Simla was that it might be published as early as possible in the *Gazette*, so that the Government might have the advantage of receiving the opinions and advice of the mercantile community in general, and especially of the three Chambers of Commerce, before the measure was discussed in committee.

There was only one other subject which he (MR. STEPHEN) need mention. He proposed to follow the English example of separating the two questions of the distribution of an insolvent's assets, and the punishment of fraudulent debtors. The latter question would be dealt with separately, and if it were decided to revise the Penal Code, the addition of several provisions upon this subject would form an important part of that process.

The Council then adjourned to the 6th September 1870.

SIMLA;
The 30th August 1870.

WHITLEY STOKES,
Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

No. 35 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, SEPTEMBER 10, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

Non-Subscribers to the GAZETTE *may receive the* SUPPLEMENT *separately on a payment of six Rupees per annum if delivered in Calcutta, or nine Rupees four annas if sent by Post.*

No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

IPECACUANHA PLANTS FOR INDIA.

Revenue.

No. 52.

INDIA OFFICE;

London, the 28th July 1870.

To His Excellency the Right Hon'ble the Governor General of India in Council.

MY LORD,—I have considered in Council the despatch from your Excellency in Council numbered 67 (Public), and dated the 10th ultimo, in which, in reply to my despatch of the 20th of April last, No. 27 of this department, you express your thanks for the steps taken to obtain a supply of ipecacuanha plants, and for the information transmitted.

2. In continuation of this correspondence, I send herewith a copy of a letter* from Dr. Anderson, and its enclosure,† reporting the safe arrival in this country of a considerable supply of plants, and also mentioning the satisfactory condition of the other plants under the care of the officers of the Royal Botanical Gardens at Edinburgh.

* July 13th, 1870.

† From Dr. Christison, July 10th.

3. These papers seem to hold out a well-grounded hope that by the time Dr. Anderson is ready to leave this country to return to India, he will be provided with such a number of healthy plants as will enable him to establish this plant in India, and make that country independent of other countries for the supply of this most valuable medicine.

I have the honor to be,

MY LORD,

Your Lordship's most obedient, humble Servant,

ARGYLL.

Dated Herbarium Royal Gardens, Kew, W., the 13th July 1870.

From—Dr. T. Anderson,

To—The Under Secretary of State for India.

With reference to my letter dated the 28th March 1870, stating the steps I had taken to secure a supply of ipecacuanha plants for transmission to India, I have the honor to report, for the information of His Grace the Secretary of State for India, that the first consignment of plants from Brazil has arrived safely in this country.

These plants (living *Thizomes*) have been sent by Dr. Gunning, of Rio Janeiro, to the Botanic Gardens of Edinburgh. I am not yet in possession of full particulars of this transmission, but some information about them, and also of the plants that have been obtained from the old ipecacuanha plants in the Edinburgh Botanic Gardens, is contained in a letter (copy appended) I recently received from Dr. Christison, Professor of Materia Medica in the University of Edinburgh, to whose kind exertions the Government is indebted for this valuable acquisition of ipecacuanha plants. I hope to be able to examine these plants, as well as the considerable stock in the nursery of Messrs. Lawson and Son, during a visit I shall soon make to Edinburgh, and I shall report the result of my inspection of these plants for the information of His Grace.

Dated Edinburgh, the 10th July 1870.

From—R. Christison, Esq.,

To—Dr. T. Anderson.

I do not know whether Dr. Balfour has informed you, or relied on me to inform you, of the recent arrival of the first consignment of ipecacuanha plants from Dr. Gunning, of Rio Janeiro. But you will be none the worse for this missive, though it should be only a second edition of the news. Both Dr. Balfour and I received at the same time a short letter from Dr. Gunning promising more soon. It seems he finds the constant complaints of pharmaceutic writers to be true that the root collectors have now to go very much further away from the port of exportation in order to practise their calling with success, and that consequently he has to communicate with friends at a great distance to procure specimens. We may obviously, however, rely on his goodwill and determination. I went a few days afterwards to inspect the entire ipecacuanha culture at the Garden. I saw a box of about 50 plants, three or four inches high, the produce of Macnab's cuttings planted early in January last, and another box equally populous of smaller plants of more recent growth, and Macnab had already cut and set a multitude of bits from the roots of Gunning's present consignment, which arrived in excellent order covered in mould and without other protection. I suppose, therefore, that there can be no doubt you have already the means of rapid multiplication, and of an early crop for India. Bye and bye the supply will, I hope, be very abundant.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

IRRIGATION OPERATION OF FUSL KHURREEF IN THE NORTH-WESTERN PROVINCES UP TO 31st JULY 1870.

Water distributed during July 1870.	Depth in Canal at Regulating Gauge.	Gross Consumption, cubic feet per second.	Land Irrigated (approximate).		Rain-fall.	
Canal Divisions.	Full supply, feet.	Actual throughout, feet.	Estimated full discharge.	Actual average throughout.	Zillah.	Acres.	Total from 1st April to 31st July 1870.	Average of ten previous years for the same period.
Ganges Canal. Northern	9·00	4·70	5,585	111	Saharunpore	27,675	19·1	18·6
					Muzuffernuggur	51,087	25·9	13·1
					Meerut	70,759	26·2	13·2
Meerut	6·80	3·15		453	Boolundshuhur	30,704	19·0	8·3
					Allygurh	37,089	15·0	12·4
Futtehgurh	6·50	..		6	Muttra	5,714	18·1	11·3
					Agra	500	14·6	12·4
Boolundshuhur	Not known	2·10		142	Etah	9,164	11·2	12·6
					Mynpoorie	9,343	11·5	13·5
Allygurh	6·00	3·18		286	Futtehgurh	4,246	18·7	13·7
					Etawah	12,753	13·3	13·0
Etawah	4·80	1·80		228	Cawnpore	21,549	7·7	13·5
					Dehra Doon	4,579	42·2	28·9
Cawnpore	6·00	3·75		..	Bijnour	552	16·4	13·5
					Terai	1,601	32·7	19·4*
			Total	1,206	Bareilly	10,720	25·7	19·1
					Jhansie	67	14·2	19·1
Eastern Jumna Canal	..	3·88	..	790	Humeerpore	200	13·9	15·0
Doon Canals	..	..	..	171				
Rohilkhund Canals	..	..	..	600				
Total	..	..	..	2,767	Total	298,902	..	..

Remarks.

The mean volume of the Ganges Canal passing the Roorkee gauge during the month, was 2,350 cubic feet. Volume discharged were :—

Tail, Etawah Branch	..	80 c. ft. per second.
Escapes, ,,	..	222 ,, ,,
Tail, Cawnpore ,,	..	193 ,, ,,
Escapes, ,, ,,	..	649 ,, ,,
Total	..	1,144 c. ft. per second.

The Cawnpore and Etawah Branches have alternate weeks of high and low supply. The gauge-readings give the means of the month.

There was a slight demand on the Ganges Canal for water during the second week; this demand entirely ceased owing to heavy and general rain about the middle of the month. The main canal was closed twice during the month. The lowering of the supply on both occasions was very gradual. The first closure commenced about noon of the 4th instant, and lasted till noon of the 9th instant. The object of this closure was an inspection of the works below water-line, in anticipation of the annual closure which had been notified in the *Government Gazette* as likely to take place after the 15th instant. This annual closure commenced on 24th at 1 p. m.

Futtehgurh Main Branch was closed all the month: the Jaoli Rajbuha ran for six days in the month.

On the Eastern Jumna Canal, the demand was very slight, and only for rice. On the 17th very heavy rain (8·5" in 4½ hours near Saharunpore) fell all over the upper part of the canal. Considerable damage was done to banks and culverts. The canal supply was shut off on the 18th, to allow of the use of the canal as a drainage channel for the collected water. The floods of the Jumna were exceptionally heavy, the Jumna gauge at Kharra Head stood on the 26th at 11' 6", the highest reading since August 1867. The canal was re-opened on the 28th, to meet an increasing demand for rice.

On the Doon Canals, the demand for rice was fair during the whole month.

Navigation Returns, Ganges Canal.

Nature of Traffic.	Up. Mds.	Up. No.	Down. Mds.	Down. No.	Total Up and Down. Mds.	Total Up and Down. No.
Grains—						
Wheat	..	..	693	..	693	..
Barley	..	..	152	..	152	..
Paddy	..	..	25	..	25	..
Urhur	..	..	69	..	69	..
Gram	..	..	135	..	135	..
Oorud	..	..	80	..	80	..
Total	..	..	1,154	..	1,154	..
Cotton	..	..	789	..	789	..
Oil-seeds	525	..	722	..	722	..
Salt	..	..	538	..	1,063	..
Metals	..	..	330	..	330	..
Building materials	238	..	11,600	..	11,838	..
Miscellaneous goods	455	..	1,663	..	2,118	..
Firewood	..	..	12,866	..	12,866	..
Bamboos	..	..	..	13,180	..	13,305
Bullees, or Poles, unsquared	..	125	..	492	..	542
Kurrees, squared, small	..	50	..	..	..	531
Scantlings	..	516	..	15	..	15
Logs	..	..	..	15	..	142
Miscellaneous timbers	..	94	..	48	..	..
Passengers, or Live Stock	..	..	..	136	..	136
Grand Total	1,218	785	29,664	13,886	30,380	14,671*

* Average for the past six years. Rain-fall previous to 1864 not given.

W. G. ROSS, *Lieut., R.E.,*
Asst. to Chief Engineer, Irrigation Works, N. W. P.

Allahabad;
The 17th August 1870.

GOVERNMENT OF INDIA.

LEGISLATIVE DEPARTMENT.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Tuesday, the 6th September 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K.P., G.C.S.I., *Presiding.*
His Excellency the Commander-in-Chief, G.C.B., G.C.S.I.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K.C.S.I.
The Hon'ble J. Fitzjames Stephen, Q.C.
The Hon'ble B. H. Ellis.
Major-General the Hon'ble H. W. Norman, C.B.
The Hon'ble F. R. Cockerell.
His Highness the Hon'ble Sarámade Rájáhae Hindustán Ráj Rájendra Srí Mahárájá Dhiráj Sivái Rám Singh Bahádur of Jaypúr, G.C.S.I.

OUDH TALUQDARS' RELIEF BILL.

The Hon'ble MR. STRACHEY moved that the Report of the Select Committee on the Bill to relieve from incumbrances the estates of Taluqdárs in Oudh be taken into consideration. He said that the Report described the alterations which it was proposed to make in the Bill. He need not refer to them in detail, because, for the most part, they left the main features of the Bill unchanged. There were, however, a few points which required notice.

An important alteration had been made in section three. As the Bill originally stood, no limit of time was prescribed within which the provisions of the Bill might be made applicable. Since, however, this measure was avowedly of an altogether exceptional character, it seemed right to restrict its operation within such limits as were compatible with the object which it was intended to effect. It was proposed to limit to twelve months after the passing of the Act, the time within which applications must be made. The result would be, if this alteration were approved by the Council, that, although the Government would be prepared to help the Taluqdárs out of their present difficulties by these exceptional measures, it would not continue to do so permanently. If any Taluqdár omitted to avail himself of the opportunity offered to him, or if after the term stated in the Bill had elapsed, he chose to involve his estate in embarrassment, he would have no right to expect that the Government would again interfere to save him from the consequences of his own folly.

When the Bill was introduced he (MR. STRACHEY) said that it would be a question for consideration whether authority might not be given to the Executive Government to extend the provisions of the Bill under certain circumstances for the relief of estates of great and ancient families in other parts of the country.

Representations had been made by more than one Local Government urging the expediency of this course; but, on full consideration of the question,

the Government did not think that any such general extension of the provisions of this measure would be expedient.

It had always been stated that this Bill was introduced for political reasons of an altogether exceptional character, and those reasons were recognised by the late Viceroy, Lord Lawrence, at the last meeting of the Legislative Council at which he was present, as justifying the special interference of the Government.

He (MR. STRACHEY) did not deny that strong political reasons for similar interference might exist in some cases in other provinces, and on more than one occasion lately the Government had endeavoured to assist the heads of ancient families, to whom the people looked up as their natural heads, with the object of relieving them from their difficulties. A law, however, which might be applied generally or arbitrarily at the will of the Executive Government to save landholders from the consequences of their own improvidence, would hardly be justifiable.

The economical results of such a general measure might be very mischievous indeed: it was, perhaps, hardly too much to say that the value of landed property throughout the country might be affected by the passing of such a law. The security, for instance, of mortgagees would be diminished, if at the will of the Executive Government the mortgagee might at any time be compelled to give up his interest, to receive his money, and seek some other investment.

Even as regards Oudh the economical objections to the present Bill could not be denied, but the political reasons which had been held to justify it were altogether peculiar.

He (MR. STRACHEY) asked the Council to remember the origin of the tenure on which the Taluqdárs of Oudh held their estates. They did not hold them by ancient ancestral right. Their rights were entirely created by the British Government itself, and they were held by the free gift of the British Government alone. All rights of property which the Taluqdárs formerly possessed in the land were confiscated by the famous proclamation of Lord Canning in 1858 as a punishment for their rebellion, and every right of property which these Taluqdárs now possessed, they derived from the free gift of Lord Canning's government.

It was the avowed policy of that Government to recreate in Oudh a great aristocracy holding its estates by a tenure of English type unknown to the Hindú or Muhammadan Law, or to the ancient custom of Oudh itself.

The Law of Primogeniture, in a form unknown in any part of India, was established, and the rights of all other parties in the soil were either swept away, or were to be held in entire subordination of the Taluqdárs.

Every Taluqdár received unrestricted powers of disposing of his estate as he pleased. These powers were at variance in their nature both with Hindú law and custom, and with the customs of Oudh itself, and they were practically more extensive than those possessed by almost any great landholder in England itself.

Sir Charles Wingfield, who migh tbe considered, to a certain extent, as the originator of the policy followed after the mutinies in Oudh, strongly protested against giving the Taluqdárs these unlimited powers of disposing of their estates. These powers went very far beyond what he desired, and he predicted (and there was certainly no man living who had a better right to speak upon the subject) that the almost inevitable result of removing the checks imposed by Hindú law and custom on the disposal of ancestral property, would be the ultimate ruin of the families which the British Government desired to maintain. The government of Lord Canning, however, insisted on placing the Taluqdárs in this altogether exceptional position.

The promises made by that Government had to be fulfilled, and they were strictly and scrupulously fulfilled by the government of Lord Lawrence, which,

by the passing of Act I of 1869, gave the force of law to all the engagements which had been entered into with the Taluqdárs. Whether these engagements were wise, time alone could shew; and this was not now a question for discussion.

The result of all that had been done was, that a great experiment was being tried in Oudh, and it was the duty of the Government, which by its own acts had created the existing state of things, to give that experiment every fair chance, and to endeavour to remove all removeable difficulties which might interfere with the possibilities of its success.

This was the object and justification of the present Bill.

It had been ascertained beyond doubt that many of the Taluqdárs of Oudh were so deeply in debt, and their estates were now subjected to such heavy incumbrances, that it was impossible for them to perform their functions as landholders, and that unless some relief was given to them their estates would, sooner or later, be lost to them and pass into the hands of money-lenders and strangers. Thus the political objects with which the system now existing in Oudh was created by the government of Lord Canning would be defeated.

This Bill, if it became law, would give the Taluqdárs of Oudh a chance of recovering and maintaining their position.

The experience that had been gained by the Act of 1862, passed by the Bombay Legislature for the relief of the Taluqdárs of Ahmedabad, on which the present Bill was founded, showed, as he (MR. STRACHEY) had explained on former occasions, that, without any sacrifice of the just rights of creditors, we might hope to free the estates of the Oudh Taluqdárs from their present heavy incumbrances.

The Hon'ble MR. COCKERELL said that, although he had joined the other Member of the Select Committee in recommending the adoption of the amended Bill by the Council, he was far from thinking it as perfect a measure as, even consistently with its political object, it might be; and, in reference to what had fallen from his Hon'ble friend the Mover in regard to its extension to other places, he (MR. COCKERELL) thought we did well to confine its operation to the territories within which, on special political considerations, it was originally designed to have effect.

The great defect of the Bill, as seemed to him, was its want of any provision for the due protection of the interests of the creditors of the indebted Taluqdárs whose estates might be brought under its provisions.

It was doubtless essential to the attainment of the object of this legislation that the action of the civil courts should be barred as was provided by section four of the Bill, and, perhaps, even the enforced surrender by the mortgagee in possession required by section seventeen could not in that view be avoided; but he (MR. COCKERELL) was of opinion that it was not necessary to hand the creditors over to the tender mercies of the manager (tempered only by the control of the Chief Commissioner) so unreservedly as was done by section eleven.

It seemed to him that the creditors, whose ordinary remedy for the assertion of their rights was wholly barred by the combined operation of sections four and twenty-three, and especially the mortgagees who might be deprived of the possession of the property mortgaged to them, were equitably entitled to the protection of some stipulations in regard to the liquidation of their admitted claims by the manager. As the Bill stood, there was no guarantee that the liquidators would be guided by such considerations, in regard to conditions of interest on the loans to the Taluqdárs, priority of lien on their property and other matters, as would be taken into account in the adjudication of the creditors' claims by the civil court; or that the dispossessed mortgagee who had

secured himself in his transactions with the Taluqdár, would be in any better position as regards the recovery of his loan than the other creditors who had no such security.

It had been suggested that the omissions of the Bill in this respect could and would be remedied by the rules to be framed under section twenty. He (MR. COCKERELL) confessed he should have preferred to see the required protection directly secured by the Bill itself.

He did not propose, however, to move any amendment in this sense, but he had thought it right to draw the attention of the Council to the subject, in the hope of eliciting from the Hon'ble mover of the Bill a public declaration that it was the intention of the Chief Executive Government to insist upon the rules to be made under section twenty being so framed as to secure as much protection to the interests of the creditors as was compatible with the political objects of this legislation.

The Hon'ble MR. STEPHEN said that there would be no serious practical difficulty in making rules to carry out Mr. Cockerell's object. It certainly was not the wish of Government to put mortgagees and other secured creditors in a position worse than that which they would have held if the Bill were not passed. But if the Government or the Select Committee had embodied all these rules in the Bill, the measure would necessarily have become elaborate and even cumbrous. The Bill, to a great extent, would have become an Insolvency Bill, and the rules contained in it would, he (MR. STEPHEN) feared, have some times been unintelligible to those who would have to work the present measure. The Local Government would make the necessary rules with a practical regard to the necessities of the case, and before these rules came into force, they would be carefully scrutinized by the Legislative Department.

The Hon'ble MR. STRACHEY wished to add only a few words to what had been said by his Hon'ble friend, Mr. Stephen; and he need say nothing further as to the reasons for which it seemed desirable to leave to the Chief Commissioner and to the Government to provide by rules for all matters of detail which will arise in carrying out the provisions of this Bill.

He was extremely glad that his Hon'ble friend, Mr. Cockerell, had referred prominently to this very important part of the question.

He thought, as to the points to which he had alluded, there could be no possible difference of opinion. To sacrifice the legitimate claims of honest creditors for the purpose of saving the Taluqdárs of Oudh from the consequences of their own folly and improvidence, would be, he thought, not only morally and economically but politically wrong. The objects of this measure were political, and it might safely be asserted that the British Government could never gain politically by adopting measures involving wholesale and deliberate injustice to honest men. It would be the duty of the Local Government in framing rules under section twenty of the Bill, and in supervising the operation of all the measures that were adopted, to take every possible care that the just rights of creditors were respected.

The Motion was put and agreed to.

The Hon'ble MR. STRACHEY then moved the following amendment:—

That the following words be added to clause four of section twelve:—

"and any mortgagee dispossessed under section seventeen shall be reinstated, unless his claim under the mortgage has been satisfied."

He said that this addition was desirable owing to the introduction of a clause in section twelve, providing for the restoration of the Taluqdár to his property if, within six months, the Chief Commissioner thought that the provisions

of the Act should not continue to apply thereto. Thereupon all barred proceedings and debts would be revived; and it was only just that dispossessed mortgagees should be restored to their former position.

The Hon'ble MR. STRACHEY then moved that the Bill as amended be passed.

The Motion was put and agreed to.

PENAL CODE AMENDMENT BILL.

The Hon'ble MR. STEPHEN asked leave to postpone his Motions regarding the Bill to amend the Penal Code.

Leave was granted.

COINAGE AND MINT BILL.

The Hon'ble MR. STEPHEN moved that the Report of the Select Committee on the Bill to consolidate and amend the law relating to Coinage and the Mint be taken into consideration.

He said that this was emphatically a measure of consolidation. Its object was the improvement of the law, and not the settlement of any of the delicate questions which were connected with the state of the currency. On these questions the Bill committed the Government to nothing, and he (MR. STEPHEN) believed that they saw no immediate necessity for entering upon their consideration. He made this statement, because he had seen in the public papers statements which showed that the measure had been misunderstood, and that it was supposed to be something more than it really was, a part of the general scheme of consolidation to which he had so often referred. Had it been a financial or currency measure, it would have been introduced by his Hon'ble friend, Sir R. Temple, who was the proper person to deal with such subjects. Though, however, the measure was a juridical and not a financial one, it had the sanction and approval of the Financial Department, and the opportunity had been taken of making a few alterations in the law which the experience of that Department recommended. Still, with the exception of the clauses relating to the destruction of light weight, counterfeit, and called-in coin, the Bill was little but a re-arrangement, in twenty-eight sections, of the law now scattered through four Regulations and two Acts.

The changes made by the Select Committee might be shortly stated.

As money could only be made exact within a certain limit of error, the Committee had followed the example of the recent English Act (33 Vic., cap. 10), and introduced clauses providing that the 'remedy,' or permissible deviation from standard weight and fineness, for gold and silver coins, should be as follows:—

	Remedy in weight.	*Remedy in fineness.*
Gold Mohur.	$\frac{2}{1,000}$	$\frac{2}{1,000}$
½ ditto.		
⅓ ditto.		
Double ditto.		
Rupee.	$\frac{5}{1,000}$	$\frac{2}{1,000}$
½ ditto.		
¼ ditto	$\frac{7}{1,000}$	$\frac{3}{1,000}$
⅛ ditto	$\frac{10}{10,000}$	

The remedy for all copper coins would be one-fortieth in weight.

In section nine the clauses relating to the receipt of mohurs and sovereigns in payment of Government demands had been omitted. This matter was, the Committee thought, better left to the Executive.

Part VII had been restricted to silver coin: the power to cut light-weight, counterfeit, and called-in coins was confined to such officers as Government would appoint in this behalf; and such power would be exercised subject to rules prescribed by the Government of India. Coins so cut which were counterfeit or had been reduced in weight otherwise than by reasonable wearing, would be returned. But genuine coins so cut, which had lost more than two per cent. in weight, or had been called in, would be received at the rate of one rupee per tola. These alterations rendered unnecessary the section regarding the decision of disputes by a Magistrate.

In Part VIII clauses had been introduced requiring the Mint Master to receive all bullion fit for coinage which might be brought to the Mint in certain quantities, and imposing a charge for melting or cutting of one-fourth per mille on gold, and of one per mille on silver bullion.

Where bullion so brought was withdrawn, the Committee had provided that the withdrawal should be within twenty-four hours after receiving the Assay Master's report, and on payment of a fee prescribed by the Government of India.

Section nineteen, as to the additional duty for coining half and quarter rupees, had been struck out. It would, if enacted, have injured the poorer classes by preventing the free issue of small coin without extra charge.

The Committee had empowered the Governor General in Council to make rules as to the staff and management of the Mint, and also (by notification in the *Gazette*) to diminish the amount of remedy allowed, to call in coins, to prescribe rules for the guidance of officers authorised to cut or break coin, to establish mints at any places in British India other than Calcutta and Bombay, to abolish both or either of the mints at those towns, and to regulate any matters relating to coinage and the mint not provided for by the Bill.

Lastly, Bengal Regulation XIV of 1817 had been added to the schedule of repealed enactments.

The Hon'ble SIR R. TEMPLE desired to express, on behalf of the Financial Department, the obligation it was under to the Legislative Department for the care with which the present measure had been elaborated.

The Motion was put and agreed to.

CORONERS' BILL.

The Hon'ble MR. STEPHEN introduced the Bill to consolidate the laws relating to coroners, and moved that it be referred to a Select Committee with instructions to report in six weeks. He said that this Bill was also a measure of consolidation, and would, if enacted, put an end to the separate existence of five enactments.

The Motion was put and agreed to.

PRISONS' BILL.

The Hon'ble MR. COCKERELL presented the Report of the Select Committee on the Bill to amend the law relating to prisons in the Panjáb, Oudh, the Central Provinces, and British Burma.

PRISONERS' BILL.

The Hon'ble MR. COCKERELL asked leave to postpone his Motion for leave to introduce a Bill to consolidate and amend the law relating to prisoners.

Leave was granted.

LOCAL EXTENT BILL.

The Hon'ble MR. COCKERELL moved that the Hon'ble Mr. Strachey be added to the Select Committee on the Bill to declare and consolidate the law relating to the local extent of the general Regulations and Acts, and the local limits of the jurisdiction of the High Courts and chief controlling revenue authorities.

The Motion was put and agreed to.

MAULMAIN TIMBER DUTIES' BILL.

The Hon'ble MR. STEPHEN moved for leave to introduce a Bill to legalize the levy of duties on certain timber imported into Maulmain between July 1864 and August 1865. He said that duties on foreign timber imported into Maulmain by th e Salween River, which flowed through the Tenasserim Division, had, since 1842, been levied at a place called Kado. Down to October 1864 these duties were supposed to be authorised by Act XXX of 1854, section seven, which provided that 'teak timber floated down any river in the Martaban *or Tenasserim* Divisions, should be charged with the same duty as that chargeable for the time being under section six on teak timber passing a river frontier custom-house,' *i. e.* (as appears from section six), a custom-house on either of the Rivers Irawádi and Sítang. But duties levied on timber passing down these two rivers were abolished by a notification in the Foreign Department made under Act IV of 1863, and dated the 4th June 1863. Thenceforward, therefore, the levy of duties on the Salween River was unauthorised. The change in the law as regards the Salween was, of course, unintentional, and had been, until quite recently, unknown both to the local authorities and the public. The present Bill was intended to legalize the levy of these duties from the 1st July 1864 down to the 2nd August 1865, and to indemnify the officers concerned. For the duties levied before the former date the Limitation Act would provide, while those levied after 2nd August 1865 were legalized by Act VII of 1869.

The Motion was put and agreed to.

EVIDENCE BILL.

The Hon'ble MR. STEPHEN moved that the Hon'ble Mr. Strachey be added to the Select Committee on the Bill to define and amend the Law of Evidence. He said that the Motion afforded him an opportunity of saying a few words on a measure of the very highest importance. The Evidence Act was drafted by the Indian Law Commissioners, and sent out to this country two years ago. It was introduced by Mr. Maine, referred to a Committee, several of the members of which had now ceased to belong to the Council, and published in the *Gazette* for general information.

Objections of great weight had been taken to it by many of the most distinguished lawyers in India, and, no doubt, the subject was one which required the most careful handling. It was impossible to exaggerate the practical importance of the Bill, as it would regulate the most important part of the procedure of every court of justice throughout the Empire. Such a measure would, of course, require the most careful consideration in each of its parts, and it appeared to him (MR. STEPHEN) that the great question which the Committee would have to consider was, what was likely to be practically useful in the various courts, and, in particular, in the courts of the mofussil. The

English Law of Evidence had been gradually constructed by the decisions of successive generations of Judges and by Acts of Parliament, and it assumed throughout that the court had the assistance of a highly-qualified bar, that the facts in dispute were decided by a jury, and that the Judge was to act as an umpire between two litigants, and not as an independent enquirer into facts. The result had been that the object of many of the rules of evidence was rather to bring the proceedings to a point than to aid enquiry into truth. It was not so much a guide to the Judge as a set of conditions imposed upon the parties. He (MR. STEPHEN) felt doubts whether such a system could be advantageously introduced into this country without great modifications.

At the same time it was necessary to take some steps. The law was in a state of great uncertainty. No one could say precisely how far the English Law of Evidence did, and how far it did not, prevail in the mofussil, and the consequence was that the subject caused great difficulty and uncertainty. As a proof of this he (MR. STEPHEN) might observe that in Messrs. Cowell and Woodman's Indian Digest, which contained notes of cases decided in about eight years, the title 'Evidence' filled no less than twenty-three royal octavo pages in small print and double columns. There were probably from four to five hundred decisions noted upon the subject. This was the state of things for which the Committee would have, if possible, to provide a remedy. It was one which in justice to exceedingly hard-worked officials ought not to be permitted to continue.

The Motion was put and agreed to.

The following Select Committee was named:—on the Bill to consolidate the laws relating to Coroners, the Hon'ble Mr. Cockerell and the Mover.

The Council then adjourned to the 20th September 1870.

WHITLEY STOKES,

SIMLA;
The 6th September 1870.

Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

No. 36 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, SEPTEMBER 17, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

Non-Subscribers to the GAZETTE *may receive the* SUPPLEMENT *separately on a payment of six Rupees per annum if delivered in Calcutta, or nine Rupees four annas if sent by Post.*

No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

PLAN FOR DESPATCH OF COVERS TO THE ADDRESS OF OFFICERS ACCOMPANYING THE VICEROY ON TOUR.

From F. R. HOGG, ESQ., Officiating Deputy Director General of the Post Office of India, to the Private Secretary to His Excellency the VICEROY and GOVERNOR GENERAL of India,—No. 654, dated Simla, the 12th May 1870.

ON occasions of His Excellency the Governor General proceeding on tour, it is customary for your Office to forward to my Office a tour list with the names of those who accompany His Excellency, with instructions to regulate thereby the transmission of covers by Post. The redirection of covers at a Post Office other than that of the original address involves great trouble, and cannot practically be fully carried out. It has been found also that considerable inconvenience is caused by the redirection of covers in accordance with your instructions, but which, nevertheless, were not intended for redirection by those who posted them.

2. For instance, in the tour list received with your communication dated 26th March, "Major-General H. W. Norman, C. B., Secretary to Government, Military Department," was mentioned as one of the party, and yet great inconvenience was caused by the transmission to His Excellency's Camp of a number of covers addressed to the Secretary to the Government of India in the Military Department, Calcutta or Simla, which were intended for General Norman's Office, and not for himself.

3. It seems desirable, therefore, that there should be some clear and simple rule for the guidance of the Post Office in such cases, and I would propose that future instructions of the kind referred to, be applied only to covers addressed to "The Governor General's Camp," all those addressed to a particular Post Town being forwarded to that Post Town.

4. It would be easy, if His Excellency considers it desirable to except from the operation of this rule the Overland Express Packet for the Viceroy which might be forwarded to the Camp, even though bearing the name of a particular Post Town on its address.

5. This seems to me to be on the whole the best rule; but if any other of equal simplicity can be substituted, I shall of course be ready to carry it out. The great object in framing any

rule is to avoid complication and to provide a form of address which can easily be observed, both by those who post letters, and by the Department which conveys them.

From MAJOR O. T. BURNE, Private Secretary to the Viceroy, to the Officiating Deputy Director General of the Post Office of India,—dated Simla, the 18th May 1870.

IN reply to your letter of the 12th instant, I have the honor to say that His Excellency the Viceroy approves of the plan you suggest for the transmission of letters during future tours as an experimental measure.

GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

REPORT DESCRIPTIVE OF THE ROUTE TAKEN BY DR. CAYLEY OVER THE MASIMIK PASS, THROUGH THE LINGRI THANG PLAIN, AND UP TO THE KARAKASH RIVER.

From DR. H. CAYLEY, Joint Commissioner to Ladak, to the Secretary to the Government of the Punjab,—No. 7, dated Camp Karakash River, the 28th July 1870.

AFTER leaving the Pangong Lake I accompanied Mr. Forsyth's camp for three marches over the Masimik Pass as far as Pamzal, in the Changchenmo Valley. A good road has been made the whole way, and the pass itself, nearly 19,000 feet high, is particularly easy, and the ascent and descent most trifling. From Pamzal I came on ahead of Mr. Forsyth, and, following the route I took in 1868 through the Changchenmo Valley, and over the lowest of the passes leading across the mountain range to the north, reached the centre of the Lingri-thang plain on the 19th.

The pass by which I crossed out of Changchenmo, and over which, on my recommendation, Mr. Forsyth followed, is by far the lowest and easiest of all; in fact, it has only a perceptible ascent and descent of a few hundred feet with very gentle gradients; but the road made last year by the Kashmir authorities has been carried over a very much higher and steeper part of the range a few miles to the east, although I particularly pointed out exactly what course the road ought to take, and put up marks to define it.

In Lingri-thang I met the messenger sent back by Tara Singh and Hurri Chund from Shahdula, who reported that all was well, and preparations were being made for Mr. Forsyth's receptions; this proves the untruth of the rumours of disturbances in Yarkund.

From camp Lingri-thang I started on the 21st, and leaving the new well-known route to the eastern branch of the Karakash which I followed in 1868, I took a direction north by west across the plain, and reached the southern or main branch of that river in two marches, and, following down its course, arrived this morning at the junction of the two branches of the river where the roads re-unite. I have been making hurried forced marches in order to catch Mr. Forsyth's camp at this point, but now discover that it is a day's march behind, and will not be here till to-morrow. The envoy, Mirza Shádi Sayad Yakúb Khan, and others of the Yarkundis, have gone on ahead towards Shahdula, five stages distant. They have Yarkundi horses as baggage animals, which can make daily marches without getting knocked up, as is not the case with the inferior ponies of Kashmir and Ladak, such as were supplied to carry Mr. Forsyth's camp.

The route I followed is three marches longer than the other, and it is doubtful if it present any special advantages to compensate for the extra distance.

The last six marches are very good and easy, and grass, fuel and water, the essentials for travelling in these barren regions, are abundant; but for two marches beyond Lingri-thang plain, although the road is extremely easy, and the mountain pass, Kizil Pass, hardly preceptible, there is no grass, although water and a little fuel can be found; so that from the Changchenmo Valley to Karakash the caravan would have nearly five consecutive marches without finding grass.

On my return I am in hope of finding an easy route up to the head of the southern branch of the Karakash River and then to the Changchenmo Valley, by which the barren plains would be avoided, or only traversed for a few miles, and along which grass would be found at every stage.

I hear from the Native Doctor whom I have left in charge of the Dispensary at Lé that patients are attending as usual.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

No. A.—RUBBEE STATEMENT.

IRRIGATION OPERATIONS OF FUSL RUBBEE, 1869-70, IN THE NORTH-WESTERN PROVINCES.

Comparative Statement of Irrigation and Rain-fall in Canal Districts of the North-Western Provinces.

ZILLAH.	Area in Acres.	Cultivated Acres.	AREAS IRRIGATED. Rubbee, 1868-69.	Rubbee, 1869-70.	1869-70, COMPARED WITH 1868-69. Increase.	Decrease.	RAIN-FALL FOR 6 MONTHS, FROM OCTOBER 1869 TO MARCH 1870, INCLUSIVE. October. 1868.	October. 1869.	November. 1868.	November. 1869.	December. 1868.	December. 1869.	January. 1870.	January. 1869.	February. 1870.	February. 1869.	March. 1870.	March. 1869.	TOTAL. 1868-69.	TOTAL. 1869-70.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.
Saharunpore	1,425,825	1,001,518	101,631	48,855	...	55,776	...	...	...	...	...	·6	2·9	...	1·4	·5	4·8	2·8	9·1	3·9
Moozuffernuggur	1,054,965	703,549	136,458	72,390	...	64,068	...	·4	...	...	...	·4	2·2	...	1·5	...	2·8	1·5	6·5	2·3
Meerut	1,511,661	1,082,196	204,705	143,959	...	60,747	...	1·2	...	...	...	·2	·9	...	·5	...	2·4	1·6	3·8	3·0
Boolundshuhur	1,221,373	823,004	113,266	69,023	...	44,243	...	2·3	...	...	...	1·7	1·1	...	·4	...	1·2	1·4	2·7	5·4
Allygurh	1,190,118	932,640	82,857	59,948	...	22,909	...	5·8	...	...	...	·9	1·2	·3	·2	...	1·3	4·2	2·7	11·2
Muttra	1,032,021	831,124	14,647	10,942	...	3,705	...	1·0	...	...	...	·5	1·2	...	·2	...	1·5	1·4	2·9	2·9
Agra	1,119,037	886,774	1,030	845	...	185	...	4·1	...	...	...	·8	·6	...	·3	...	·8	2·9	2·1	8·0
Etah	898,838	585,330	23,467	17,755	...	5,712	...	7·3	...	...	...	1·3	1·1	...	·2	...	1·0	1·9	1·8	9·7
Mynpoory	1,066,634	676,615	67,210	39,123	...	28,087	...	1·7	...	...	...	1·8	·2	...	...	...	·1	1·8	1·2	4·9
Futtehgurh	1,08 ,399	674,034	30,110	12,812	...	17,298	...	4·0	...	...	...	2·0	·7	...	·1	...	·5	·9	·8	6·7
Etawah	1,014,123	572,221	55,413	38,437	...	16,976	...	7·9	...	...	...	·4	·4	...	...	...	1·5	2·0	2·6	12·3
Cawnpore	1,514,343	855,668	72,209	56,305	...	15,994	...	4·3	...	...	...	·2	...	...	...	...	1·1	·8	1·1	5·3
Dehra Doon	653,271	86,657	10,078	6,182	...	3,896	·1	2·6	...	...	...	·8	1·9	...	1·1	1·3	7·1	3·9	10·2	8·6
Bijnour	1,204,659	695,026	2,780	316	...	2,464	...	3·0	...	...	...	·7	1·8	...	1·0	·3	2·0	2·2	4·8	6·2
Terai	469,760	91,735	4,799	1,398	...	3,321	·1	4·1	...	...	...	1·3	1·4	...	·2	1·0	1·6	2·3	3·3	7·7
Bareilly	1,518,579	1,044,290	33,143	9,442	...	23,741	...	3·3	...	...	...	1·2	1·1	...	·2	·4	1·3	2·4	2·6	7·3
Jhansie	1,029,295	504,575	16	86	70	...	...	3·6	...	...	·3	·8	·8	·4	...	...	1·6	1·1	1·9	5·9
Humeerpore	1,464,641	783,987	890	642	...	248	...	6·0	...	...	·7	·3	·3	...	...	...	1·4	...	2·1	6·3
Total	20,582,542	12,760,938	967,719	588,419	70	369,370	·2	62·6	...	...	1·4	16·0	19·3	1·4	7·3	3·5	34·0	34·1	62·2	117·6

No. B 1.—RUBBEE STATEMENT.

Statement in Acres of Crops irrigated in Canal Districts.

DESCRIPTION OF CROPS.	Saharunpore.	Moozuffernuggur.	Meerut.	Boolundshuhur.	Allygurh.	Muttra.	Agra.	Etah.	Mynpoory.	Futtehgurh.	Etawah.	Cawnpore.	Debra Dhoon.	Bijnour.	Terai.	Bareilly.	Jhansie.	Hummeerpore.	TOTAL.	GRAND TOTAL.
(1) Gardens and Orchards	674	471	1,441	872	755	131	13	241	816	86	270	456	326	...	3	23	...	1	6,579	6,579
(2) Sugarcane ...	.....	1	6	.....	.....	...	...	.....	10	33	5	5	...	...	50	105	...	...	215	215
(3) Cereal Grains—																				
(a) Wheat, ...	39,010	59,736	110,560	40,066	32,887	6,629	453	8,821	23,250	6,787	20,916	21,905	4,130	288	518	7,510	64	73	383,603	623,011
(b) Barley ...	4,878	3,449	9,575	17,634	21,130	3,167	312	7,308	12,898	4,664	15,637	30,510	729	19	168	528	...	540	133,136	
(c) Other Grains ...	796	19	395	226	507	150	8	971	795	374	58	130	431	... 9	627	767	16	... 27	6,272	53,001
(4) Pulses ...	2,724	8,131	21,659	10,084	4,574	844	59	405	663	293	500	2,451	285		22	276	5		53,001	227
(5) Fodder Crops ...	1	56	124	44	2	...	...	.....	.....	.....	.....	.....	...	...	...	.....	...	...	227	
(6) Fibres—																				
(a) Cotton ...	.....	.....	 2	 6	.....	...	...	.....	114	16	9	1	...	...	...	.....	...	...	140	157
(b) Other Fibres ...	.....	 3	.....	.....	.....	...	...	.....	6	.....	.....	.....	...	...	...	.....	...	...	17	
(7) Dyes—																				
(a) Indigo ...	.....	 1	 62	 62	 23	... 1	...	.....	20	22	.....	23	...	...	...	.....	...	...	65	205
(b) Other Dyes ...	1			62							.....		...	...	...	.....	...	...	140	
(8) Drugs—																				
(a) Opium ...	42	5	 70	 25	 70	20	...	.....	487	513	1,003	651	37	...	...	.....	...	...	2,738	3,353
(b) Other Drugs ...	27	36						9	64	8	34	8	244	...	...	.....	...	... 1	15	
(9) Oilseeds ...	456	173	5	1	.....	...	...	.....	.....	.....	.....	.....	...	...	20	193	1	1	850	850
(10) Miscellaneous ...	246	309	69	1	.....	...	...	.....	10	16	5	165	...	...	...	.....	...	...	821	821
TOTAL 1869-70 ...	48,855	72,390	143,958	69,023	59,948	10,942	845	17,755	39,123	12,812	38,437	56,305	6,182	316	1,398	9,402	86	642	588,419	957,719
TOTAL 1868-69 ...	104,631	136,458	204,705	113,266	82,857	14,647	1,030	23,467	67,210	30,110	55,413	72,299	10,078	2,780	4,719	33,143	16	800	.....	

The small area under sugar-cane shewn in this Statement is in addition to that already shewn in corresponding Statement for the khurreef.

W. G. ROSS, *Lieutenant, R.E.,*
Assistant to Chief Engineer, Irrigation Works, N. W. P.

ALLAHABAD; *The 27th July* 1870.

No. 37 of 1870.

SUPPLEMENT TO
The Gazette of India.

SIMLA, SATURDAY, SEPTEMBER 24, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

OPERATIONS OF THE IRRIGATION DEPARTMENT IN THE CENTRAL PROVINCES DURING 1869-70 AND UP TO THE END OF JUNE LAST.

From T. W. ARMSTRONG, ESQ., C.E., Officiating Secretary to the Chief Commissioner in the Central Provinces, Public Works Department, to the Secretary to the Government of India, Public Works Department,—
No. 6—58 I., dated Nagpore, the 1st July 1870.

Public Works Department No. 131 I., dated the 13th May 1869.
Public Works Department, No. 205 I, dated the 26th May 1870.

WITH reference to the orders contained in letters noted on the margin, I am directed by the Chief Commissioner to forward a report received from the Irrigation Department reviewing the survey operations carried out during the past offi[illegible] year, and since then up to date, in the Central Provinces.

2. Seven projects have been under survey and examination.

3. The "Shere," a small scheme, has been carried out, and the works necessary were completed in April last at a cost of Rs. 3,136. This little work is described in paragraphs 2, 3 and 4 of the Report.

4. The Kanhan project has been submitted for the orders of Government, and the Pench and Balaghât schemes are now under consideration, and the necessary plans and estimates are being compiled.

5. There remains "The Dham," "The Wurdah," and "The Deo."

The two last have been practically abandoned on financial grounds, but the former presents favorable features which further investigation will, it is believed, develope, and so allow of its being submitted for orders. It will not be an expensive undertaking.

6. On the whole, the Chief Commissioner is statisfied at the progress made and field-work executed. The staff is small; and, owing to the sudden illness of Lieutenant Shepherd, some inconvenience and delay was experienced last working season.

Note by T. W. ARMSTRONG, ESQ., C.E., *Superintending Engineer, Irrigation Works, in the Central Provinces, Public Works Department,—Dated the 30th June* 1870.

REPORT submitted in accordance with orders contained in Government of India's No. 205 of the 26th May 1870.

THE UPPER DHAM PROJECT.

The investigation of this project was commenced, in the first instance, by Mr. Carey, with a view of supplementing the supply in the lower portion of the Wurdah Canal. It was then taken up at the commencement of the last field-season as a separate scheme. The idea entertained was to throw an anicut across the Dham at either "Kachnoor," the site first hit upon, or at "Kharangua," a later and better selected site, and to lead the water of the river off by channels on either bank. Lieutenant Shepherd, however, found that even so early as January, there was a flow in the river of only 2¼ cubic feet per second, and that officer consequently recommended that a reservoir site higher up the river should be searched for with the view either of supplementing the channels below in the drier months of the year, or else of taking out the channels direct from the reservoir itself, and so avoiding the construction of the anicut. Two sites were examined for this purpose by myself and Lieutenant Skipwith, one just above the village of Kachnoor, and the other at the junction of the Mahadeo, and another large nullah with the Dham, near the village of Masodh. This last was found to be the most favourable locality. It has been surveyed and cross-sectioned. The field-work was not completed until the month of May. It was found impracticable from the physical conformation of the country just below the proposed reservoir, to lead out the channels direct from it, except at a great expense, and the project has consequently been designed with a view to storing water in the reservoir at "Masodh," and then passing it down the river bed to the anicut and canals on either bank. This will involve waste from absorption, but it is unavoidable. The scheme sketched out as it stands, is not likely to prove a financial success, but it is known to be capable of modification and extension. The quantity to be stored in the reservoir is in excess of the supply requisite for the area under command as at present surveyed. The project is now under examination with a view to such modification and extension. The preliminary report on it, having been returned for that purpose to Lieutenant Skipwith, who is in charge of the surveys.

The following is a general statement of surveys made and levels taken:—

	Miles.
(1.)—Miles of channel surveyed	31½
(2.)—Subsidiary miles surveyed including check levels ...	101
(3.)—Miles of cross-sectioning	56
(4.)—Standard of supply, 100 acres khurreef crop, ... } 200 acres rubbee crop ... ... }	1 cubic foot per second
(5.)—Trial lines surveyed	59

"THE SHERE PROJECT."

2. This is a small project for "monsoon" irrigation only. It consists of a masonry dam, or little anicut across the bed of the Shere, which is an affluent of the Dham River, an earthen channel and some masonry works as culverts to pass drainage, have been executed also. The little anicut is three feet high, and the length of channel is somewhat over one mile. Its dimensions are, one foot width of bed, height of banks of about 2½ feet. It is intended to carry a depth of water of one foot only. The estimated cost of the whole scheme was Rs. 3,168, and the actual cost of construction was Rs. 3,136. Of this sum about one-half was spent by the close of the past official year, and the balance in the month of April. The channel and works have now been handed over to the Civil authorities for the prosecution of experiments in cotton cultivation, which are undertaken at the wish of the Viceroy, expressed when here in March. Manure of different kinds is to be used, and experience will be obtained as to which class of cultivation and quantity of irrigation water, the cotton plant will best thrive under, and yield more abundantly a supply of staple. Valuable data are expected from the results. The cultivation is under the direct charge of two officials, one a practical gardener or overseer, the other is Mr. Noble, an Assistant to the Cotton Commissioner, Mr. Carnac.

3. The surveys and the levels were carried out by Lieutenant C. E. Shepherd. The works were executed by Mr. Scott, Supervisor, Lieutenant Skipwith being then in Executive charge. The large proportion that the number of subsidiary miles levelled bears to the channel length, is due to the work having been connected with the mean sea-level, which was brought down from the Railway Station at Wurdah, distant some 12 miles, and also to more than one trial line having been surveyed.

4. The project was sanctioned by the Local Administration in Public Works Department Secretary's No. 2—15 I, dated 7th March 1870, and funds were supplied from the grant "Agricultural"—minor works Irrigation. The following is a general Statement of surveys made and levels taken:—

	Miles.
(1.)—Miles of channel surveyed	1⅛
(2.)—Subsidiary miles surveyed, including check levels ...	23¼
(3.)—Miles of cross-sectioning	⅛
(4.)—Number of acres it is proposed to irrigate ...	80 acres.
(5.)—Standard of supply	None.*

WURDAH CANAL PROJECT.

5. The Wurdah Canal was designed by Major Fischer to take its rise from the Wurdah River at the village of Laraigaon, not far from the important Town of Arvee, about 20 miles distant in a direct line from the Great Indian Peninsula Railway at Nachungaon. It was intended for "monsoon" irrigation only, combined with navigation. The line of canal after leaving the Wurdah follows a rough contour line for the first 19 miles of its course as far as the village of Russoolabad, where it divides into several branches, one of which crosses the Great Indian Peninsula Railway near Nachungaon—here it is upon a ridge line which it follows to Kamgaon. Another and smaller channel follows the Deolee ridge. A third and a principal one, after taking a tortuous course along a rough contour line, crosses the Great Indian Peninsula Railway near the Civil Station of Wurdah, and ultimately gets upon the Ulleepoor ridge, throwing out a branch for that of Mandgaon.

6. The anicut was designed by Major Fischer to be 29 feet high, with an estimated rise of flood waters on its crest of 12 feet. As calculated by formula, the rise amounted to 16 feet, but 4 feet were deducted on account of the increased velocity of approach. The canal channel was designed to carry 8 feet depth of water, with a bottom breadth of 41 feet, and side-slopes of 1 to 1. The estimated velocity with a fall in bed of 6 inch per mile, was 2 feet 3 inches per second, nearly. The nullahs and streams met by the channel on its course, were passed by lines of single embankment, provided with escape weirs for the overflow of surplus water. There were scarcely any other masonry works proposed, with the exception of sluice heads and the Baklee Nuddee aqueduct.

7. Colonel Strachey objected to the proposed method of crossing drainage lines by single embankments. Various other objections have been raised from time to time, and several modifications and alterations proposed, the principal of which will be found in the report which accompanied Lieutenant Shepherd's No. 452, dated 17th September 1869. Of the total amount of work done, as shown in the tabular Statement, 412½ miles were executed in the early part of the last official year. Since then, no field-work has been undertaken.

8. Major Fischer estimated that 280,000 acres would be commanded by the proposed channel, after deducting two-fifths of gross area for jungle, waste, village sites, and so on; and of this amount he proposed to irrigate 90,000 acres. The standard of supply being 100 acres for each cubic foot of discharge.

(4.)—The project was reported on by Lieutenant Skipwith in April 1870, as directed by me in March last. Since then, no further investigation of this project has been made and no further enquiry has been undertaken. The report was unfavourable to the scheme, chiefly on financial grounds. One principal point in it being that it was found that only 42,437 acres were under command of the channel estimated for by Major Fischer, instead of 90,000 acres as reckoned on by that officer; and moreover, it being now established that monsoon irrigation schemes will not be remunerative in the Central Provinces, they are rejected by all Departments and by the Chief Commissioner.

9. The following is a general statement of surveys made and levels taken—

	Miles.
(1.)—Miles of channel surveyed	162
(2.)—Subsidiary miles surveyed, including check levels	445
(3.)—Miles of cross-sectioning	551
	Acres.
(4.)—Number of acres it is proposed to irrigate	90,000
(5.)—Standard of supply, 100 acres to 1 cubic foot of discharge ...	
	Miles.
(6.)—Trial lines surveyed	70

* No exact standard is fixed, the project being an experimental one as explained above.

Kanhan Project.

10. By the Kanhan Project, it is proposed to utilize the water of the Kanhan River by storing a portion of the monsoon flow in a large reservoir at the village of Khapa. The water spread will cover 40½ square miles. This reservoir contains, when full, 19,758,000,000 cubic feet of water. The waste weirs are 13,000 feet in length, and in extreme floods, 3 feet is the greatest depth of water which will flow over them.

With the source of supply noted, it is proposed to irrigate a large tract of country, chiefly situated on the right or South-West bank of the Kanhan River, but also including a smaller District on the left bank, lying between that river and the River Pench, at their point of junction and in the Pergunnah Bhewgurh.

The larger District includes lands in the Pergunnah Patunsoungee, Kailod, Hingna, Nagpoor, Boree, and Ambora, and extends from near the town of Khapa to the banks of the Weingunga, near the point of debouchure of the Kanhan River.

11. The cost of the appropriation of the land for this reservoir, with the villages submerged, is estimated by Mr. Bernard, the Commissioner of Nagpoor, at one lakh and-a-half of Rupees. To cover contingent payments, two lakhs are included under this head in the estimate.

12. The channels are laid to command a gross area of 148,000 acres, and on the supposition that three-fifths of this total area will eventually have to be provided with water.

Mr. Bernard reports from actual returns that ·786 or four-fifths nearly of the gross area is either cultivated or culturable. The irrigable duty of the water is taken at the rate of one cubic foot per second for each 200 acres.

13. The estimate for the scheme is 72 lakhs of Rupees for 1,314 cubic feet per second, of Rs. 5,319 for each cubic foot per second of perennial supply.

If the water is charged at the rate of Rs. 3 per acre, per annum, the revenue is estimated at 3¾ per cent. for the first five years, if one-fifth of the gross area is irrigated; 5½ per cent. for the second five years, if two-fifths of the gross area is irrigated; and 11¼ per cent. for the third five years, if three-fifths of the gross area is irrigated. The supply of water is shown by the actual gaugings of the river to be practically perennial.

14. The field-work for the Kanhan Project last year extended from February 1869 to June 1869. Two European Overseers and one Native Sub-Surveyor were engaged taking contour levels on the site of the proposed Store Reservoir at Khapa, whilst the Executive Engineer, Mr. Hooper, was reserved for the important duties of contouring the line of main channel between the reservoir and Nagpoor, a distance of 33 miles, fixing the position of the aqueducts, river crossings, and communication bridges, &c. He also took check levels over the line of head-works at the reservoir, and a large series of check and trial levels in the District to fix contour canals and so on.

15. The following is an outline of the work done by the staff of the Kanhan River Irrigation Project:—

	Miles.
(1.)—Four contours for reservoir	429
(2.)—Section through line of hills forming dam to reservoir ...	5
(3.)—Section for waste weirs	8
(4.)—Check levels of head work at Khapa	2
(5.)—Longitudinal section of bed of River Kanhan	23
(6.)—Cross sections of the River Kanhan	5
(7.)—Trial line of Canal contoured from Khapa to Bunwaree ...	38
(8.)—Trial line of canal from Tegaie to Nagpoor	25
(9.)—Main canal bearing and levels from Khapa to Nagpoor ...	33
(10.)—Checking the same	22
(11.)—Trial levels in the Oomrair District	80
Total Miles ...	670

Balaghat Irrigation Project.

16. The District which can be commanded by the line of main canal, is bounded by the River Mussurra on the East and the Weingunga on the West. The canal after reaching the village of Durpewara about six miles North of Bhoora, or as it is more commonly called Balaghat, is at a sufficiently high level to command the land sloping away towards the Weingunga, and at a point two or three miles North of Balaghat gains the ridge or back-bone of the Doab, and, consequently, the whole of the land East and West of the main canal as far as the Bagh Nuddee, would be capable of irrigation if sufficient water could be obtained.

Proposed Source of Supply.

17. The supply of water will be obtained from two rivers, *viz.*, the Musmer and the Nehra which are affluents of the Weingunga. They empty into the latter river together, at a point near the village of Titwa.

No surveys exist of the catchment basins of these rivers, but cross-sections have been taken and necessary levels, to enable calculations to be made of flood discharges, and the summer season discharge has been accurately gauged at intervals.

These rivers, from their close proximity to the hills are quickly affected by showers, and it has been found that after a little rain, the flow of the Nehra increased from five cubic feet per second to about 30 cubic feet. Then gradually, and in about 10 days, returning again to five cubic feet a second, less than which it has not been. A gauge is now fixed in the Nehra to establish the flow with certainty.

The summer flow of the Musmer is very small, being about 1½ cubic feet per second, as a minimum.

Description of proposed Works.

18. The works proposed to regulate the flow and utilize the waters of these rivers, are as follows:—

(1.)—Store Reservoir on the Musmer at Kinaree Tola.
(2.)—The restoration of a Tank at Saeoree.
(3.)—The construction of a channel of 1½ miles, to convey the water stored in the Kinaree Tola Reservoir to the Saeoree tank.
(4.)—A channel from the Saeoree tank to pass the water stored in the Kinaree Tola Reservoir into the River Nehra.
(5.)—A Store Reservoir on the River Nehra near the village of Tikaree.
(6.)—An anicut across the Nehra near the village of Mondper.
(7.)—A canal from the anicut to convey the united waters of the Musmer and Nehra to the Balaghat Doab,—

Present Condition of the District proposed to be irrigated.

19. The District proposed to be irrigated is already supplied with a system of small tanks, and the ground is laid out for watering. This existing arrangement will suffice for one crop of rice, so that except in years of small rain-fall, none of the stored water will be required, during the months from June to November inclusive, the flow of water in the Nehra during that period will be amply sufficient to supplement the supply in the existing village tanks.

The disposal of the stored water.

20. During the remaining six months from December to June, the stored water will be drawn upon, and the supply that can be affodred, is calculated as follows, *viz.*—

From Kinaree Tola Reservoir per second for 150 days ...	11	cubic feet.
Nehra Reservoir	14	,,
Nehra River minimum flow	5	,,
Musmer ditto	2	,,
Total ...	32	,,

21. The approximate cost of the works to supply 32 cubic feet per second, amounts to Rs. 3,48,974, reckoning that each cubic foot per second will water 200 acres. We have—

Cubic feet per second.		Acres.		Square miles.
32	× 200 =	6,400	=	10

as the area capable of being irrigated by the proposed supply. To obtain 7 per cent. on the outlay, the following figures show that Rs. 24,400 must be received:—

	Rs.	Rs.
7 per cent. on	3,48,974	= 24,428
6,400 acres, @ Rs. 3-13		= 24,400

This is based on the assumption that the whole of the water will be quickly sought after, and it is considered certain that it will be.*

* The Commissioner of Nagpoor is of this opinion.

22. The estimate allows for the canal being carried down the Balaghat Doab as far as the Bagh Nuddee, so that if difficulty is found in the disposal of it in the neighbourhood of Bhoora, it may be advanced down the District at a small cost. The expense of the channel is very slight after reaching the ridge.

23. On the first of last February, field-work was begun in connection with the Balaghat Irrigation Project with a staff of one Executive Engineer, Mr. Hooper, two European Overseers, and one Native Sub-Surveyor. Mr. Anderson, Assistant Engineer, joined the camp on the 23rd February. The following is an outline of the field-work completed on the 3rd of the present month :—

	Miles
Contour levels Musmer Reservoir	18
Saeoree Reservoir cross-sections	2¾
Trial levels for channel between Musmer and Nehra Rivers ...	11½
Cross-sections and longitudinal sections of Nehra River at site of proposed Reservoir	12
Section for waste weirs of Nehra Reservoir	4
Survey of nullahs	10
Levels of main canal	34
„ branch canal	16½
„ Sub-branch canals	5
Trial levels main canal and in bed of Nehra River	36
Check levels of main and branch canals	40
Longitudinal sections of Musmer, Nehra, and Weingunga Rivers ...	48
Trial levels on banks of Weingunga	11
Trial levels near Punchalla and in the Durpewara Nullah ...	12
Traverse Surveys	7½
Cross-sections of Doab	59
Total number of miles surveyed ...	327

OTHER PROJECTS EXAMINED IN THE BHUNDARA AND BALAGHAT DISTRICTS.

24. When Mr. Hooper proceeded to examine the projects recommended to notice for the Balaghat and Bhundara Districts, he found at Chandpore, a village 30 miles North of Bhundara, a spot where the Lamundoho Nuddee has cut its way through the line of hills lying in the direction of Ambaghur and Chandpore. It is a good site for a reservoir, provided the ground higher up stream is favourable. A dam might be formed at a point near the village of Chandpore, where the hills are not more than five or six hundred feet apart. The banks and bed of the river are rock. The ground which lies between the Lamundoho and Ambaghur Rivers, slopes gently from the hills towards the Weingunga, and contains an area of 40 square miles. The greater portion of this is under rice cultivation, now a single crop, and is at present irrigated by a series of small tanks which often fail and do not afford water till late in the monsoon.

THE DEO NUDDEE PROJECT.

25. Being first under consideration, the Executive Engineer proceeded to Godree, a village on the banks of the Deo, beyond which all is dense jungle—a reservoir in the valley is impracticable. The course of the river has been traced from a point about three miles up stream from Assurma, to the village of Dhutta down the nuddee. It is found that no spot exists suitable for storing water on a large scale, and even if there was, the expense of leading a channel from it to the lands below, would be very great. It would pass through heavy jungle, the ground being cut up in the wildest manner by nullahs, hills, ravines, immense heaps of boulders, &c. It is only on reaching a point, near Dhutta, that any work could be done. Trial levels were commenced from this point, and 30 miles of levels were also taken down the bed of the river from Assurma to Kokha.

There was a considerable stream of water passing down the river in January, which measured as 40 cubic feet per second. It is believed that the river near runs dry, but the "Deo," throughout, is of such a character, that irrigation works from it would be of a most expensive nature, and the land which could be irrigated even at this great cost, is so limited in quantity, that it was not advisable to attempt to lay out a project. Mr. Hooper's attention was, therefore, directed to the Musmer and Nehra Rivers directly North of Bhoora. Trial levels were taken from the Weingunga at several rocky barriers with the idea of leading off a channel from an ancient, but the excavation and head-works would be such a great depth and so expensive, that reluctantly the investigation was abandoned.

PENCH PROJECT.

26. In the latter end of April last, a site for a reservoir on the Pench River, which had been proposed and reported on by Lieutenant Shepherd from some rough measurements, was again examined.

These have been now supplemented by a set of cross-sections within the basin of the reservoir, and a top contour line round its margin at a fixed height above the bed of the river, has been surveyed. At the proposed dam site, an accurate section of the ground along the line of the proposed head dam, completed the data required.

This information is now being worked up into form, and will be submitted as soon as completed.

"ABSTRACT OF FIELD-WORK."

		Miles.
27.	Contour of proposed Pench Reservoir	8¼
	Cross-sections of Reservoir	5
	Flying levels	2½
	Sections of gaps in hills on right and left banks of Pench River and section of river at proposed site of bund	2¼
	Total ...	18

28. From the above detailed report, I trust it will be allowed that the working staff of the Irrigation Department at Nagpoor, have been fully engaged the past year and with good results. The staff is small and the establishment inexpensive.

Practically, it consists of only one Executive Engineer and one Assistant Engineer, assisted by three Overseers. Lieutenant Skipwith is acting as Assistant Secretary, Public Works Department, and Assistant to the Chief Engineer.

29. Every project investigated or under survey, has been recommended, in the first instance, by the Civil Department, and orders were then passed on their proposals by the Chief Commissioner.

30. An abstract of the field-work put out of hands since February 1869, up to the 1st current, is as follows :—

	Miles of Levels, &c.
The Dham Project	247½
„ Shere „	24½
„ Wurdah „	412½
„ Kanhan „	670
„ Balaghat „	327
„ Deo „	30
„ Pench „	18
Total ...	1,729½

No. 341 I, dated Simla, the 17th August 1870.

From—The Government of India, P. W. Dept.,

To—The Chief Commissioner, Central Provinces.

I AM directed to acknowledge the receipt of your Officiating Secretary's letter No. 6—58I, dated the 1st ultimo, submitting a report of the operations of the Irrigation Department in the Central Provinces, during the past official year and up to the end of June last, and in reply to state that the report submitted describes very clearly what has been done, and the work performed is considered by His Excellency the Governor General in Council to be very creditable to the officers concerned.

2. A copy of the report will be forwarded to the Secretary of State for information.

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

PLAN FOR DESPATCH OF COVERS TO THE ADDRESS OF OFFICERS ACCOMPANYING THE VICEROY ON TOUR.

From F. R. Hogg, Esq., Officiating Deputy Director General of the Post Office of India, to the Private Secretary to His Excellency the Viceroy and Governor General of India,—No. 654, dated Simla, the 12th May 1870.

On occasions of His Excellency the Governor General proceeding on tour, it is customary for your Office to forward to my Office a tour list with the names of those who accompany His Excellency, with instructions to regulate thereby the transmission of covers by Post. The redirection of covers at a Post Office other than that of the original address involves great trouble, and cannot practically be fully carried out. It has been found also that considerable inconvenience is caused by the redirection of covers in accordance with your instructions, but which, nevertheless, were not intended for redirection by those who posted them.

2. For instance, in the tour list received with your communication dated 26th March, "Major-General H. W. Norman, C. B., Secretary to Government, Military Department," was mentioned as one of the party, and yet great inconvenience was caused by the transmission to His Excellency's Camp of a number of covers addressed to the Secretary to the Government of India in the Military Department, Calcutta or Simla, which were intended for General Norman's Office, and not for himself.

3. It seems desirable, therefore, that there should be some clear and simple rule for the guidance of the Post Office in such cases, and I would propose that future instructions of the kind referred to, be applied only to covers addressed to "The Governor General's Camp," all those addressed to a particular Post Town being forwarded to that Post Town.

4. It would be easy, if His Excellency considers it desirable to except from the operation of this rule the Overland Express Packet for the Viceroy which might be forwarded to the Camp, even though bearing the name of a particular Post Town on its address.

5. This seems to me to be on the whole the best rule; but if any other of equal simplicity can be substituted, I shall of course be ready to carry it out. The great object in framing any rule is to avoid complication and to provide a form of address which can easily be observed, both by those who post letters, and by the Department which conveys them.

From Major O. T. Burne, Private Secretary to the Viceroy, to the Officiating Deputy Director General of the Post Office of India,—dated Simla, the 18th May 1870.

In reply to your letter of the 12th instant, I have the honor to say that His Excellency the Viceroy approves of the plan you suggest for the transmission of letters during future tours as an experimental measure.

GOVERNMENT OF INDIA.

LEGISLATIVE DEPARTMENT.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Tuesday, the 20th September 1870.

Present:

His Excellency the Viceroy and Governor General of India, K.P., G.C.S.I., *Presiding.*
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K.C.S.I.
The Hon'ble J. Fitzjames Stephen, Q.C.
The Hon'ble B. H. Ellis.
Major-General the Hon'ble H. W. Norman, C.B.
The Hon'ble F. R. Cockerell.

MAULMAIN TIMBER DUTIES BILL.

The Hon'ble Mr. Stephen introduced the Bill to legalize the levy of certain duties on foreign timber imported into Maulmain, and moved that it be referred to a Select Committee, with instructions to report in a week. The Bill was intended to correct a departmental error committed in 1863, and he had already fully described the measure.

TARIFF BILL.

The Hon'ble Sir R. Temple moved for leave to introduce a Bill to consolidate the law relating to Customs' Duties. Various amendments in the present tariff were desirable, and the opportunity would be taken to incorporate the law relating to the import duties on salt and opium.

Leave was granted.

PRISONERS' BILL.

The Hon'ble Mr. Cockerell moved for leave to introduce a Bill to consolidate the law relating to prisoners committed by Courts. This Bill formed part of the general scheme for consolidating the Acts and Regulations, which, commencing with the Administrator General's Act (XXIV of 1867), had since been steadily pursued, and was now being actively carried out. It provided for the re-enactment of the substantial provisions of Acts VII of 1837, XVI of 1840, VIII of 1863, II and XII of 1867, and part of Act XXIV of 1855 relating to convicts and prisoners under confinement by order of any Court.

Those enactments embraced the entire law regarding such prisoners and convicts, as distinguished from the law relating exclusively to the internal management and economy of prisons.

No amendments of the existing law were contemplated by the Bill beyond such as were incidental to the more concise expression and convenient arrangement of the matter to be re-enacted.

Leave was granted.

CATTLE TRESPASS BILL.

The Hon'ble MR. COCKERELL moved for leave to introduce a Bill to consolidate the law relating to cattle-trespass. This also was a purely consolidation measure.

The principle, as he understood it, on which the general scheme of consolidation was being carried out, was that it was to be applied to all enactments, of which there were more than two on the Statute-book relating to the same subject and in operation exclusively within the same local limits.

The law regarding cattle-trespass was contained in Act III of 1857 and its amending Acts V of 1860, and XXII of 1861.

It was now proposed to re-enact in a consolidated form, for facility of reference, and without any material amendment, the extant provisions of those three enactments.

Leave was granted.

The following Select Committee was named:—On the Bill to legalize the levy of duties on certain timber imported into Maulmain, the Hon'ble Mr. Cockerell and the Mover.

The Council then adjourned to Friday, the 23rd September 1870.

WHITLEY STOKES,

Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

SIMLA;
The 20th Sept. 1870.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Friday, the 23rd September 1870.

PRESENT:

His Excellency the VICEROY and GOVERNOR GENERAL of India, K.P., G.C.S.I., *Presiding.*

His Excellency the COMMANDER-IN-CHIEF.

The Hon'ble JOHN STRACHEY.

The Hon'ble SIR RICHARD TEMPLE, K.C.S.I.

The Hon'ble J. FITZJAMES STEPHEN, Q.C.

The Hon'ble B. H. ELLIS.

Major-General the Hon'ble H. W. NORMAN, C.B.

The Hon'ble F. R. COCKERELL.

MAULMAIN TIMBER DUTIES BILL.

The Hon'ble MR. STEPHEN presented the Report of the Select Committee on the Bill to legalize the levy of certain duties on timber imported into Maulmain.

PAPER CURRENCY BILL.

The Hon'ble SIR R. TEMPLE moved for leave to introduce a Bill to consolidate the laws relating to Paper Currency. This was merely intended to consolidate the four Acts (XIX of 1861, I of 1866, XXX of 1867, and XV of 1870) in which the law on the subject was now contained.

CIVIL COURTS BILL.

The Hon'ble MR. COCKERELL moved for leave to introduce a Bill to consolidate the laws relating to the Civil Courts in Bengal. He said that the consolidation of the law relating to the Civil Courts subordinate to the High Courts in lower Bengal and the North-Western Provinces was only partially effected by Act XVI of 1868.

That Act dealt only with the Courts of Principal Sadr Amíns, Sadr Amíns and Munsifs, in fact with all the District Civil Courts, except the District Judge's Court which was left untouched.

The law regarding the chief District (or zila) Courts was spread over the unrepealed fragments of about six Bengal Regulations and a single Act (L of 1860).

The Bombay Presidency, the Panjáb, and the various other territorial divisions of the Non-Regulation Provinces subject to a distinct Local Government had each their separate 'Courts Act' embracing the entire law respecting the constitution and jurisdiction of the Civil Courts within such Presidency or Division; and it had been proposed in Committee to extend the provisions of the Madras "District Munsifs Bill" so as to include, and thus effect the consolidation of the law relating to, all the Civil Courts subordinate to the High Court in the Madras Presidency.

Hence for the sake of general uniformity, no less than for the further development of the scheme of consolidation of the Statutes, it had become necessary to gather together in one Act the now scattered fragments of the law regarding the constitution and jurisdiction of the Civil Courts in Bengal.

As it was well known that very considerable alterations in our present judicial system have been proposed and had undergone much discussion, it seemed fit that he should state here that whatever stage the various questions therein raised might have reached in the deliberation of the Government, they were as yet far from ripe for legislative action, and no such changes were included in the amendments contemplated by the Bill. Those amendments were for the most part of an unimportant character, and chiefly confined to the rectification of omissions in Act XVI of 1868, touching the jurisdiction of subordinate Judges and Munsifs.

In short the aim and object of the Bill, which he asked leave to introduce, were simply to place the law regarding the Civil Courts in Bengal in as compact as the law on this subject already was, or very shortly would be, in respect of all other parts of the Empire.

WHITLEY STOKES,

Secy. to the Council of the Govr. Genl. for making Laws and Regulations.

SIMLA;
The 23rd Sept. 1870.

No. 38 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, OCTOBER 1, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

Non-Subscribers to the GAZETTE *may receive the* SUPPLEMENT *separately on a payment of six Rupees per annum if delivered in Calcutta, or nine Rupees four annas if sent by Post.*

No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

PLAN FOR DESPATCH OF COVERS TO THE ADDRESS OF OFFICERS ACCOMPANYING THE VICEROY ON TOUR.

From F. R. HOGG, ESQ., Officiating Deputy Director General of the Post Office of India, to the Private Secretary to His Excellency the VICEROY and GOVERNOR GENERAL of India,—No. 654, dated Simla, the 12th May 1870.

ON occasions of His Excellency the Governor General proceeding on tour, it is customary for your Office to forward to my Office a tour list with the names of those who accompany His Excellency, with instructions to regulate thereby the transmission of covers by Post. The redirection of covers at a Post Office other than that of the original address involves great trouble, and cannot practically be fully carried out. It has been found also that considerable inconvenience is caused by the redirection of covers in accordance with your instructions, but which, nevertheless, were not intended for redirection by those who posted them.

2. For instance, in the tour list received with your communication dated 26th March, "Major-General H. W. Norman, C. B., Secretary to Government, Military Department," was mentioned as one of the party, and yet great inconvenience was caused by the transmission to His Excellency's Camp of a number of covers addressed to the Secretary to the Government of India in the Military Department, Calcutta or Simla, which were intended for General Norman's Office, and not for himself.

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From MAJOR O. T. BURNE, Private Secretary to the Viceroy, to the Officiating Deputy Director General of the Post Office of India,—dated Simla, the 18th May 1870.

IN reply to your letter of the 12th instant, I have the honor to say that His Excellency the Viceroy approves of the plan you suggest for the transmission of letters during future tours as an experimental measure.

FEMALE INFANTICIDE IN INDIA.

Minute by SIR D. F. MCLEOD, C.B., K.C.S.I., *late Lieutenant-Governor of the Punjab, on the Suppression of Infanticide.*

ON the 9th April 1867 a letter was addressed to the Secretary of the Lahore Anjuman (or Literary Society), suggesting that essays on the above subject should be invited by that body, and offering, on behalf of the Punjab Government, the following rewards :—

		Rs.
1.—For the best essay, if deemed worthy of the reward	...	500
2.—For the second best, on the same condition	...	200
3.—For any meritorious essay, not gaining either of the above prizes, an honorarium from	... Rs. 25 to	100

It was at the same time pointed out in the above letter that the idea prevalent amongst some classes, especially of Rájputs, that it is honorable and necessary to marry a daughter to a male of a superior caste or tribe, and humiliating or inadmissible to marry her into the family of an inferior, is, in my opinion, a fertile cause of the prevalence of this crime, so that it seems very desirable to urge on the classes entertaining this idea the expediency of resorting to equal marriages.

The first essay that came under our cognizance, in consequence of its having been sent to me direct, with a letter dated 15th June 1868, was one by Mardán Ally Khan, formerly an official of the Punjab, but latterly in the service of the Maharaja of Márwár (Jodhpur). Of this essay the Mír Munshí, Pandit Moti Lál, was asked to write a *resumé*, which will be found in the file. But, in addition to this, having been requested to record his opinion on the merits of the production, he gave in, on the 23rd December 1868, a very elaborate paper treating of the whole subject in connection with the measures which it is, in his opinion, expedient for the British Government to adopt.

Subsequently, by a docket and demi-official letter dated 27th February 1869, the President of the Anjuman submitted, with a Table of Contents, an essay by Moulavi Muhammad Husain, Assistant Professor of Arabic in the Lahore Government College, which he stated to be, in the opinion of the Anjuman, by far the ablest and best of numerous competitive essays which had been given in. No action, unfortunately, was taken on this communication, although the author himself, on the 18th September 1869, sent in a reminder

on the subject, until the end of last month, when, being anxious if possible to dispose of the matter before making over charge, I requested Pandit Moti Lál to record at once an opinion on the above essay likewise.

He was, however, on his way up to Murree from Lahore at the time, and did not receive my requisition, in consequence, until his arrival here. But on the 5th current he gave in a memorandum intimating that he had read the essay in question before writing his paper of the 23rd December 1868, and had fully considered it in that paper, to which he had nothing to add. In this memorandum he pointed out that the essay, though no doubt drawn up with much labor, contained, in fact, no novel suggestions, while the proposals made by either this writer or Mardán Ally are not such as he could himself approve or recommend. Having been thus prevented from fulfilling my intention of disposing of the case, I must now leave it to be disposed of by my successor; but, as the rewards were originally offered by my desire, it seems right that I should leave my opinion on record.

Both the Vernacular essays which have been submitted to the Punjab Government contain, in fact, but little beyond an advocacy of the persuasive measures heretofore adopted by Government at different times, or of others analogous to them; and, although neither of them is likely, in my opinion, to secure any very practical results, both are well-intentioned and commendable—that by Muhammad Husain, in particular, being drawn up with much ability and apparent earnestness. It is worthy of remark that no essay by a Hindu has been spontaneously submitted to us, though possibly such may have been submitted to the Anjuman. As the crime of female infanticide is confined, or nearly confined, to Hindus, it might reasonably have been expected that more of indignation against its perpetrators would have been felt by good men of that persuasion than by others, and that some of these would have been induced, from this feeling, if not from a desire to compete for the prizes offered, to come forward and lend a helping hand towards bringing the commission of the crime to an end. Such has not, however, proved to be the case.

Pandit Moti Lál's paper is of a very different character from either of the foregoing, and is, in my opinion, a very able document, as well as singularly out-spoken. It appears to me to have a very special interest, as being the production of a Hindu gentleman of liberal views, who thoroughly understands and appreciates our aims, yet unhesitatingly asserts that our policy in this matter has been mistaken and ineffectual, if not positively injurious, and urges in forcible and earnest terms the necessity for its entire reversal. His paper, it is to be observed, was written before the recent legislation on the subject, the tenor of which, so far as it goes, appears to be entirely in accordance with his views.

He points out that it is a great mistake in Government to introduce any social element into this question, both because it is not in a position to deal effectively with social considerations, and because these considerations affect, not only the comparatively small section of the community who are guilty of the commission of this crime, but those also who regard it with abhorrence. He urges that all efforts to check the commission of the crime by advice or conciliatory measures have for the most part, failed, while, by adopting such, Government has appeared to admit that there is some validity in the pleas urged by those who practice the crime, and has somewhat lowered itself in public estimation by ostentatiously enjoining the adoption of measures which it was not prepared to enforce when its counsels were disregarded; and hence he draws the conclusion that it is fully time that coercive and other administrative measures of a decided character were resorted to, and that these alone can secure the end in view.

He refers to the various recommendations that have been made from time to time, such as—

(1) Prohibition of early marriages;
(2) Improvement in treatment of brides by their father and mother-in-law;
(3) Remarriage of widows;
(4) Prohibition of polygamy;
(5) Education of females;
(6) Payment by Government of marriage expenses;
(7) Giving medals to those who preserve their daughters;
(8) Rewarding those who aid us in this matter;
(9) Excluding from Durbars, &c., those who withhold aid or countenance infanticide;
(10) Sending Pandits and others about to persuade the people or European Officers to convey complimentary messages;

all of which he considers to be more or less unsuitable for this particular purpose—some as interfering authoritatively with social usages cherished by the well-disposed amongst the people; others as compromising Government and putting it to needless expense; while those measures of which the desirableness cannot be doubted would be too slow in their operation to justify our waiting until they had taken effect. In short, to use the Pandit's own words, we make a great mistake in "working from cause to effect, instead of from effect to cause"—meaning that if we deal vigorously with the crime itself, whatever may be its cause, the promoters of it will themselves soon find a means of correcting those usages or customs which we at present regard as leading to its commission.

He observes that the great bulk of the people are entirely with us in this matter,—regarding the crime with horror; and that those who practise it are a small minority, wholly unworthy of being treated with any consideration. He considers it quite an error to suppose, as some do, that mothers amongst the latter are opposed to the practice, as it could not possibly exist without their willing countenance and coöperation, and he regards "pride of race," which many consider a chief promoting cause, to be unsuitable for us to deal with in that sense, as it is an entirely false pride, which we should not recognize in any form. This view of the matter is opposed to that expressed by me in the letter to the Anjuman; but I believe the Pandit to be right, on the whole; though, doubtless, Government will do well to treat those classes amongst whom the crime is not practised with an amount of honor and respect not to be extended to those who tolerate it.

The remedies proposed by the Pandit for adoption by Government to enable it to bring the full rigour of the law to bear upon this detestable crime, are the following:—

(1.)—As regards suspected villages, that the services of the wives of headmen and patwáries be secured by half yearly presents for watching expectant mothers in suspected families, being present at confinements, visiting daily for a time where the child born is a female, and recording the occurrence in the patwári's diary: midwives being at the same time bound, under heavy recognizances, not to serve on any such occasion without summoning one of the above women to accompany her.

(2.)—That in every suspected town of considerable size a Sub-Assistant Surgeon, a European midwife, and a strong Police guard be stationed, the Native midwives being bound under recognizances, as above, not to serve in suspected families without the attendance of the European one, by whom, on the birth of a female child, a report shall immediately be sent through a Police Sergeant to the Sub-Assistant Surgeon, until whose attendance and examination

of the child the midwives shall on no account leave the premises,—the surveillance of such child being continued for some days, and a *post mortem* examination held immediately in the event of its suddenly dying.

(3.)—That a tax be levied on all suspected families to meet the outlay incurred in carrying out the measures proposed; there being no reason, in the Pandit's opinion, to apprehend any difficulty in determining what families may be justly suspected, as mutual jealousies will speedily admit of the truth being elicited in this matter so soon as the tax is imposed.

(4.)—That a British Officer of experience be specially deputed to visit all suspected localities, to obtain confidential opinions, to collect and collate information on all points relating to this subject, and furnish reports for the consideration and orders of Government.

This last measure has heretofore been suggested by the Secretary, and all of the Pandit's proposals appear to me to be deserving of consideration when determining the arrangements most suitable for carrying the recent Act into effect. But I very much doubt the practicability of having a Sub-Assistant Surgeon located in each suspected town, and still more so as respects locating a European midwife, as respectable persons of this class must be most difficult to procure.

To advert, in conclusion, to the point with reference to which chiefly this memorandum has been written, *viz.*, the awarding of prizes, it will be seen from the foregoing remarks that I consider Pandit Moti Lál's paper to be beyond all comparison the best of all that have been given in; and I think, accordingly, that, although it was written by order, the first prize should be awarded to him in such form as may be deemed most appropriate; to the second prize I think Moulavi Muhammad Husain has the best claim; and an honorarium might, perhaps, be awarded to Mardán Ally Khan.

I should be glad also to see the Pandit's paper published, for I see that measures similar to those which he condemns are contemplated or in progress elsewhere; and if his views be correct, it will be useful to make them known. I would, however, in this case, ask him to revise it, and to omit or modify any needlessly harsh expressions it may contain.

D. F. McLEOD.

Murree, the 22nd June 1870.

Memorandum on Female Infanticide by PANDIT MOTI LAL, KATHJU, *Extra Assistant Commissioner, and* MIR MUNSHI, *Punjab Secretariat.*

I HAVE given separately an abstract of Mardán Ali Khan's essay.

I here beg to record my views on the subject in obedience to the orders of His Honor.

It is stated in the essay that wherever the crime is perpetrated, it is dictated by the heartless cruelty of the men, and is not approved by the women.

This is true to a certain extent only, though it is an assertion which would be acquiesced in by many, inasmuch as it seems quite natural that women should not be willing instruments for the extermination of their own sex, especially as they are the softer sex, and in many respects more amenable to the softer feelings than men. But I am sorry to express my belief that among the classes which practise this most atrocious crime, the softer sex are as much parties to the deed, if not more, than their sterner accomplices. In the first place, it is evident that women must be the first to announce to their male relatives the sex of the child that is born, and are in almost all cases the parties who accomplish the horrible deed. It is, therefore, difficult to understand how,

if women did not, to some extent at least, approve of the deed, they announce readily the sex of the newly-born child, certain, as they must be, of the fate of the infant which must immediately follow the announcement, more especially if such announcement were delayed, there would be a great chance of the life of the child being spared; for it cannot be denied that the feeling of compunction is inoperative, if at any time, immediately at the moment of the birth of the child, and the natural instinct asserts its sway if the perpetration of the deed is delayed. We find, accordingly, that as a rule the deed is perpetrated immediately after birth.

Those who have observed even superficially the aspect of Native society cannot have failed to notice the great influence which the women exercise in opposition to their male relatives. I need only adduce two well known facts to illustrate this.

In the Punjab it is a common practice with women to bathe in a state of nudity in public; and who has not met female processions in the streets of large cities, composed of most respectable women, singing the most obscene songs which any man would be ashamed to rehearse in public? If the last-mentioned practice has disappeared to a considerable extent, its extinction is due to certain provisions of the Indian Penal Code. But the Code has not penetrated into private houses where mothers, daughters, sisters, and wives still indulge in the use of the most obscene and shameful songs and jokes in the presence of their sons, fathers, brothers, and husbands; and there is no hope that the custom will die out at any early period. The Punjabee men admit, to their shame, that they are powerless to wean their women from such practices, and they speak the truth. If in matters like these the women are so wayward, and the men so utterly helpless, if in matters, I say, which bring disgrace on the women and redound to the dishonor and shame of their male relatives, the women, who cannot plead a single desirable object to be gained as their excuse, can assert their supremacy, and triumph over all opposition, is it reasonable to suppose that the atrocious and most abominable crime of female infanticide could have existed for a day if the women had set their determined faces against it? In my humble opinion it is not.

The probability seems to be, that the man, or men, who first perpetrated this diabolical crime forcibly crushed down all opposition on the part of their female relatives. But women have more imagination than men, and are especially obnoxious to the influence of gloomy pictures of the future. Doubtless the evils which were alleged to follow the preservation of female children were depicted to them in the most vivid colors, and again exaggerated by their own imagination; and impressions formed by them have been retained with a tenacity peculiar to womankind, and led them to act against their own instinct.

As regards the causes which lead to the perpetration of this crime, these are said to be the following, *viz*:—

1*st*.—Pride of race.

2*nd*.—The heavy expenses attending the marriages of daughters.

I think it is not correct to say that pride of race is the cause which leads to the destruction of female children, because, if this were so, there should never have been a time when female children were preserved in the families where they are now killed; whereas, by all accounts, the practice, wherever it originated, was adopted in consequence of such pride having been injured. I am not making any nice distinction of language; but what I mean to shew by this distinction is, that pride of race, as such, *per se* does not repudiate alliances of this nature; it was only when such alliances injured such pride that the unhappy sufferers, in a moment of frenzy, and the dupes of an unfortunate hallucination, instead of taking proper measures to protect themselves from such humiliation, determined to stop up the source from which such injuries might be expected, and decided to destroy their female offspring. And

happily this was the case with a few families only, which were influenced by a morbid sensibility. It is well known that even the proud Rajputs of Rajputana preserved their daughters, and in some cases so far yielded to the strong influences of circumstances brought to bear on them, that Rajput sovereigns under certain circumstances gave their daughters in marriage to the Mahomedan Emperors of India—aliens to them in race, country, and religion. The giving of daughters in marriage to men of their own tribes was not considered dishonorable by the majority of Rajput families of acknowledged rank. The same is the case now. Not all the Rajput families, nor all the Khatri tribes, nor even all the families composing any particular sections of tribes, destroy their daughters. This false pride of race, then, influences a small portion only of certain tribes, into whose families it found admission by the mad caprice of some depraved mind, and the practice has since been handed down as a custom "more honored in the breach than the observance"—that curse of the people of India in many respects. People in these families now practise the crime because their forefathers did so, and for no other reason.

I am so particular on this point, because the conciliatory measures taken by Government in this matter seem to have left an impression on the people who are addicted to this crime that the Government admit in some degree, howsoever slight, the reasonableness or the validity of their plea, or, at any rate, respect their feelings; for otherwise, instead of merely *advising* them to ignore such pride, and *inviting* them in mutual consultation to suggest and carry out such measures as might remove all inducement to destroy their female children, the Government should by this time have themselves taken the most rigorous and effectual measures for the complete extinction of the crime.

The expenses attending the marriages of daughters are pleaded as an excuse for the destruction of female children only by those who practise the crime. The anticipation of such expenditure is not a *cause*, in fact. There is no Hindu family of respectability where heavy expenditure is not incurred on occasions of marriages of daughters, or where the desire does not exist of incurring a considerable expenditure on such occasions. I think the desire is not only laudable, as indicative of a wish to secure respect for the daugther on the part of the family of her husband, but the feeling, I think, is natural. It is admitted on all hands that the practice of demanding and receiving presents from the family of the bridegroom for the hand of the bride, on the part of the parents of the latter, is mean and dishonorable. The reverse of this practice, or giving suitable presents on giving a daughter in marriage, is, on the other hand, honorable. In the great majority of families of all classes, the birth of a daughter leads the parents to habits of economy, to lay by a sufficient amount to defray the expenses of her marriage; and among certain Hindu tribes, if not among all, the daughter performs certain funeral ceremonies after the death of her parents, which cannot be performed by the son. In such tribes the existence of a daughter is much desired.

But, be this as it may, it is by no means pretended that it is necessary in every case, on the occasion of the marriage of a daughter, to incur expenses out of all proportion to the means of the parents. In this matter, as in every other, improvident parents must find themselves in difficulty when the time comes to incur the expenditure. But, even then, the general recognized custom of the country and the universal feeling of the people tends to relieve the distress. It is a well known fact that among the Natives loans are easily obtainable, and on the most favorable terms, when required to defray the expenses of the marriage of a daughter or sister: friends are extremely accommodating in such cases, both as regards the granting of loans and demanding their repayment. These facts are mentioned to shew what loop-holes exist to escape from difficulty if the worst comes to the worst; but, in point of fact, no such difficulties need exist. The Khatris of this Province are, as a rule, a trading class, and the grasping character of the business they do is well known. Most of them should be able to defray the comparatively small expenditure which they

need incur; and, as a rule, they are so. But, even admitting the inability of parents from want of means to pay the expenses they are required to incur, the proper remedy is that the amount of such expenses should be reduced. On this point, I venture to think the interference of Government, in the manner it has been heretofore exercised, is more injurious than beneficial. The very fact of the Government *advising* the people to reduce such expenses without any provision being authoritatively made to enforce the reduction (the consequence of which is, that no practical result is obtained), produces apathy, and, so far as the question of female infanticide is concerned, taken in connection with the large amount of expenses incurred, is positively injurious. People are impressed with idea—and apparently rightly too—that the Government, among other causes, admits heavy expenditure on occasions of marriages as one of the causes leading to female infanticide; but the Government does not think it expedient to reduce such expenses authoritatively, but only suggests the measure to the people themselves as a desirable one, leaving them to adopt it of their own accord. The impression gains ground, therefore, that, seeing the Government recognizes heavy expenditure as one of the causes which lead to the destruction of female children, yet does not authoritatively remove that cause, it does not care to see the crime extinguished at once. I should not be understood to mean that Government should authoritatively direct the reduction of marriage expenses. What I mean to say is, that Government ought clearly and plainly to ignore this cause of female infanticide, and to make no suggestions for the reduction of marriage expenses as a remedy against this crime.

It will be seen from the foregoing that I do not admit pride of race or heavy expenditure on occasions of marriages to be causes (in the sense in which a cause produces an effect, or an effect follows a cause) of female infanticide. My argument in the abstract is this, that the particular families or tribes of a class which practise the crime are not placed, *quoad* these causes, in a worse position than families or tribes of the same class, or the great mass of the population, who recoil from such crime with horror, yea, have never allowed such a thought to enter their minds. The true cause lies in the moral turpitude and truculence of those families which practise the crime, and the most vigorous measures should be taken in respect to those families and tribes to eradicate this most atrocious practice.

I shall in the sequel propose what appear to me to be the most effectual preventive measures, considering the magnitude and heinousness of the offence. In the meantime, I proceed to discuss the several remedies which have been suggested by Mardán Ali Khan, as well as certain others which I have heard proposed by other parties.

It is proposed to bind Lambardárs and other head men of villages and towns, by agreement, to report cases of infanticide, and to watch closely the families known to practise, or suspected of practising, this crime. It is also suggested that the births of female children and cases of female infanticide should be recorded in the Patwári's diary. It is further suggested that persons killing their female children should, *if possible*, be excommunicated by their tribesmen.

These suggestions are not new, and the last seems to me objectionable on principle. I would introduce no social element into any administrative measures which the Government may deem necessary or expedient to adopt for the purpose of eradicating this crime. I would make no *suggestions* to the people and leave it to their choice to carry them out or not: whatever measure the Government may deem proper to adopt, it is, I think, essential that it should be prepared to enforce it; and I also object, on the principle of equity, to subject innocent Lambardárs, Patwáris and Panches to extra responsibilities on account of professional murderers (for female infanticides are no better than these) with whom they have no sympathy, and over whom they have no control. The measure can, however, be justified as an administrative one on the part of

the Government, and may be carried out; but I think they should be provided with the means of watching suspected families, and that some inducement should be held out to them to do the work assigned to them properly and cheerfully, so that, if an extra responsibility is imposed on them, the labor may, as it were, be one of love, and successful so far as circumstances may permit.

With this view, I think the female members of the family of the Lambardár and Patwári should be required to watch every expectant mother in a suspected family, and one such member of the family of the Lambardár and Patwári each should be invariably present at the time of confinement. The midwife should be bound by heavy recognizance on no account to serve on such occasions without summoning the above-mentioned women to accompany her. Should a female child be born alive, the fact to be recorded at once in the Patwári's diary, and reported forthwith to the Police, and entered in the Police diary. The child should be then visited daily by the Lambardár's and Patwári's women during the first year of her existence. A present, say of Rs. 10 or Rs. 20 each, should be given in two half yearly instalments to these women, to be defrayed from the chungi or local funds. No watch after birth to be kept in the case of the birth of a male child, and no presents to be given in that case.

The suggestion to exclude persons suspected of practising infanticide from Darbárs and Government service, as well as from participation in any public institutions, is a proper one, but perhaps hardly necessary to make as too obvious; so likewise is the suggestion to shew consideration to those who aid the Government in its efforts to suppress this crime; only employment in the service of Government must also in a great measure depend on other considerations.

I do not believe that any persons found guilty of concealing or abetting this crime are at present exempted from punishment. Any suggestion to the effect that such persons should be punished is hardly necessary.

As regards fixing a scale of marriage expenses, I have said above that the interference of Government would be injurious: Government cannot order any reductions to be made, authoritatively, and could not afford to see its suggestions treated with indifference, or positively disregarded.

I object strongly to Government affording pecuniary aid from any public funds whatever—Chungi or Láwáris Funds—to parents of girls to enable them to defray the expenses of the marriages of girls on an extravagant scale (extravagant, because beyond the means of the parents). There are such heavy demands already on the chungi funds that it would simply be impossible for those funds to bear the additional charge (which, I am afraid, if once admitted, would increase to a most inconvenient size) without additional taxation; and I question the justice of imposing heavy taxes on the unoffending and well-behaved portion of the community to aid a set of the most unnatural criminals who entertain a false idea of their honor, and are dead to the most natural feeling, and war against their own instinct. And, after all, the sense of honor that would induce the parents of a girl to beg and accept charity to defray the extravagant expenses of her marriage, rather than marry her honorably, though less ostentatiously, appears to me to be rather curious, and certainly one which does not deserve to be accommodated on the part of an enlightened Government like our own.

But the strongest objection of all is, that Government, by consenting to give such aid, admits its necessity, and therefore the reasonableness of the notion that heavy expenses on occasions of marriages of girls are indispensable, even though the parents may, in order to obtain the means of defraying them, be obliged to undergo the humiliation of soliciting charity—strange infatuation, this, and unhappy delusion under which the people are laboring;—and once the necessity for affording such aid is admitted, the Government will find itself involved in peculiar difficulty and embarrassment. I will defy any advocate of

such a measure to gainsay that the Government would be deluged with applications for assistance which it will not have the means of complying with; and the Government will compromise its position, and thus a door will be opened, and apparently with some reason, for a good excuse on the part of the people. If private associations, like the Kangra Social Progress Association, should spring up in the Province to afford pecuniary aid, of course the Government has nothing to say to them; but the Government themselves undertaking to provide such aid is out of the question.

I have myself proposed above to remunerate the wives of Lambardárs and Patwáris of villages for their trouble in watching expected births, and the subsequent progress of the existence of a female child (the expense being defrayed from chungi or local funds); but that proposal has reference to the remuneration of persons employed by the Government as its agents to carry out an administrative measure of its own.

The suggestion to employ Pandits and Brahmins, who should itinerate from village to village, and explain the heinousness of the crime, is one which cannot be entertained for a moment. The Government cannot consent to take any share in the religious instruction of the people, and cannot agree to apply the proceeds from the chungi collections to any religious purpose. But, even disregarding this objection, for the sake of argument, there is no necessity for such preaching. It is not pretended by any infanticide that the act of killing their female children is virtuous: each and all acknowledge and confess the sinfulness of the deed, but excuse it by social and pecuniary considerations.

The allusion to the transmigration of souls and other tenets of the religion of the Hindu is simply preposterous.

I have thus far canvassed the points mooted in Mardán Ally Khan's essay. Several essays have, however, also been written by others for the Lahore Anjuman, of which I have read the one which I believe to be the best.

Before discussing the views set forth in that essay, I may premise that they are chiefly identical with those of Mardán Ally Khan; indeed, it appears to me that all who have written on the subject have taken their cue from the apparent action of the Government in the matter. All appear to believe that the Government is prepared to proceed only so far as it has gone already, and will not advance beyond the line which it has reached; accordingly, it will be observed that they all follow a beaten track, enlarging on the measures which have existed ever since the attention of the Government was first drawn to the existence of the crime; or, if they have suggested any new measures, they are of a nature chiefly conciliatory, or which cannot produce any results within any reasonable time, and are therefore useless as remedies. Some few of the measures seem to me to be positively injurious; all are of a nature which leaves their working entirely in the hands of the people and places the Government in a powerless attitude, entirely dependent on the action of the people themselves—a most unenviable situation, and one unworthy of a powerful and humane Government.

Passing over such suggestions as refer to the reduction of extravagant expenses, and the desirability of foregoing considerations of pride of race, which suggestions I have already discussed, I find that the following are suggested as important remedial measures, *viz.*:—

1*st.*—Prohibition of early marriages.
2*nd.*—Improvement in the treatment of daughters-in-law on the part of mothers and fathers-in-law, and other relatives of the wife's husband.
3*rd.*—Remarriage of widows.
4*th.*—Prohibition of polygamy.
5*th.*—Female education.

I propose to take up these suggestions *seriatim*.

And first, prohibition of early marriages.—This is one of those measures which the Government disclaims (and rightly so) the right or the desire of imposing on the people; and, in fact, the matter is one which no Government could possibly meddle with, with any prospect of success or advantage, in opposition to the wishes or prejudices of its subjects. Moreover, early marriages are enjoined by the religion of the people, and, as such, the institution is one which it is opposed to the professed and deliberate policy of the Government to interfere with. It must, therefore, be left to the people themselves to abolish the custom if they deem it desirable to do so. But, in the present state of Native society, the prospect of a reform in this matter is, to say the least, very distant; indeed, I hope the day is far nearer at hand when female infanticide will be reckoned as a thing of the past, than the time when early marriages will have been abandoned. And, after all, early marriages in this country are not without some advantages; and if bad treatment on the part of the husband's family (see the second remedy proposed) means anything, such marriages are extremely desirable. It is during the childhood of the daughter-in-law that the husband's mother or father have the greatest reason and inclination to treat her with kindness, and the probability is greatest at that age of a permanent affection springing up between these relatives.

The real objection against early marriages seems to be based on the comparatively greater proportion of mortality among children: the girl, in case of the death of the male child, being in her childhood, according to the custom of the country, consigned to widowhood for her life, without the chance of a remarriage. The affectionate parents, anxious to save their daughters from a *possible* calamity of this nature, destroy them when they are born. This is, as the Native proverb says, "taking off one's shoes before coming in sight of the water to be crossed," or to use stronger language, betaking to lamentations before death. Such cases of widowhood, when they do occur, are greatly to be deplored. But the prospect is not gloomy on one side alone, and death does not aim his shafts exclusively at the male children. I observe, in the Annual Administration Report of the Punjab Government for the year 1867-68, that in a population of 15,790,612, the ratio of deaths among females between the age of one year and 14 was for the year ·017, and the ratio among males for the same age, and during the same period, was ·020—the preponderance on the side of the males being only ·003. This includes, of course, all classes, *i. e.*, the female children of the majority of the population, who are not given to female infanticide. No case whatever is, therefore, made out to justify the suggestion that early marriages should be prohibited with the view of preventing the destruction of female children, whatever may be the merits of the custom, taken by itself, or as regards its bearings in other respects.

As regards the treatment received by a daughter-in-law at the hands of the mother-in-law, it cannot be pretended that the treatment received is universally bad; and certainly the possible apprehension of bad treatment cannot constitute a sufficient incentive for the destruction of female children. And furthermore, it is not apparent how any action of the Government can penetrate into the labyrinth of the varied feelings of private families. In fine, the point is one not worthy of much discussion. It might, however, be added that in the Punjab the evil complained of is one which exists more in the imagination of those who are prone to gloomy and melancholy forebodings than in reality; for it is the universal custom in this Province, among the Hindus at any rate, that the sons, with their wives, are separated by their parents on reaching the age of puberty.

The most important measure suggested is the remarriage of widows. This subject is very vast, and no right-thinking man would raise his voice against the desirability of this measure being adopted. But the Native society of this part of India is not yet prepared for it, and I believe that no suggestion that has been made for the prevention of female infanticide would be more suicidal or likely to lead to more dangerous and mischievous consequences than this.

Such a suggestion would make a thousand enemies of one: it would be, as it were, reinforcing the thin and broken ranks of female infanticides by desertions from our own. The great mass of the population, whose feelings are now decidedly hostile to the small body of female infanticides, but even more so to the remarriage of widows, would assuredly go over to the enemy and swell their ranks on the first glimmering of the suspicion that the preservation of female children would sooner or later usher in the remarriage of widows; seeing that the cure suggested by the party which desires to extinguish the crime of female infanticide against the evils of widowhood, the possible apprehension of which induces the destruction of female children, was their remarriage. In this case the remedy would be certainly regarded as worse than the disease.

The suggestion regarding polygamy may be dismissed by the remark that it does not prevail to any extent among the poorer classes; that, wherever it does exist, the evil consequences of it do not affect exclusively the classes which are addicted to the crime of female infanticide; that it is not known to lead to such crime among the Mahomedans; and lastly, it is not one with which the Government can interfere authoritatively, and must be left to be dealt with by the people themselves, who are not prepared to abandon it.

The next suggestion is the introduction and extension of female education. This question is many-sided; but this is not the place to discuss its bearings on the people of this country. Regarding its influence on the crime of female infanticide, there can be but one opinion, and there is no doubt that it will operate in the fullness of time; but I believe no education is needed to convince a mother of the enormity of the sin of taking the life of her own daughter. If it be said that education is needed, not to reveal to her the enormity of the crime, but to impress upon her the meretricious nature of the motives which are paraded before her eyes as prompters of the deed, I reply that we cannot wait for the time when female education shall bear such fruit. The most sanguine advocates of female education will admit that it must require several decades to expand to any desirable dimensions. In the meantime, shall we soothe our consciences by distant hope? Shall we console ourselves with the bare reflection that we have initiated a measure which, though ineffectual as regards several generations to come, shall ultimately eradicate the crime, and thus expiate the blood which must be shed in the *interim*?

The only other suggestions which I have heard made are that, on the birth of a female child in a suspected family, an European officer should visit the family and offer congratulations. This would be a harmless measure, at the same time hardly any good will result therefrom.

The next suggestion is that female children born in suspected families, should be presented with a medal by the Government, with the bust of our Queen impressed thereon, and regarded *par excellence* as daughters of Her Majesty. I think there are grave objections to this suggestion being carried into effect. If the measure should lead to the preservation of the lives of the girls (which, however, I very much doubt), the Government will be expected by the parents to pay the expense of their marriages, and on a comparatively extravagant scale, if not, indeed, to provide for their maintenance. And, moreover, I object on principle to the Government descending so low to flatter the fancy and caprice of its misguided subjects.

Having now discussed the measures which have been heretofore adopted or proposed for the suppression of this most atrocious crime, I proceed now to propose the measures which, in my humble opinion, appear to be worthy of adoption, and likely to prove most successful.

In making my proposals, I assume that the crime still prevails in the Punjab to a considerable extent; that the Government is determined to root

it out with all its power, only stopping short at any measures which should be absolutely pernicious; and, lastly, that so long as a single female child is murdered by her unnatural parents in British territory, owing to the want of effectual measures which the Government could fairly adopt against the perpetration of the crime, the Government will regard the circumstances as a reproach on its administration.

It is evident that the measures heretofore adopted by the Government have not proved thoroughly effectual, and the reason is doubtless that undue consideration has been shown to the feelings of a class of people against whom the most rigorous measures ought to be adopted as a rule. Nearly eighteen years of forbearance has been trifled with by these classes; conciliatory measures have been regarded as evidencing the implied admission on the part of the Government of circumstances extenuating the enormity of the offence; and the most wholesome advice of the most enlightened and humane Government that ever existed in the country has been disregarded, and the want of suitable action thereon excused by the trammels of social, tribal, and even religious institutions, in which the people profess themselves to be involved. But, as the motives of the Government have been misconstrued, as conciliation has proved unsuccessful, and advice has failed, it is high time for the Government to take administrative measures of its own, without reference to the feelings of the particular class against whom they are directed (a class of people, indeed, themselves heartless and devoid of the most natural feeling), but without, of course, inaugurating any measures involving unnecessary severity, which can under no circumstances be imputed to a Government like our own. It must be remembered that the feeling of the great mass of the population is decidedly against the infanticide classes, and that there is no apprehension of the public sympathy being roused in their favor if the Government confine its action to administrative measures alone, and avoid all discussion as regards the merits of social or tribal institutions. The latter concern the mass of the population, with which it is not necessary to meddle, and interference with which would serve no purpose. The Government have already in other cases adopted measures of this nature, without exciting the sympathy or arousing the fears of the great mass of the population, simply because a particular offending class only has been affected. As an instance, may be quoted the rule obtaining in Government gaols, where food is cooked in and served out to prisoners of all castes from a common cook-house, without reference to tribal distinctions or prejudices.

My idea, whatever it may be worth, is that, in dealing with female infanticide a great mistake has been committed in working from cause to effect, instead of from effect to cause; and the Government has found itself checkmated at every move. The action of the Government has heretofore been directed to the removal, in the first instance, of the real or fancied—or, at the best, professed—causes of the crime, in the reasonable and natural hope that the causes once removed, the effect would vanish. But the thousand and one difficulties which have during the course of eighteen years raised their heads were not realized when the movement was initiated, and experience has shown that those difficulties have proved insurmountable. I suggest now that the direction of action be reversed, that all attempts be directed chiefly and exclusively to prevent the perpetration of the crime, and if the efforts made should prove successful, as sure as day is ushered in by sunrise, the causes will one by one vanish of themselves. Once the female children are preserved, they must be married at the proper age; for, among Hindus especially, who compose the bulk of the population, and among whom, unhappily, the crime is chiefly prevalent, it is a sin and a reproach on the family to neglect to provide a suitable match for a female child or other relative; and, on the principle that necessity is the mother of invention, there can be no reasonable doubt that unreasonable prejudices will be discarded, and

sumptuary and other laws will be laid down by the people themselves to extricate themselves from the difficulties in which they will find themselves involved, and to facilitate the marriages of their children.

Then will the country through its breadth and length resound with the heartfelt gratitude of a reclaimed multitude; the Government will have achieved one of its greatest triumphs; and Providence will have been once more vindicated in placing a foreign nation in the country to rule over the destinies of a fifth part of the population of the world. This is no overdrawn picture, nor is the anticipation the phantasm or dream of a visionary. The consummation is within the grasp of the Government if it will only awake to the proper line of action, disregarding all sentimental objections, mindful of its irresistible power exerted in the most righteous of causes, and caring not to be hampered by a too far-sighted policy, which sometimes conjures up imaginary spectres of danger. Let our Government make a clean breast of it, and publish boldly to its subjects that it has determined to eradicate the crime with all its might, and that it has decided to carry out administrative measures for the purpose.

My proposals are these: let the Government appoint a European officer of standing and experience to visit all districts of the Province in which the crime is suspected to be prevalent, and obtain confidential opinions as to its extent, and collate all the information he may be able to collect for the information of the Government. The Government should then take measures for the suppression of the crime, according to the circumstances of each locality and the extent of the crime. In villages where the infanticide population is not large, the deputation of the Lambardárs' and Patwáris' wives, as I have already suggested ought to be sufficient for all purposes. But in large towns like Dera Bába Nának, Anandpur, Makhowál, and other similar places, which are the stronghold of Bedi and Sodhi fanaticism, I would recommend the following arrangement to be adopted:—

Let one or more European midwives be appointed, according to the requirements of the locality, to watch expectant mothers, and to accompany the Native midwife at the time of confinement, the Native midwives being bound under heavy penalties not to serve on such occasions without inviting the European midwife to accompany them. The birth of a female child to be reported at once by the Native midwife by direction of the European woman—or, perhaps better, by a Police officer not below the rank of a Sergeant, who should always accompany the European midwife on the occasion of her visits to the families—to the Sub-Assistant Surgeon, who should be specially located at the town for the purpose; and the Sub-Assistant Surgeon must forthwith proceed to the spot and examine the child immediately after birth, and afterwards as often as may be necessary. The European midwife should on no account leave the premises before the Sub-Assistant Surgeon has examined the child. In any case of sudden death, a *post mortem* examination should be made invariably, and the parents, both mother and father, awarded the severest punishment provided in the Indian Penal Code. A strong Police guard should be maintained in the town for the protection of European midwives. All expenses,—the salaries of the European midwives and the Sub-Assistant Surgeon, and the cost of the Police guard,—should be defrayed from the proceeds of a tax which should be levied on the suspected families. It may be asked, how is it to be determined what families practise the crime? I reply that, no sooner is the tax imposed than people will split on each other, and there should be no difficulty in ascertaining the true delinquents with tolerable accuracy. Even if an error is made, it will be on the safe side, so far as the interests of Government are concerned. But this is a matter of detail which will be best settled at the time and on the spot.

As regards the realization and incidence of the tax, I think there should be no difficulty in determining the rate and the mode of realizing it. In the case of families holding rent-free grants from the Government, a percentage

might be deducted and recovered along with the Government revenue. In the case of families not enjoying such grants, the rate might be fixed with reference to the amount of the license tax assessed on them.

I have suggested the imposition of a tax advisedly, because the loss of money will be felt by the people more than anything else. Fear of punishment alone will not be, as it has not been heretofore, an effectual deterrent; but when the people shall find their purses affected, they will see the folly of persisting in a conduct sure in all respects to involve them in difficulties; and common sense and instinctive affection for their offspring (the last having been heretofore inoperative) will awaken them to the idea that the money paid by them as a fine would be better applied in the preservation and marriages of their daughters.

It will be said, perhaps, that objections will be raised against an arrangement such as that I have proposed. I ask, who will be the objectors?—not the great mass of the population, who will see clearly that the measure is directed only against the class which has seriously offended the Government, outraged morality, and shed innocent blood—a class of people more degraded and depraved than the professional thugs, whose attacks are directed against the lives of strangers, and not of their own offspring. The objections, then, must proceed from the infanticides themselves; and what can the objections be?

Is their domestic privacy interfered with?—they have to thank themselves for it: the crime they practice is perpetrated in the secret apartments of their houses, which must be penetrated to divert their cowardly blows from the heads of their innocent and unoffending victims. Are they subjected to annoyance?—the pain is not keener than that caused by the mortal wound which they inflict on their helpless prey. Are their purses rifled?—the object is to reclaim them from sin, to make them honest members of society, to teach them a better mode of employing their money.

Let the Government carry out the measure boldly and fearlessly; let the Government only show its earnest and determined resolution to put a stop to the crime, and the task set before it is, I say, half accomplished. If the practical details I have suggested should not be approved, let officers of ability and experience propose more suitable arrangements; but any action which the Government may take must be founded on the basis that I have suggested: there is absolutely no other course to follow if the object which the Government has in view is to be gained. I am not carried away by warmth of feeling, nor am I blind to the apprehension that, when the system comes to be worked, there will occur some instances of severity and abuse of authority on the part of the subordinate agents of the Government; but the Government can adopt no measure in any department which shall not be open to such objection. For my part, I can honestly say that I have not used an argument which I do not believe to be sound, nor mentioned a fact as such which I do not believe to be true; and, having been called upon by His Honor to record my views on a subject of such vast importance, I have felt it my duty to state them freely, candidly, and honestly.

PANDIT MOTI LAL.

The 23rd December 1868.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

IRRIGATION OPERATIONS OF PUBL KHUREEF OF 1870-71 IN THE PUNJAB UP TO 31st July 1870.

Canal Division.	Water distributed during July.		Navigation Return Canal.		Land Irrigated (approximate).		Rain-fall.		Chief Crops (approximation).		Remarks.
	Full supply.	Depth in Canal at regulating gauge.	Principal items of Traffic.		Zillah.	Acres.	Average.	During month.	Names.	Area in acres.	
			Down.	Up.							
B. D. Canal. 1st Division ...	4·9	Actual throughout July. 3·25	.....	...	Goordaspoor ...	10,818	5·25	3·68	Cotton ...	7,805	201·54 cubic feet per second passed down the various escapes, being in excess of the demand for irrigation, 146·73 cubic feet per second discharged by the Boodlia Khera Escape. In comparison with the statement of irrigation up to a similar date of last year, we find the decrease on the Baree Doab Canal was 24,767 acres, and the increase on the Western Jumna Canal 11,149 acres. The reasons for the decrease on the Baree Doab Canal were given in last statement, and are not repeated here. The great increase of area irrigated by the Inundation Canals is principally due to the entry of the area irrigated in the Moolttan District, the return having been received from the Executive Engineer.
2nd Division, M. B. Lower ...	4·6	2·47	.....	...	Umritsur ...	13,203	1·36	...	Rice ...	15,326	
" Lahore Branch..	3·3	2·89	.....	...	Lahore ...	16,758	...	...	Sugarcane...	6,303	
									Others ...	11,345	
Total Baree Doab Canal ...	.....	.....	.....	...	.....	40,779	...	...	.....	40,779	
Western Jumna Canal. Kurnaul Division ...	4·33	2·04	157,193 bullies, kurries, planks, &c.	...	Umballa ...	1,989	13·3	16·5	Cotton ...	68,667	
Delhi " ...	4·4	3·60		...	Kurnaul ...	27,376	7·96	4·72	Rice ...	17,295	
Hansi " ...	8·8	7·50		...	Delhi ...	33,139	...	2·4	Sugarcane .	33,784	
" Bulla Head ...	8·4	7·50		...	Rohtuck ...	33,239	...	2·8	Others ...	7,445	
					Hissar ...	21,670	...	1·7			
					Jheend ...	9,709	...				
					Bikaneer ...	69	...				
Total Western Jumna Canal ...	.....	.....	157,193	...	.....	1,27,191	...	...	.....	127,191	
Inundation Canals. Upper Sutlej Division ...	.....	.....	.....	...	Lahore ...	5,000	...	...	Detail not obtainable for want of establishment	.....	
Lower Sutlej and Chenab ...	.....	.....	.....	...	Montgowry ...	45,000	...	1·66		.....	
Indus Canals ...	.....	.....	.....	...	Mooltan ...	1,54,480	1·73	*Nil*		.....	
					Dera Ghazee Khan	1,24,000	0·85	*Nil*			
Total Inundation Canals ...	.....	.....	.....	...	.....	3,28,480	...	...	.....	328,480	
Delhi and Goorgaon Works...	.....	.....	.....	...	.....	*Nil*	...	...	.....	*Nil*	
Total Delhi and Goorgaon Works ...	.....	.....	.....	...	.....	*Nil*	...	...	.....	*Nil*	
Grand Total ...	.....	.....	.....	...	.....	4,96,450	...	...	.....	496,450	

J. CROFTON, *Lieut.-Colonel, R.E.,*
Joint Secy. to the Govt., Punjab, P. W. D., Irrigation Branch.

MURREE;
the 5th September 1870.

TEMPORARY REDUCTION OF THE WATER-RATE IN ORISSA.

From COLONEL F. H. RUNDALL, R.E., Joint Secretary to the Government of Bengal in the Public Works Department, Irrigation Branch, to the Secretary to the Government of India, Public Works Department,—
No. 580 I, dated Fort William, the 5th September 1870.

THE advisability of reducing the water-rate in Orissa as a temporary measure has for some time forced itself on the attention of the Lieutenant-Governor, and having, after much consideration, come to the conclusion that it would be expedient to try the experiment during the present year, he authorized the Revenue Superintendent of Canals, Mr. Kirkwood, in the event of his previously ascertaining that such reduction would probably be followed by a large resort to irrigation, to inform the zemindars and cultivators that the Government would reduce the rate as a temporary measure to one Rupee per acre, independent of the description or number of crops that might be grown, but on the understanding that any estate or village desiring to avail itself of the low rate should engage to irrigate a certain definite proportion of its lands. The measure, I am desired to state, has been attended with considerable success, for Mr. Kirkwood, in a letter dated the 15th ultimo, reports as follows:—

"I have the honor to inform you that nearly the whole of the lands irrigable from the Taldundah, Machgong, and High Level Canals, and from the first five distributaries, Kendrapara Canal, have been leased. This area I estimate as follows:—

"Machgong and Taldundah	...	...	15,000 acres.
"High Level	...	...	25,000 "
"First five distributaries of Kendrapara		...	30,000 "
	Total	...	70,000 acres."

2. Since the above was written, further reports have been received stating that more than all the above-mentioned areas on the Kendrapara and High Level Canals have actually been fully supplied with water, and that probably all the lands embraced by the Taldundah Canal, as above stated, would likewise be abundantly irrigated. The area leased under the Kendrapara Canal is about one-third of the quantity of land commanded.

3. For all lands for which leases were not taken out by the 10th August, the Revenue Superintendent proposes to charge the old rate of Rs. 2-8 per acre, on the ground that, as the cultivators of such lands apparently intend to resort to the canal only for the salvation of their crops in the last extreme, there is no reason why the Government should forego the higher rate.

4. Mr. Kirkwood adds that "he has no doubt that this mode of proceeding will prove very salutary in showing the *late* irrigators that they, for the irrigation of a poor half spoilt crop, will have to pay Rs. 2-8, while they see their neighbours with magnificent crops only paying one Rupee, and he anticipates that such a feeling may, for the future, tend to make those who have any connection with lands commanded by the canals somewhat more prudent than they are at present."

5. The Lieutenant-Governor has approved of Mr. Kirkwood's suggestion.

6. The Commissioner of Orissa has likewise expressed himself to the effect that the one Rupee rate is for the present fair and proper, and recommends its continuance for all leases entered into for one year. He is confident that when the cultivators have once become convinced of the value, and have practical experience of the results of irrigation, there will be no difficulty in gradually raising the water-rate as the demand for water increases and its consequent market value is enhanced, and that by resorting to the reduced rate a commencement has been made which will show good and profitable results ultimately.

7. In the District of Midnapore I am to state that the water has been taken very freely since the commencement of the cultivating season, and it is estimated that about 30,000 acres have been irrigated from the Midnapore Canal.

8. The Lieutenant-Governor trusts that the above particulars will prove satisfactory to the Governor General in Council, and that his proceeding in authorizing a reduction of the water-rate will meet with approval. The Lieutenant-Governor has been waiting for the results of this measure before addressing the Government of India on the necessity of pushing on the Orissa works generally to completion. Every year brings reports of a failure of rain in one portion or another of that Province, and of a consequent loss of crops, which cannot but tend to have a depressing effect on the inhabitants generally. He will, however, reserve what he has to urge on this subject for a future communication, as he is desirous of laying the information contained in this letter before the Governor General in Council without further delay.

From COLONEL W. A. CROMMELIN, R.E., Officiating Secretary to the Government of India, Public Works Department, to the Joint Secretary to the Government of Bengal, Public Works Department, Irrigation Branch,—No. 395 I, dated Simla, the 27th September 1870.

IN reply to your letter No. 580 I, dated the 5th instant, I am directed to inform you that His Excellency the Governor General in Council approves of the action of His Honor the Lieutenant-Governor of Bengal in authorising the temporary reduction of the water-rate in Orissa to one Rupee per acre, and is highly gratified at the very promising symptoms which have appeared of the irrigation under the new canals in Cuttack and Midnapore being rapidly and largely extended.

2. I am to express a hope that the people, now that they will have seen the practical effect of a command of river water for their lands when the failure of the ordinary rains may deprive their crops of all chance of coming to full maturity, will gradually come to appreciate the advantage which a moderate payment will secure to them, and will ere long be willing to pay for the water in proportion to the cost of the undertaking.

3. It cannot be said that the rate now levied will be sufficient to cover the interest on the capital outlay and the maintenance charges; but if it can be shown that any deficiency on this account is likely to be made up by a progressive increase of water-rates and of receipts in future years, there will be no reason for dissatisfaction with the results.

4. At all events it is most gratifying that the works, so far as they have gone, appear really in this year to have performed so large a part in averting a repetition of the misfortunes of past years.

No. 39 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, OCTOBER 8, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

Non-Subscribers to the GAZETTE *may receive the* SUPPLEMENT *separately on a payment of six Rupees per annum if delivered in Calcutta, or nine Rupees four annas if sent by Post.*

No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

ANNUAL INTERNATIONAL EXHIBITIONS OF SELECT WORKS OF FINE AND INDUSTRIAL ART AND SCIENTIFIC INVENTIONS.

HER MAJESTY'S COMMISSIONERS FOR THE EXHIBITION OF 1851.

President:

THE DUKE OF BUCCLEUCH, K.G.
THE DUKE OF BUCKINGHAM AND CHANDOS.
THE EARL DE GREY AND RIPON, *or Lord President of the Council for the time being.*
THE EARL GRANVILLE, K.G.
THE EARL RUSSELL, K.G.
THE LORD PORTMAN.
THE LORD OVERSTONE.
GENERAL THE HON'BLE C. GREY.
THE RIGHT HON. W. E. GLADSTONE, M.P.
THE RIGHT HON. BENJAMIN DISRAELI, M.P.
THE RIGHT HON. ROBERT LOWE, M.P.
THE RIGHT HON. SIR S. H. NORTHCOTE, *Bt.*, C.B., M.P.
THE RIGHT HON. H. A. BRUCE, M.P.
THE RIGHT HON. JOHN BRIGHT, M.P., *or President of the Board of Trade for the time being.*
THE RIGHT HON. W. E. FORSTER, M.P., *or Vice-President of the Committee of Council on Education for the time being.*
THE RIGHT HON. SIR ALEXANDER Y. SPEARMAN, *Bt.*
THE RIGHT HON. A. S. AYRTON, M.P., *or First Commissioner of Her Majesty's Works for the time being.*
SIR THOMAS BAZLEY, *Bart.*, M.P.
SIR CHARLES LYELL, *Bart.*
SIR RODERICK I. MURCHISON, *Bart.*, K.C.B.
SIR FRANCIS GRANT, P.R.A.
SIR FRANCIS R. SANDFORD.
THOMAS BARING, ESQ., M.P.
EDGAR A. BOWRING, ESQ., C.B., M.P.
THOMAS FAIRBAIRN, ESQ.
THOMAS FIELD GIBSON, ESQ.
C. H. GREGORY, ESQ., *or President of the Institute of Civil Engineers for the time being.*
PROFESSOR HUXLEY, F.R.S., *or President of the Geological Society for the time being.*
DR. LYON PLAYFAIR, C.B., M.P.
HENRY THRING, ESQ.

A.

Her Majesty's Commissioners for the Exhibition of 1851 announce that the first of a series of Annual International Exhibitions of selected Works of Fine and Industrial Art and Scientific Inventions will be opened at South Kensington, London, on Monday, the 1st May 1871, and be closed on Saturday, the 30th September 1871.

B.

The Exhibitions will take place in permanent buildings, about to be erected, adjoining the arcades of the Royal Horticultural Gardens.

C.

The productions of all Nations will be admitted, subject to obtaining the certificate of competent judges that they are of sufficient excellence to be worthy of exhibition.

D.

The objects in the first Exhibition will consist of the following classes, for each of which will be appointed a Reporter and a separate Committee :—

I.—Fine Arts applied or not applied to Works of Utility.

1.—Painting of all kinds in oil, water-colors, distemper, wax, enamel, and on glass, porcelain, mosaics, etc.

2.—Sculpture, modelling, carving and chasing in marble, stone, wood, terra-cotta, metal, ivory, glass, precious stones, and any other materials.

3.—Engravings, lithography, photography, etc.

4.—Architectural designs, drawings, and models.

5.—Tapestries, carpets, embroideries, shawls, lace, etc., shown not as manufactures, but for the fine art of their designs in form or color.

6.—Designs for all kinds of decorative manufactures.

7.—Copies of ancient or mediæval pictures, mosaics, enamels, reproductions in plaster, fictile ivory, electrotypes of fine ancient works of art, etc.

II.—Scientific Inventions and New Discoveries of all kinds.

III.—Manufactures.

(a.)—Pottery of all kinds, *viz.*, earthenware, stoneware, porcelain, parian, etc., including terra-cottas used in building; with any new raw materials, new machinery, and processes for the preparation of such manufactures.

(b.)—Woollen and Worsted Fabrics; with any raw produce from new sources or newly prepared, and new machinery for woollen and worsted manufactures.

(c.)—Educational.

1.—School buildings, fittings, furniture, etc.

2.—Books, maps, globes, instruments, etc.

3.—Appliances for physical training, including toys and games.

4.—Specimens and illustrations of modes of teaching Fine Art, Natural History, and Physical Science.

Detailed rules applicable to each of the above classes, and lists of the separate trades engaged in the production of objects of manufacture, will be issued.

IV.—Horticulture.

International Exhibitions of new and rare plants and of fruits, vegetables, flowers, and plants showing specialities of cultivation will be held by the Royal Horticultural Society in conjunction with above Exhibitions.

Special rules for Horticultural Exhibition will be issued by the Royal Horticultural Society.

E.

In Classes II. and III. producers will be permitted to send one specimen of every kind of object they manufacture, such object being distinguished for novelty or excellence.

F.

The arrangement of the objects will be according to Classes and not Nationalities as in former International Exhibitions.

G.

One-third portion of the whole available space will be assigned absolutely to Foreign Exhibitors, who must obtain certificates for the admission of their objects from their respective Governments. Foreign countries will appoint their own judges. The remaining two-thirds of the space will be filled by objects produced either in the United Kingdom, or, if produced abroad, sent direct to the building for inspection aud approval of judges selected for the British Exhibitors. Objects not accepted for exhibition must be removed according to the notices given, but no objects exhibited can be removed until the close of the Exhibition.

H.

All exhibitors or their agents must deliver at the building into the charge of the proper officers the objects unpacked and ready for immediate exhibition and free of all charges for carriage, etc.

I.

Her Majesty's Commissioners will find large glass cases, stands, and fittings free of costs to the exhibitors, and, except in the case of machinery, carry out the arrangement of the objects by their own officers.

J.

Her Majesty's Commissioners will take the greatest possible care of all objects, but they will not hold themselves responsible for loss or damage of any kind.

K.

Prices may be attached to the objects, and exhibitors will be encouraged to state their prices. Agents will be appointed to attend to the interests of exhibitors.

L.

Every object must be accompanied with a descriptive label, stating the special reason, whether of excellence, novelty, or cheapness, etc., why it is offered for exhibition.

M.

Due notice will be given of the days for receiving each class of objects, and to enable the arrangements to be carried into effect, strict punctuality will be required from all exhibitors, both Foreign and British. Objects sent or brought after the days appointed for their reception cannot be received.

N.

Reports of each class of objects will be prepared immediately after the opening, and will be published before the 1st June 1871.

O.

Each foreign country will be free to accredit an official reporter for every class in which objects made in such country are exhibited for the purpose of joining in the reports.

P.

There will be no prizes, but a certificate of having obtained the distinction of admission to the exhibition will be given to each exhibitor.

Q.

A catalogue will be published in the English language, but every foreign country will be free to publish a catalogue in its own language if it think fit.

HENRY Y. D. SCOTT, *Lieut.-Col., R.E.,*
Secretary.

ANNUAL INTERNATIONAL EXHIBITIONS OF SELECT WORKS OF FINE AND INDUSTRIAL ART AND SCIENTIFIC INVENTIONS.

THE FIRST OF THE SERIES TO BE HELD IN 1871.

Special arrangements for foreign exhibitors whose objects are sent through the Commissions of their own Countries.

I.—In accordance with the general rule (II), Foreign Commissions must cause the objects to be delivered at the building into the charge of the proper officers, unpacked and ready for immediate exhibition, and free from all charges for carriage, &c.

II.—Foreign Commissioners must state their acceptance of the spaces respectively allotted on or before 1st May 1870. If not accepted by that time, the space will be treated as absolutely resigned.

III.—A preliminary list of the names of the exhibitors in each class to whom Foreign Commissioners have allotted space made out on the following form must be sent to Her Majesty's Commissioners on or before 1st November 1870:—

(a.)—Class.
(b.)—Object to be exhibited.
(c.)—Its dimensions.
(d.)—Exhibitor's name and address.

IV.—Foreign exhibitors by general rule (G) are also permitted to send objects direct to London to be admitted by a British Jury, and therefore it is indispensable that this information be furnished by Foreign Commissions at the time appointed.

V.—Forms, showing the totals of space allotted in each class, are supplied and must be returned filled up by 1st November 1870.

VI.—In accordance with general rule (E), producers of scientific inventions and manufacturers are permitted to send one specimen of every different kind of object they manufacture, such object being distinguished for novelty or excellence, and, according to general rule (L), every object must be accompanied with a descriptive label, stating the special reason, whether of excellence, novelty, or cheapness, &c., why it is offered for exhibition.

VII.—To enable Her Majesty's Commissioners to carry out their engagement to arrange all objects themselves, all objects being machinery or manufactures must be delivered at South Kensington on or before the 31st January 1871; all works of Fine Art must be delivered on or before the 15th February, and no objects sent though Foreign Commissions can be received after those dates.—(See general rule M.)

Exception.—If machinery requires to be fitted, the exhibitor or his agent must do such fittings. Foundations will be provided, but notice of their being required must be sent on or before 1st September 1870.

VIII.—To assist in the preparation of the reports which, in accordance with general rules (N and O), must be published before 1st June 1871, Foreign Commissions are requested to send, as early as possible, the name of one representative for each of the following classes, who should be present in London for the opening on Monday, 1st May 1871, and prepared to commence the consideration of the reports on Tuesday, 2nd May:—

IX.—Painting of all kinds.
Sculpture of all kinds.
Engravings of all kinds.
Photography.
Architecture.
Fine arts applied to industry.
Copies of ancient and mediæval works of art.
Scientific inventions.
Pottery.
Woollen and worsted manufactures.
Education.
Machinery for the manufacture of pottery, and woollen and worsted manufactures.
Horticulture.

X.—Each representative will be at liberty to appoint a deputy to take his place in his absence.

XI.—Her Majesty's Commissioners will defray the cost of drawing up the reports.—*See Appendix B.*

XII.—A specimen of the proposed catalogue is transmitted, and Foreign Commissions are requested to collect the information relating to each individual artist or producer admitted to the Exhibition. Every effort will be made to render the information complete, so as to make the notices in the annual volume of International Exhibitions as valuable as possible, both to the public and to the exhibitor, and to cause the honor of gaining admission to be duly appreciated.

FINE ARTS.

GENERAL REGULATIONS RELATING TO FINE ARTS APPLIED OR NOT APPLIED TO WORKS OF UTILITY.

I.—The following objects will be included in the first exhibition, and will be arranged in the under-mentioned classes for each of which a Reporter and Committee will be appointed:—

Fine Arts applied or not applied to Works of Utility.

1.—Painting of all kinds in oil, water colors, distemper, wax, enamel, and on glass, porcelain, mosaics, &c.
2.—Sculpture, modelling, carving and chasing in marble, stone, wood, terra-cotta, metal, ivory, glass, precious stones, and any other materials.
3.—Engravings, lithography, photography, &c.
4.—Architectural designs, drawings, and models.
5.—Tapestries, carpets, embroideries, shawls, lace, &c., shown not as manufactures, but for the fine art of their design in form or color.
6.—Designs for all kinds of decorative manufactures.
7.—Copies of ancient or mediæval pictures, mosaics, enamels, reproductions in plaster, fictile ivory, electrotypes of fine anicent works of art, &c.

II.—No artist can be allowed to exhibit more than two works in each class, unless under special conditions, but he may send works in as many classes as he pleases; thus the same artist may send for admission two oil paintings, two water-color paintings, two paintings on enamel, porcelain, &c., also two sculptures in marble, wood, &c.

III.—Paintings and sculptures may be either separate works, or form parts of the decoration of some object of utility, *e. g.*, fans, panels for furniture, wood carving for furniture, &c., provided that fine art is the predominant feature of the design.

IV.—The works of deceased artists are not admissible, except as copies or reproductions (Class 7).

V.—All works of art, except reproductions of ancient and mediæval works, must have been executed since 1862.

VI.—No work which has been previously exhibited in the United Kingdom can be admitted.

VII.—A producer may exhibit any number of reproductions of ancient or mediæval art, provided he obtains a certificate for their admission.

VIII.—Foreign Commissions will be required to furnish descriptions of all works, written only on one side of the paper, describing them as they are meant to be inserted in the catalogue, but no advertisement, unnecessary quotation, or narrative can be admitted. At the back of each frame or object must be written the name of the artist, and the number to which it refers in the list of the Commission: particular accuracy is requested in this respect.

IX.—Each picture or drawing must be in a separate frame, except very small miniatures, or sculptured gems, any number of which may be placed in a frame not exceeding six by five, or thirty square inches, and will be considered as one work; but if a series of designs from one story be admitted in the same frame, they must be enumerated as distinct pieces.

X.—All pictures and drawings must be in gilt frames. Excessive breadth in frames, as well as largely projecting mouldings, may prevent pictures obtaining the situation they otherwise merit; and oval frames should be avoided, as they are difficult of arrangement.

XI.—No mere transcripts of the objects of natural history, nor any drawings without backgrounds, excepting architectural designs, can be received.

XII.—The prices of works to be disposed of, carefully described as in Section VIII, may be communicated to the Secretary.

XIII.—To every work will be attached a label containing the following particulars:—

1. The subject. 2. The artist's name. 3. His address. 4. Any explanations.

XIV.—Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

SCIENTIFIC INVENTIONS AND DISCOVERIES.

I.—The exhibition of scientific inventions and discoveries will not be restricted to such as relate to the fine arts and to the three classes of manufactures included in this Exhibition, but will embrace all kinds of inventions and discoveries in physics, mechanics, and chemistry, which may be deemed worthy of admission.

II.—If any object requires for its exhibition fire steam, or water, or any other motive power, the application must distinctly specify what provision is necessary to be made for working it, and what securities are required against danger or accident.

III.—As a general rule, explosive and dangerous substances, including such as are liable to spontaneous combustion, and substances deleterious to other ordinary exhibits, will not be admitted. Any imitations of explosive or dangerous compounds (such as the substitution of coal dust for gunpowder in sections of shells and the like) must be the subjects of special application.

IV.—To every object will be attached a label containing the following particulars:—

1.—The name of the object.
2.—Its use or application.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for exhibition, such as—
Its novelty.
Its ingenuity.
Its comparative superiority.
Its peculiar qualities or properties.
Its commercial, artistic, or scientific value and importance.
Its cheapness.
6.—The price, unless the exhibitor objects.
7.—Any explanations, etc.

V.—Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

GENERAL REGULATIONS FOR EXHIBITING POTTERY AS A MANUFACTURE AND NOT AS A FINE ART.

I.—Pottery of all kinds will be exhibited, *viz.*, earthenware, stoneware, porcelain, parian, etc., including terra-cottas used in building, with new raw materials, machinery, and processes for the preparation of such manufactures.

II.—In this class, the following trades, together with any others engaged in the production of pottery, are eligible to send illustrations of their respective branches of production:—*

Brick and tile makers.
Brown stone potters.
Chemical potters.
Chimney top manufacturers.
China and earthenware manufacturers.
„ gilders.
„ menders.
„ riveters.
„ and porcelain door furniture makers.
„ and porcelain manufacturers.
„ drillers.
„ figure manufacturers.
„ ornament makers.
„ painters and gilders.
„ toy makers.
Drain pipe and tile makers.
Earthenware figure manufacturers.
„ manufacturers.
Egyptian blackware manufacturers.
Encaustic tile makers.
Fancy jug manufacturers.
Fire brick makers.
Jug manufacturers.
Melting pot and crucible makers.
Muffle manufacturers.
Parian manufacturers.
Plumbers' pottery makers.
Porcelain letter makers.
„ manufacturers.
Potters.
Potters' engravers.
Rockingham ware manufacturers.
Stone bottle makers.
„ mortar and pestle manufacturers.
„ potters.
„ ware manufacturers.
Terra-cotta manufacturers.
Tobacco pipe makers.
Vase manufacturers.

* This list is of trades existing in the United Kingdom, but it may be suggestive to Foreign Commissions.

IV.—A producer in each of the trades may submit a specimen of each kind of object he manufactures, although such specimen may form only a part of a complete object.

V.—The aim of the exhibition being to bring prominently into notice specimens remarkable for excellence, novelty, invention, etc., it is desirable to have the fewest number of specimens from each producer, and only those which are absolutely necessary: consequently no duplicates of any object can be admitted.

VI.—Thus, it is desirable that exhibitors should send only one specimen of the same kind of object, such, for instance, as one tea-cup, one saucer, and one plate of the same tea service; one dish, etc., being of the same series or pattern; one plate, one tureen, one vegetable dish, etc., of the same dinner service; one jug of a series; one garden vase, one drain pipe, one tile of the same pattern, &c.; one toilet jug and bowl. But they may send several specimens each belonging to a different series or pattern; and if a different pattern is put upon the same shaped cup, the cup may be sent.

VII.—Two objects of the same pattern, such as jugs, differing only in size, cannot be exhibited.

VIII.—To every object will be attached a label containing the following particulars:—

1.—The name of the specimen.
2.—The materials of which it is composed.
3.—The exhibitor's name.
4.—His address.
5.—If of sufficient importance, the name of the designer or actual maker.
6.—The reasons why it is offered for exhibition, such as—
Its body or composition.
Its form.
Its surface pattern.
Its novelty.
Its excellence.
Its cheapness.
7.—The price, if the exhibitor pleases.
8.—Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

NEW MATERIALS FOR POTTERY.

IX.—Newly-discovered materials used in the production of pottery, new combinations of old materials, and new processes of manufacture may be exhibited.

X.—Persons engaged in the following trades, or any other trades connected with the preparation of the materials used in the manufacture of pottery, may send illustrations of their productions:—

Ash merchants.
Chert stone dealers.
China clay merchants.
Clay merchants.
Flint millers.
Manganese merchants.
Marble clay merchants.
Pipe clay manufacturers and merchants.
Zaffre refiners.

XI.—It is desirable that the specimens of materials should be as small as possible, and such as can be exhibited in bottles or glass cases on a wall. The opportunities of admission will be greatly increased if the object be small.

XII.—To every specimen will be attached a label containing the following particulars:—

1. The name of the material and source from whence it is obtained.
2. The exhibitor's name.
3. His address.
4. The reasons why it is offered for exhibition, such as—
Its value and importance.
Its novelty.
Its superior excellence.
Its cheapness.
5. The price, unless the exhibitor objects.
6. Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

NEW MACHINERY FOR POTTERY.

XIII.—New machinery and apparatus will be admitted, and recent inventions relating to the different parts of the various machines and appliances used in the manufacture of pottery may be shown either as complete machines, or separately in parts. Machinery in motion and processes may be shown.

XIV.—Persons engaged in the following and other trades in the United Kingdom connected with the manufacture of pottery may send exhibits:—

Brick makers' implement manufacturers.
,, mould makers.
Grinding mill makers.
Kiln builders.
Machinists in general.
Pug mill makers.
Potters' wheel makers.

XV.—To every specimen will be attached a label, containing the following particulars:—

1.—The name of the specimen.
2.—The purpose to which it is applied.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for exhibition, such as—
The novelty of its invention.
The superiority of its productiveness or efficiency.
Its increased economy in producing.
Its cheapness.
6. The price, unless the Exhibitor objects.
7. Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

XVI.—Exhibitors whose machinery is admitted and requires to be fitted together will have to arrange it themselves in the Exhibition, but Her Majesty's Commissioners will, unless otherwise stipulated when the objects are admitted, find the necessary foundations.

GENERAL REGULATIONS FOR EXHIBITING WOOL AND WORSTED FABRICS.

I.—Woollen and worsted fabrics of all kinds will be exhibited—

With the raw produce and machinery for manufactures in the same.

II.—Producers engaged in the various trades, such as the following, connected with the manufacture of wool and worsted fabrics, are eligible to send specimens of the particular work in which they are engaged, although it forms

only part of a complete object. Thus, a "beaver-cutter" may exhibit beaver-cutting; a pulp cloth manufacturer may exhibit specimens of pulp cloth; a yarn manufacturer, yarn, etc.

(a).—Woollen Trades.

Army cloth manufacturers.
Baize manufacturers.
Billiard table cloth manufacturers.
Blanket manufacturers.
„ yarn spinners.
Cloth dressers.
„ drawers.
„ embossers.
„ factors and merchants.
„ finishers.
„ frizzers.
„ fullers.
„ manufacturers.
„ millers.
„ waterproofers.
„ workers.
Doeskin manufacturers.
Drugget manufacturers.
Dyers and scourers.
Felt makers.
Flannel agents.
„ factors.
„ manufacturers.
Fulling millers.
Horse cloth manufacturers.
Hot pressers.
Ironing cloth manufacturers.
Kersey manufacturers.
Machine cloth manufacturers.
Mourning hat band makers.
Navy clothiers.
Painted baize makers.
Pianoforte hammer and damper cloth manufacturers.
Printers' blanket manufacturers.
Pulp cloth manufacturers.
Railway wrapper manufacturers.
Roller clearer and ironing cloth manufacturers.
Saddle cloth makers.
Scribbling millers.
Shag manufacturers.
Ship felt makers.
Shoddy manufacturers.
Table cover manufacturers.
Upholsterers' woollen manufacturers.
Wool carders.
„ sheet manufacturers.
Woollen agents.
„ dyers.
„ factors.
„ cloth manufacturers.
„ cloth waterproofers.
„ manufacturers.
„ spinners.
„ waste dealers.
„ weavers.
Yarn manufacturers.

(b).—Worsted Trades.

Alpacca manufacturers.
„ spinners.
Band and galloon makers.
Bell rope makers.
Berlin wool manufacturers.
Bombasin manufacturers.
Braid makers.
Bunting manufacturers.
Carpet manufacturers.
„ pattern designers.
„ planners.
„ weavers.
„ yarn manufacturers.
Cashmere manufacturers.
Cashmerett manufacturers.
Challis manufacturers.
Chenille manufacturers.
Coach lace manufacturers.
„ trimmers.
„ upholstery and trimming manufacturers.
Damask manufacturers.
Fringe and lace makers.
Galloon and double makers.
Girth web manufacturers.
Hearth rug makers.
Lamb's wool manufacturers.
Lasting manufacturers.
Lindsey manufacturers.
Livery lace makers.
Machine combers.
Merino manufacturers.
Merino spinners.
Military embroiderers.
„ sash makers.
Mohair manufacturers.
Moreen makers.
Mousseline de laine manufacturers.
Poplin manufacturers.
Railway woven badge manufacturers.
Rug manufacturers.
Satteen manufacturers.
Serge manufacturers.
Shalloon manufacturers.
Shawl border and fringe manufacturers.
„ cleaners.
„ darners.
„ manufacturers.
Stuff finishers.
„ manufacturers and agents.
Tassel manufacturers.
Trimming manufacturers.
Tweed manufacturers.
Upholsterers' trimming manufacturers.
Waistcoating manufacturers.
Web and webbing manufacturers.
Wool combers.
Woollen cord manufacturers.
„ stuff manufacturers.
Worsted dyers.
„ manufacturers.
„ spinners.
„ waste dealers.
Yarn manufacturers.

Not Classified.

Beaver cutters.
Blackwell hall factors.
Calenderers.
Domett manufacturers.
Embroiderers.
Embroidery designers.
Fent dealers.
Flock manufacturers.
Flushing manufacturers.
Gunny bag makers.
Listing manufacturers.
Machine habit manufacturers.
Mungo merchants and dealers.
Plainback manufacturers.
Plush manufacturers.
Regatta manufacturers.
Stripes manufacturers.
Zebra dress manufacturers.

III.—The Exhibition will be limited to such specimens as are necessary to show the different fabrics and their patterns in a satisfactory manner, and the specimens will be restricted to goods made entirely of wool, worsted or hair, or of wool, worsted or hair, combined with cotton, silk, or other textile materials.

IV.—Exhibitors must not send whole bales of cloth, rolls of carpet, or complete pieces of goods, and specimens should, if possible, not exceed three yards, unless the pattern requires a greater length. They may be exhibited in glass frames, which must not exceed two inches in depth or one and a half inches in width. The frames must be black.

V.—No duplicates can be admitted, but the same design may be shown with different combinations of colors.

VI.—To every object will be attached a label containing the following particulars:—

1.—The name of the fabric.
2.—The material of which it is made.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for exhibition, such as—
Its excellence of manufacture.
Its beauty of design.
Its permanence of dye or color.
Its ingenuity in the application of new materials.
Its novelty of production.
Its cheapness.
6.—The price, unless the exhibitor objects.
7.—Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

NEW MATERIALS FOR WOOL AND WORSTED FABRICS.

VII.—Wool and hair of various kinds not hitherto used in the manufacture of textile fabrics, and materials recently applied to the cleansing preparation, and dyeing thereof, may be exhibited.

VIII.—Producers, such as the following, engaged in the preparation of the materials used in the manufacture of wool and worsted fabrics, may send specimens of them:—

Alkali manufacturers.
Alpacca wool merchants.
Alum manufacturers.
Ammonia manufacturers.
Annato manufacturers.
Aquafortis makers.
Arsenic manufacturers.
Bleaching liquid makers.
„ powder makers.
Blue manufacturers.
Blue verditer makers.
Camel hair marchants.
Carmine makers.
Chemical color makers.
Chloride manufacturers.
Cobalt refiners.
Colorers.
Color manufacturers.
Copperas manufacturers.
Creosote manufacturers.

Cudbear makers.
Dye manufacturers.
Garacin manufacturers.
Goats' hair merchants.
Indigo blue manufacturers.
,, extract manufacturers.
,, manufacturers.
,, refiners.
Manganese merchants.
Merino wool merchants.
Mecklenburgh blue makers.
Mohair merchants.
Mordant makers.
Ochre manufacturers.
Oil of vitriol manufacturers.
Orchil and cudbear manufacturers.
Smalt manufacturers.
Soda ash makers.
,, crystal manufacturers.
,, merchants.
Spirits of salt manufacturers.
Sulphate of ammonia manufacturers.
,, of barytes manufacturers.
,, of copper manufacturers.
,, of soda manufacturers.
Turpentine distillers.
Ultramarine manufacturers.
Vitriol manufacturers.
Washing compound makers.
,, crystal manufacturers.
Wool factors.
,, merchants.
,, staplers.
Zaffre refiners.

IX.—To every specimen will be attached a label containing the following particulars:—

1.—The name of the material.
2.—The express purpose for which it is used.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for exhibition, such as—
Its special mode of preparation for woollen and worsted fabrics.
Its comparative superiority.
Its peculiar qualities and properties.
Its commercial value and importance.
Its novelty of production or application.
Its cheapness.
6.—The price, unless the exhibitor objects.
7.—Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

NEW MACHINERY FOR WOOL AND WORSTED FABRICS.

X.—New machinery and apparatus used in the cleansing, preparation, and weaving of wool and hair, will be admitted, and improvements of the different parts of the various machines and appliances may be shown separately.

XI.—Manufacturers, such as the following, engaged in the production of machinery and apparatus used in the manufacture of wool and worsted fabrics, may exhibit under this head:—

Bobbin manufacturers.
,, turners.
Card machine makers.
,, makers.
,, teeth makers.
Cloth press makers.
Flyer makers.
Fork manufacturers (weft).
Gear and slay makers.
Hackle and gill pin manufacturers.
,, makers.
Heald and slay makers.
Heddle makers.
Jacquard card cutters.
,, harness mounters.
,, machine makers.
Loom makers.
,, mounters.
,, passers and twisters.
Machine joiners.
Machine makers.
Reed and slay makers.
Shuttle makers.
,, tip makers.
Spindle makers.
Spinner flyer makers.
Tassel and fringe mould turners.
Teazle rod manufacturers.
Weavers' harness makers and enterers.
,, joiners.
,, leash makers.
,, loom makers.
,, mail makers.
,, turners.
Winding frame makers.
Wool card makers.
Wool comb makers.
Woollen card makers.
,, machine makers.
Woolley teeth makers.

XII.—To every object will be attached a label containing the following particulars:—

1.—The name of the object.
2.—The purpose to which it is applied.
3.—The exhibitor's name.
4.—His address.
5.—The reasons why it is offered for exhibition, such as—
Its ingenuity.
Its novelty.
Its improvement on ordinary construction.
Its increased economy in producing.
The superiority of its execution.
Its increased efficiency.
Its cheapness.
6.—The price, when the exhibitor does not object.
7.—Any explanations, etc.

Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

GENERAL REGULATIONS FOR EXHIBITING EDUCATIONAL WORKS AND APPLIANCES.

I.—The exhibition of educational works and appliances will include illustrations of all the subjects belonging to the following branches into which this class is sub-divided:—

1.—School buildings, fittings, furniture, etc.
2.—Books, maps, globes, instruments, etc.
3.—Appliances for physical training, including toys and games.
4.—Specimens and illustrations of modes of teaching Fine Art, Natural History, and Physical Science.
5.—Specimens of school work serving as examples of the results of teaching.

II.—The various trades engaged in the production of educational works and appliances will exhibit under this head, such as:—*

1.—*School Buildings, Fittings, and Furniture.*

Abacus frame makers.
Black board makers.
Diagram stand makers.
Easel makers.
Ink well makers.
Object lesson cabinet makers.
Reading frame makers.
School apparatus makers.
,, building model makers.
,, clock makers.
,, desk makers.
,, fitting makers.
,, form makers.

2.—*Books, Maps, Globes, Instruments, etc.*

Chart sellers.
Copy book publishers.
Engravers—(map).
,, (music).
Globe makers.
Ink powder makers.
Inkstand makers.
Map and chart sellers and publishers.
,, and print colorers.
,, engravers and printers.
,, mounters.
Mathematical instrument makers.
Music copyists.
Pen makers.
Pencil makers.
Penholder makers.
Publishers.
Quill and pen manufacturers.
Raised map makers.
School slate makers.
Slate pencil makers.
Steel pen manufacturers.
Topographers.
Writing ink makers.

* This list is of trades existing in the United Kingdom, but it may be suggestive to Foreign Commissions.

3.—*Appliances for Physical Training, including Toys and Games.*

Archery tackle makers.
Backgammon board makers.
Ball and balloon makers.
Bowstring makers.
Bicycle makers.
Chess board makers.
Cricket bat, ball, and stump makers.
Croquet manufacturers.
Dissected map makers.
Doll makers.
Foot ball manufacturers.
Gilt toy makers.
Glass toy makers.
Gymnasium makers.
Hoop makers.
Map dissectors.
Marble manufacturers.
Pedometer makers.
Puzzle makers.
Rocking horse makers.
Skate makers.
Skittle makers.
Target makers.
Top makers.
Toy makers.

4.—*Specimens and Illustrations of the modes of Teaching Fine Art, Natural History, and Physical Science.*

Anatomical figure makers.
Aquaria makers.
Artists' colormen.
Barometer makers.
Bird and beast stuffers.
Black lead pencil makers.
Botanical collectors.
Camel hair pencil makers.
Chemical apparatus makers.
Colored saucer makers.
Crayon makers.
Drawing board makers.
Drawing instrument makers.
Drawing model makers.
Electric apparatus manufacturers.
Fossil dealers.
Galvanic apparatus manufacturers.
Geological collectors.
Magic lantern makers.
Magnet makers.
Makers of musical instruments for schools.
Mechanical figure makers.
Microscope makers.
Mineralogists.
Naturalists.
Nautical instrument makers.
Optical instrument makers.
Orrery and tellurian makers.
Philosophical instrument makers.
Pink, &c., saucer makers.
Plaster cast figure makers.
Preparers of botanical specimens.
„ of microscopic objects.
Stereoscope makers.
Sun dial makers.
Telegraph instrument makers.
Telescope makers.
Thermometer makers.
Ward's case makers.
Zoological artists.

III.—All the producers named in these lists are eligible to send new illustrations of their respective branches of production.

IV.—The aim of the Exhibition being to show specimens remarkable for excellence, novelty, invention, etc., it is desirable to have the fewest number of specimens from each producer, and only those which are absolutely necessary; consequently no duplicates of any object can be admitted.

V.—Models of school buildings, heating and ventilating apparatus, etc., ought not to exceed the scale necessary to show their construction or working parts intelligibly. But generally drawings showing the buildings, etc., in plan, section, and elevation will be preferred to models, as they can be more easily exhibited.

VI.—Specimens of fittings, furniture, &c., such as desks and forms, must be kept within moderate limits; for instance, the desks and forms ought not to exceed four feet in length.

VII.—The specimens, illustrations, and collections used in teaching Fine Art, Natural History, and Physical Science ought not to be so large or costly as to be beyond the reach of ordinary schools.

VIII.—As far as possible, they should be exhibited in glass frames, which should not exceed two inches in depth and one and a half inches in width. The frames should be black.

IX.—To every object will be attached a label containing the following particulars :—

1.—The name of the specimen.

2.—The purpose for which it is intended.

3.—The exhibitor's name.

4.—His address.

5.—The reasons why it is offered for exhibition, such as—

Its special fitness for its purpose.
Its illustrative character.
Its novelty.
Its ingenuity.
Its comparative superiority.
Its cheapness.

6.—The price, unless the exhibitor objects.

7.—Any explanations, &c.

X.—Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

5.—*Specimens of School Work, serving as examples of the results of teaching.*

XI.—These will be confined to the following :—

(a.)—Writing, plain and ornamental.

(b.)—Drawing and design.

(c.)—Modelling in clay, terra-cotta, wax, &c.

(d.)—Models of machinery, building construction, &c.

(e.)—Needlework, plain and ornamental, lace, knitting, &c.

(f.)—Miscellaneous work by pupils in schools for the blind, reformatories, &c.

XII.—Under *(a) Writing*, will be included examples of dictation, translation, writing from memory, map drawing, and other school work which can be conveniently shown on paper. This should be on good paper, in single leaves not exceeding twelve inches by nine inches, written on one side only, and each complete in itself. No one school must send more than such leaves at the utmost, and the contributions should be chosen with the view of showing the general work throughout the school, and not that of one or two advanced scholars. The name of the school and the age of the scholar, with the time during which he has been under instruction, should be added. As the object is not to compare the work done in different schools in any one country, but rather to furnish the means of comparison between the school work of different countries, a limited number of examples only can be exhibited.

XIII.—Contributions falling under *(d) (e) (f)* must show some special excellence, ingenuity, or originality in order to entitle them to admission. To each of these objects will be attached a label containing the following particulars :—

1.—Name of school.

2.—Age of scholar.

3.—Period of instruction.

4.—The reason why the object is offered for exhibition, such as—

Its excellence of workmanship.
The special circumstances under which it has been produced.

XIV.—Foreign Commissions are requested to furnish these particulars on or before the 15th January 1871.

ANNUAL INTERNATIONAL EXHIBITIONS OF SELECT WORKS OF FINE AND INDUSTRIAL ART AND SCIENTIFIC INVENTIONS.

The objects in the first Exhibition will consist of—

I.—FINE ARTS APPLIED, OR NOT APPLIED, TO WORKS OF UTILITY.

II.—SCIENTIFIC INVENTIONS AND NEW DISCOVERIES OF ALL KINDS.

III.—MANUFACTURES—

(a.)—Pottery.

(b.)—Woollen and worsted fabrics.

(c.)—Educational.

Under fine art, all works must be exhibited in the artist's own name; but the name of the firm for whom the object was designed will be added, or the name of the Rajah by whom the works are sent to the Exhibition. (See specimen of catalogue, page 5, under Carpets.)

The exhibitors from India might exhibit paintings applied to boxes, &c., enamels and the like, ivory carving, mosaics, &c., Cashmere shawls.

The works of deceased artists are not admissible, except as copies or reproductions.

All works of art and manufactures must have been executed since 1862.

A producer may exhibit any number of reproductions or copies of ancient or mediæval art, provided he obtain a certificate for their admission.

The manufactures included in the first Exhibition will be restricted to three classes, *viz.*, pottery, woollen and worsted, and educational classes; but the exhibition of scientific inventions and discoveries will in no way be restricted, but will embrace all kinds of inventions and discoveries in physics, mechanics, and chemistry, which may be deemed worthy of admission.

A producer in each of the classes may submit a specimen of each kind of object he manufactures, although such specimen may form only a part of a complete object.

The aim of the Exhibition being to bring prominently into notice specimens remarkable for excellence, novelty of invention, &c., it is desirable to have the fewest number of specimens from each producer, and only those which are absolutely necessary; consequently no duplicate of any object can be admitted.

Thus it is desirable that exhibitors should send only one specimen of the same kind of object. In the woollen and worsted and educational classes, the specimens should be kept within moderate limits as to size. But producers may send several specimens, each belonging to a different series or pattern, and if a different pattern be put upon the same shaped cup, the cup may be sent. In woollen and worsted manufactures, the same design may be shown in different combinations of colors.

The exhibition of woollen and worsted fabrics will be limited to such specimens as are necessary to show the different fabrics and their patterns in a satisfactory manner, and the specimens will be restricted to goods made entirely of wool, worsted or hair, or of wool, worsted or hair, combined with cotton, silk, or other textile materials. It would be desirable to obtain a specimen of all the different modern woollen fabrics made in each District of India with the prices at which they are sold. India could make a capital collection of toys, games, perhaps apparatus for teaching.

New machinery and apparatus, newly discovered materials, and new combinations of old materials, used in the manufacture of objects comprised in the three classes, will be admitted, and recent inventions relating to the different parts of the various machines and appliances used in such manufactures may be shown either as complete machines, or separately in parts. Machinery in motion and processes of manufactures may be shown.

Appendix B.

FINE ARTS.

PAINTING IN OIL.

Painting in Oil.	Exhibitors' Names.
1 THE BATTLE OF COLIN, 1757 VIENNA. Born at ; pupil of : 2nd Prize, 1867.	S. ALLEMAND, *Jun*
2 THE MUMMY HOLLAND. Born at Dronryp, Friesland; pupil of Baron Leys: Medal, 1864; Second Prize, 1867, Knight of the Order of Leopold.	ALMA-TADEMA.
3 SWEDISH LANDSCAPE; NIGHT SCENE SWEDEN. Born at ; pupil of	E. BERGH.
4 SHEEP ON THE SEA-SHORE FRANCE. *By Commune de Thomery, Seine et Marne.* Born at Bordeaux; pupil of R. Bonheur, her father; 3rd Class Medal, 1845; 1st Class Medal, 1848; 'Exempt from the jury of admission by special decision' ('Moniteur' of the 27th July 1853); 1st Class Medal, 1855; Chevalier of the Legion of Honour, 1865; Second Prize, 1867.	Mdlle. M. R. BONHEUR.
5 CATTLE	Mdlle. M. R. BONHEUR.
6 A SHOEMAKER'S WIFE, WITH HER CHILD AND AN APPRENTICE, WATCHING A MOUSE IN A TRAP WIESBADEN. Born at ; pupil of : 1st Class Medal, 1855; Grand Prize, 1857.	Prof. L. KNAUS.
7 PORTRAIT OF A LADY LONDON. Born at ; pupil of	Sir F. GRANT, P.R.A.
8 THE BATTLE OF POLTAWA RUSSIA. Born at ; pupil of : 3rd Prize, 1867.	A. KOTZEBUE.
9 THE SHREW TAMED LONDON. 1, *St. John's Wood Road.* Born at ; pupil of : Grand Medal of Honour, 1855.	Sir E. LANDSEER, R.A.
10 EXPECTATION FRANCE. *Poissy, Seine et Oise.* Born at Lyons; pupil of L. Coignet: 3rd Class Medal, 1840; 2nd Class Medal 1841; 1st Class Medal, 1843; Chevalier of the Legion of Honour, 1846; 1st Class Medal, 1848; Grand Medal of Honour, 1855; Officer of the Legion of Honour, 1856; Member of the Institute, 1861; Grand Prize 1867.	J. L. E. MEISSONIER.
11 THE FARRIER	J. L. E. MEISSONIER.
12 SERMON IN THE SISTINE CHAPEL MADRID. Born at ; pupil of : 2nd Prize, 1867.	V. PALMORALI.
13 THE VISIT BELGIUM. Born at : Medal, 1851; 2nd Class Medal, 1855; 1st Prize, 1867.	Chevalier A. STEVENS.
14 COURTIERS AND PEASANTS, WURTEMBURG SWITZERLAND. *Lausanne, Vaud.* Born at ; pupil of : 2nd Prize 1867.	B. VAUTIER.

PAINTING IN WATER COLOURS.

Painting in Water Colours.	
1 STAG HUNT LONDON. *President of the Society of Painters in Water Colours.* Born at	FREDERICK TAYLOR, R.W.S.
2 FIRST NOTES OF THE CUCKOO LONDON. 29, *Upper Phillimore Place, Kensington.* Born at ; pupil of	E. G. WARREN.
3 LANDSCAPE, ABINGER COMMON LONDON. *Hyde Park Gate.* Born at : Royal Academician; Surveyor of Her Majesty's Pictures; Inspector General for Art of the Science and Art Department; author of various Reports on Design in International Exhibitions, &c.; Chevalier of the Legion d'Honneur.	R. REDGRAVE, R.A.

PAINTING IN ENAMEL.

Painting in Enamel.	
1 PORTRAIT OF RENEE OF FRANCE, DUCHESS FERRARA. Painted in enamel. Price 1,000 francs PARIS. Born at ; pupil of	A. MEYER.

PAINTING ON EARTHENWARE.

Painting on Earthenware.	
1 THE GENIUS OF PAINTING and the GENIUS OF SCULPTURE. Painting on earthenware. Executed at the Imperial Manufactory, Sèvres PARIS (near), 152, *Rue de la Tour, Passy.* Born at Eschwiller, Moselle; pupil of P. Delaroche: 1st Class Medal, 1848; 2nd Class Medal, 1855; Chevalier of the Legion of Honour 1855; Grand Medal of Honour, 1857; 2nd Prize, 1867.	A. YVON.
2 A VASE IN MAJOLICA—JUPITER AND EUROPA, after Guido, painted for Minton and Co., Stoke-on-Trent STOKE-ON-TRENT. Medal, 1867.	W. ALLEN.

PAINTING APPLIED TO DECORATION.

Painting applied to Decoration. — **Exhibitors' Names.**

1 PORCELAIN PLAQUE. Copy of Mulready's "Crossing the Brook." Adapted to a Cabinet and Stand designed by Professor Semper ... ... G. GRAY.
ENGLAND. Born at ; pupil of Central School of Design.

2 FAN. Ivory, richly carved and gilt. The front of the fan is painted with three medallions representing (1) Before the Tournament; (2) The Tournament; (3) After the Tournament. Painted and designed for M. Alexandre ... ... E. MOREAU.
FRANCE. Born at ; pupil of

3 PAINTINGS for a Cabinet designed by W. J. Burgess, Esq., Architect ... E. J. POYNTER, A.R.A.
LONDON, 106, *Gower Street.* Born at Paris; pupil of the Royal Academy, London, and M. Gleyre, Paris; Associate Royal Academician.

MOSAICS.

Mosaics.

1 A TABLE IN ROMAN MOSAIC ... ... The Cavaliere BARBERI.
ROME. Born at ; pupil of : Council Medal, 1851.

2 MOSAIC WALL PICTURE, in coloured marbles, black inlaid outlines ... Baron H. DE TRIQUETI.
PARIS. Born at ; pupil of

3 MOSAIC—OPUS ANGLICANUM. Figure of Leonardo da Vinci, designed by J. Tenniel; worked by Miss Florence Cole and other students of the School of Art, South Kensington.

4 MOSAIC PICTURE IN VENETIAN GLASS ENAMEL OF SIR JOSHUA REYNOLDS, P.R.A., executed from the design of Mr. H. Phillips for the South Kensington Museum SALVIATI & Co.
LONDON. Established

5 MURAL MOSAIC WORK, Monumental or Byzantine style, in Venetian Enamel, representing Christ on the Judgment Throne, from the design of Gambier Parry, Esq. ... SALVIATI & Co.

CARTOONS.

Cartoons.

1 THE EPOCH OF THE REFORMATION ... ... G. De KAULBACH.
MUNICH. *Director of the Academy of Fine Arts.* Born at : 1st Class Medal, 1855; Grand Prize, 1867.

SCULPTURE.

SCULPTURE IN MARBLE AND STONE.

Sculpture.

1 EQUESTRIAN STATUE OF H. M. KING WILLIAM, erected for the eastern portal of the Bridge of the Rhine at Cologne, by the Administration of the Cologne Minden Railway ... ... Professor F. DRAKE.
BERLIN. Born at ; pupil of : Prize Medal, 1851; Honourable Mention, 1855; Grand Prize, 1867.

2 PIETY—Marble Group ... ... J. DUPRE.
FLORENCE. Born at ; pupil of : 1st Class Medal, 1855; Grand Prize, 1867.

3 NAPOLEON, FIRST CONSUL—Marble Bust ... ... E. C. J. B. GUILLAUME.
PARIS. *Imperial School of Fine Arts.* Born at Montbard, Cote d'Or; pupil of Pradier: Prize of Rome, 1845; 2nd Class Medal, 1852; 1st Class Medal, 1855; Chevalier of the Legion of Honour, 1855; Member of the Institute, 1862; Grand Prize, 1867.

4 EPISODE OF THE DELUGE, with bas-relief representing the Wrath of God, the Building of the Ark, the End of the Deluge, and the First Sacrifice of Noah. Two children quarrelling for a dove ... ... V. LUCCARDI.
ROME. *Professor of the Academy of St. Luke.* Born at ; pupil of : 2nd Prize, 1867.

5 SAUL UNDER THE INFLUENCE OF THE EVIL SPIRIT—Colossal Statue in Marble ... W. W. STORY.
Born at ; pupil of

6 CHRISTOPHER COLUMBUS AND AMERICA—Plaster Group ... ... A. VELA.
TURIN. Born at ; pupil of : Honourable Mention, 1855; 1st Prize, 1867.

SCULPTURE IN WOOD.

Sculpture in Wood.

1 CABINET richly carved and inlaid in ebony and stained woods. French Renaissance style. Executed by M. Fourdinois. Price 2,750*l.* ... ... M. NIVILDER.
FRANCE. Born at ; pupil of : 2nd Class Medal, 1855; Silver Medal, 1867.

2 PORTRAIT OF THE PRINCESS MARIA PIA. In carved boxwood. Price 300 francs ... L. FRULLINI.
ITALY. Born at ; pupil of : Silver Medal, 1867.

3 CABINET. Marquetry of variously coloured woods, ornamented with figures, festoons of flowers, &c., in full relief in bronze gilt, in the front and sides are oval plaques of porcelain; the whole surmounted by a mirror in a frame of carved and gilt wood. The top of the cabinet is composed of inlaid marbles. English, modern. Manufactured by Messrs. Jackson and Graham ... ... E. PRIGNOT.
PARIS. 70, *Rue Rochechouart.* Born at ; pupil of : Gold Medal, 1867.

WORKS IN METAL.

Sculpture in Metal.

1 CLOCK. Female figure "Contemplation" seated on a black marble base. Imitation bronze. Manufactured by J. Boy, 106, Rue Turenne, Paris ... ... A. CARRIER-BELLEUSE.
PARIS. Born at ; pupil of : 1st Class Medal, 1855; Gold Medal, 1867; Practised Modelling in the Staffordshire Potteries for Messrs. Minton and Co. and others, about 1851 and following years.

Sculpture in Metal. — **Exhibitors' Names.**

2 A BRONZE CUP encrusted with Gold and Silver. Executed for M. F. Barbedienne, 30, Boulevard Poissonnière, Paris. Price 320*l.* ... ... S. CONSTANT.
PARIS. Born at ; pupil of : Honourable Mention, 1855; Gold Medal, 1867.

3 TWO MEDALS, designed by ... ... E. FERNANDEZ PESCADOR.
MADRID. Born at ; pupil of : 2nd Prize, 1867.

4 SHIELD. Silver and damascened iron. Executed for Messrs. Elkington and Co. ... M. LADUIL.
Born at ; pupil of : Gold Medal, 1867.

5 CUP WITH TWO HANDLES. Silver repoussé work. The design consists of fruits, corn, and foliage. Executed by M. Desiré Attarge for M. F. Barbedienne, 30, Boulevard Poissonnière, Paris. Price 3,000 francs ... ... C. LEONIN.
Born at ; pupil of

6 A SILVER COFFEE POT. Executed for Messrs. Christofle and Co., 56, Rue de Bondy, Paris ... ... M. MADROUX.
PARIS. Born at ; pupil of : Silver Medal, 1867.

7 FRAME. Double in Spanish niello work. Price 260 francs ... ... E. ZULOAGA.
Born at ; pupil of : Silver Medal, 1867.

SCULPTURE IN IVORY.

Sculpture in Ivory.

1 CHRIST ON THE CROSS ... ... J. L. MOREAU.
PARIS. 15, *Rue Tiquetonne.* Born at ; pupil of : Silver Medal, 1867.

2 FEMALE FIGURE ... ... J. L. MOREAU.

ENGRAVINGS, LITHOGRAPHY, PHOTOGRAPHY, ETC.

ENGRAVINGS.

Engravings.

1 THE DISPUTE, after Raphael (line engraving). 1,200 francs ... ... J. KELLER.
Professor in the Academy of DUSSELDORF. Born at ; pupil of : Grand Prize, 1867.

2 THE COUNTESS OF BEDFORD, after Vandyke ... ... J. H. ROBINSON, A.R.A.
PETWORTH. *New Grove.* Born at ; pupil of : 1st Class Medal, 1855.

LITHOGRAPHY.

Lithography.

1 THE CROWNING OF THE VIRGIN, after the Picture by Fra Angelico, in Louvre A. FRANCOIS.
PARIS. 56, *Avenue de Breteuil.* Born in Paris; pupil of M. Hewisquel: 1st Class Medal, 1851; 1st Class Medal, 1857; Grand Prize, 1867.

PHOTOGRAPHY.

Photography.

1 PHOTOGRAPHS AND REPRODUCTIONS in a frame ... ... R. J. BINGHAM.
PARIS. 58, *Rue de la Rochefoucauld.* Born at ; pupil of : Medal, 1862; Grand Prize, 1867.

2 PHOTOGRAPHS in one frame ... ... A. BRAUN.
FRANCE. *Dornach, Haut Rhin.* Born at ; pupil of : 1st Class Medal, 1855; Medal, 1862; Silver Medal, 1867.

3 PHOTOGRAPHIC PLATES for Engraving and Printing; Engraving on Glass; Photographic Enamels and stained Glass, Photographs by the Carbon Process in one frame H. GARNIER.
PARIS. 8, *Rue du Pourtour de l'Eglise-Grenelle.* Born at ; pupil of : Medal, 1862; Grand Prize, 1867.

4 PHOTOGRAPHICALLY ENGRAVED PLATES and PRINTS from the same ... J. W. SWAN.
NEWCASTLE-ON-TYNE. 21, *Leazes Terrace.* Born at ; pupil of : Silver Medal, 1867.

ARCHITECTURAL DESIGNS AND MODELS.

Architectural Designs, &c.

1 RESTORATION OF THE APPIAN WAY. Five Drawings ... ... G. A. ANCELET.
FRANCE, *Biarritz.* Born in Paris; pupil of M. Baltard: Prize of Rome, 1851; Chevalier of the Legion of Honour, 1866; Grand Prize, 1867.

2 PROJECTED BUILDINGS for Vienna, Brunn, and Pesth ... ... Chevalier H. FERSTL.
VIENNA. *Councillor of the Academy, Member of the Imperial Museum of Art and Trade.* Born at pupil of : Grand Prize, 1867.

3 PROJECT FOR THE DECORATION OF THE INTERIOR OF A CHURCH, taken in part from the Apocalypse of St. John; nine sheets of drawings ... ... C. J. LAMEIRE.
PARIS. 44, *Rue Barbet de Jouy.* Born in Paris; pupil of M. Dennelle: Medal, 1866; 1st Prize, 1867.

4 VIEW OF THE EXTERIOR OF MANCHESTER ASSIZE COURTS ... ... A. WATERHOUSE.
LONDON. 8, *New Cavendish Square.* Born at ; pupil of : Grand Prize, 1867.

TAPESTRIES.

Tapestries.

1 TAPESTRY: subject, Still Life, after Desportes, executed at the Imperial Manufactory of Beauvais ... ... P. A. CHABAL-DUSSURGEY.
PARIS. Born at Charlieu, Loire; pupil of the School of Lyons: Gold Medal, 1867.

2 THE ASSUMPTION, after Titian, executed at the Imperial Manufactory of the Gobelins ... M****
FRANCE. Born at ; pupil of

CARPETS.

Carpets.

Exhibitors' Names.

1 A CARPET executed at the Imperial Manufactory of the Gobelins ... ... M****
FRANCE. Born at ; pupil of

2 A CARPET, made of Cashmere Wool, sent for exhibition by His Highness Dewan Singh, Chief Minister of Cashmere, designed by ... ... M****
Born at ; pupil of

EMBROIDERIES.

Embroideries.

1 SILK BANNER, embroidered by hand, with Gold and Silver ... ... M. G. BRANGWYN.
BELGIUM. Born at ; pupil of

SHAWLS.

Shawls.

1 AN INDIAN SHAWL, sent for exhibition by His Highness Dewan Singh, Chief Minister of Cashmere ... ... M****
Born at ; pupil of

LACE.

Lace.

1 LACE SHAWL, worked for Messrs. A. Lefebure and Son, Bayeux, Calvados ... A. ROUSSELLE.
FRANCE. Born at ; pupil of : Silver Medal, 1867.

DESIGNS FOR ALL KINDS OF DECORATIVE MANUFACTURES.

Designs, &c.

1 DESIGNS FOR SHAWLS ... ... BERRUS.
PARIS. 65, *Rue Montmartre.* Born at ; pupil of : Gold Medal, 1867.

2 DESIGNS FOR PLAYING CARDS AND LINEN ORNAMENTS ... ... O. JONES.
LONDON. 9, *Argyll Place, Regent Street.* Born at ; pupil of : Prize Medal, 1851; 2nd Class Medal, 1855; Medal 1862; Gold Medal, 1867.

3 MODELS FOR JEWELLERY, PLATE, AND ARTISTIC BRONZES ... ... E. PHILLIPE.
PARIS. 8, *Rue du Renard, St. Sauveur.* Born at ; pupil of : Gold Medal, 1867.

4 NEW COMBINATION of forms and colours for encaustic paving ... ... Sir M. D. WYATT.
LONDON. 37, *Tavistock Place.* Born at ; pupil of : Prize Medal, 1851; Honourable Mention, 1855; Chevalier of the Legion of Honour; Knight of the United Kingdom; Medal, 1862.

COPIES AND REPRODUCTIONS.

COPIES OF PICTURES.

Copies of Pictures.

1 COPY OF THE TRANSFIGURATION, by Raphael ... ... S. ZERI.
ROME. Born at ; pupil of

COPIES OF TAPESTRIES.

Copies of Tapestries.

1 COPIES OF GOBELINS AND BEAUVAIS TAPESTRIES ... ... M. GUICHARD.
FRANCE. Born at ; pupil of : 1st Class Medal, 1855.

REPRODUCTIONS IN GALVANO-PLASTIC AND ELECTROTYPE.

Reproductions, &c.

1 FAC-SIMILE IN GALVANO-PLASTIC OF THE CUP OF MINERVA, forming part of the Treasure of Hildesheim, lately discovered in Hanover ... ... CHRISTOFLE & Co.
PARIS. 56, *Rue de Bondy.* Established : Prize Madal 1851; Grand Medal of Honour, 1855; Medal, 1862.

2 FAC-SIMILE IN GILT ELECTROTYPE OF ROUMANIAN TREASURES, lately discovered at Petrossa ... ... J. W. FRANCHI & SON.
LONDON. 26, *Mydelleton Street.* Established : Honourable Mention, 1855.

3 ELECTOROTYPE SUIT OF ARMOUR from the original in the Louvre, Paris .. FRERES LIONNET.
FRANCE. Established : Honourable Mention, 1862; Silver Medal, 1867.

SCIENTIFIC INVENTIONS.

Scientific Inventions.

1 SPECIMEN OF CAST STEEL, manufactured by the process invented by ... ... H. BESSEMER.
LONDON. Born at : Prize Medal, 1851; Medal, 1862; Grand Prize, 1867.

2 A DYNAMOMETER, invented by ... ... General MORIN.
PARIS. Born at ; pupil of the Polytechnic School: Medal, 1862.

3 A SCREW WITH PLUS THREAD, invented by ... ... Major PALLISER.
LONDON. Born at

4 SPECIMENS OF ANILINE COLOURS, invented by ... ... W. H. PERKIN.
LONDON. Born at : Prize Medal, 1862.

5 A METEOROGRAPHIC MACHINE FOR REGISTERING THE PRINCIPAL METEOROLOGICAL PHENOMENA, invented by ... ... Father SECCHI.
ROME. Born at : Grand Prize, 1867.

Scientific Inventions.

Exhibitors' Names.

6 A REGENERATIVE GAS FURNACE, invented by ... ... C. W. SIEMENS.
LONDON. Born at : Prize Medal, 1851; 1st Class Medal, 1855; Medal, 1862; Grand Prize, 1867.

7 AN ELECTRIC TELEGRAPH, invented by ... ... Sir C. WHEATSTONE.
LONDON. Born at

8 A SPECIMEN OF HOMOGENEOUS STEEL, manufactured by the process invented by Sir J. WHITWORTH, *Bart.*
MANCHESTER. Born at : Council Medal, 1851; Grand Medal of Honour, 1855; Medal, 1862; Grand Prize and Silver Medal, 1867; created a Baronet, 1869.

9 A MAGNETO-ELECTRIC MACHINE, invented by ... ... H. WILDE.
MANCHESTER.

MANUFACTURES.

POTTERY.

Pottery.

1 VASE AND COVER; porcelain; pale-green ground, painted with flowers in natural colours. Statuette of a child forms knob of cover; gilt handles ... W. T. COPELAND & SONS.
LONDON AND STOKE-UPON-TRENT. Established : Prize Medal, 1851; 2nd Class Medal, 1855; Prize Medal, 1862; Gold Medal, 1867.

2 VASE; porcelain; amphora shaped; pale-green ground, with gilt ornaments and handles. Painted on one side with Italian landscape after Turner ... W. T. COPELAND & SONS.

3 A CIRCULAR FAIENCE DISH; light-blue ground; lilies and passion-flowers. Manufactured by ... ... T. DECK.
PARIS. 46, *Boulevard St. Jacques.* Established : Silver Medal, 1867.

4 A FLAT EARTHENWARE DISH ON FOOT. Designed by Mons. E. Reiber. In the centre a half-length female figure, holding a daisy or marguerite in her hand. On a scroll the words "A la belle Marguerite." Round the base of the foot "O Marguerite sois toujours la confidente de nos amours." Executed by a new process by ... ... T. DECK.

5 AN ARCHITECTURAL ORNAMENT IN TERRA-COTTA. Manufactured by ... H. DRASCHE.
VIENNA. *Elizabeth Strasse.* Established : Gold Medal, 1867.

6 A PORCELAIN VASE; white ground, painted with a design of flowers and foliage. Manufactured by ... ... MINTON & Co.
STOKE-UPON-TRENT. Established : Council Medal, 1851; Grand Medal of Honour, 1855; Medal, 1862; Gold Medal, 1867.

7 A PORCELAIN PLATE, ornamented by printing and gold. A new process ... MINTON & Co.

8 A STATUETTE IN PARIAN—FLORA. A new design, by John Bell... ... MINTON & Co.

9 AN EARTHENWARE TOILETTE BASIN AND JUG; new form and new pattern. Printed by surface printing... ... ... MINTON & Co.

10 A VEGETABLE DISH AND COVER; porcelain; painted with flowers, foliage, and animals. Manufactured by ... ... C. PILLIVUYT & Co.
PARIS. 46, *Rue de Paradis Poissonnière.* Established : Prize Medal, 1851; 1st Class Medal, 1855; Medal, 1862; Gold Medal, 1867.

11 A PARIAN VASE. Manufactured by ... ... VILLEROY & BOCH.
PRUSSIA. *Mettlach.* Established : Prize Medal, 1855; Medal, 1862; Gold Medal, 1867.

WOOLLEN FABRICS.

Woollen Fabrics.

1 A SPECIMEN of CHIPPING NORTON DOESKIN for riding trousers. Exhibited for its superior fineness, and manufactured by ... ... W. BLISS & SON.
CHIPPING NORTON. Established : Prize Medal, 1851; Medal, 1862; Silver Medal, 1867.

2 SPECIMEN OF SCARLET CLOTH, shown for its superior finish. Manufactured by CHARLES HOOPER & CO.
EASTINGTON, *near* STROUD. Established : Prize Medal, 1851; Medal, 1862.

3 A SPECIMEN OF LIVERY CLOTH, shewn for stoutness and colour. Manufactured by B. GOTT & SONS.
LEEDS. Established : Prize Medal, 1851; Medal, 1862.

4 A SPECIMEN OF BLACK CLOTH of superior finish. Manufactured by ... ... J. SIMONIS.
BELGIUM. *Verviers.* Established : (Jury, 1851); 1st Class Medal, 1855; Medal, 1862; Silver Medal, 1867.

5 SPECIMENS OF WHITE CLOTH, remarkable for purity of colour. Manufactured by MORO BROTHERS.
AUSTRIA. *Klagenfurt, Carinthia.* Established : Honourable Mention, 1851; 1st Class Medal, 1855; Medal, 1862; Silver Medal, 1867.

CARPETS.

Carpets.

1 A BORDERED TAPESTRY VELVET CARPET. Manufactured by ... J. CROSSLEY & SONS.
HALIFAX. Established : Prize Medal, 1851; Medal of Honour, 1855; Medal, 1862.

2 AN IMITATION SAVONNERIE CARPET. Manufactured by SALLANDROUZE DE LA MORNAIX & Co.
FRANCE. *Aubusson, Creuse.* Established : Commissioner for France in 1851; Juror in 1855; Juror in 1867.

SHAWLS.

Shawls.

1 A SHAWL, woven from Indian wool yarn, the finest ever spun. Manufactured by P. DUCHE & Co.
PARIS. 1, *Rue des Petits Peres.* Established : Prize Medal, 1851; 1st Class Medal, 1855; Medal, 1862; Silver Medal, 1867.

WORSTED FABRICS.

Worsted Fabrics.		Exhibitors' Names.
1	SPECIMEN of FANCY FABRIC. Manufactured from yarn dyed alpacca wool BRADFORD. *Saltaire.* Established : Grand Medal of Honour, 1855.	TITUS SALT, SONS, & Co.
2	WHITE ALPACCA. Exhibited for its fineness and delicacy of fabric. Sold wholesale at 2*s.* a yard; to be had through all retail dealers at an increased price. Manufactured by	TITUS SALT & Co.
3	A SPECIMEN of DAMASK, of original design Manufactured by ... HALIFAX. Established : Prize Medal, 1851; Medal of Honour, 1855; Medal, 1862; Gold Medal, 1867.	... AKROYD & SONS.
4	A SPECIMEN OF FANCY REP, showing excellency in make, colour, and finish. Manufactured by ... ... VIENNA. Established : Prize Medal, 1851; 1st Class Medal, 1855; Medal, 1862; Gold Medal, 1867.	P. HAAS & SONS.

EDUCATIONAL.

Educational.		
1	ATLAS OF PHYSICAL GEOGRAPHY ... ... VIENNA. *Kohlmarket.* Established : Medal, 1862.	ARTARIA & Co.
2	ANATOMICAL MODEL, showing the structure of the human frame. Constructed by 2, *Rue Antoine Dubois.* Established : Prize Medal, 1851; Grand Medal of Honour, 1855; Medal, 1862; Gold Medal, 1867.	L. AUZOUX.
3	SET OF MATHEMATICAL INSTRUMENTS. Manufactured by ... ... RUSSIA. *St. Petersburgh.* Established : Gold Medal, 1867.	G. BRUER.
4	TREATISE on method of teaching the Classical Languages ... BELGIUM. *Rieelles Brabant.* Established : Medal, 1862.	Prof. C. BRAUN.
5	TREATISE on the method of teaching Music ... ... FRANCE. : Medal, 1862.	Prof. ERMEL.
6	BLACK-LEAD PENCILS; manufactured by an improved process ... ... BAVARIA. *Stein, near Nuremberg.* Established : Prize Medal, 1851; 1st Class Medal, 1855; Medal, 1862; Gold Medal, 1867.	A. W. FABER.
7	PAPER TOYS; consisting of separate pictures of men, animals, carts, trees, &c., painted on stiff cardboard, with a block of wood glued to the feet of each, in order to enable it to stand easily. The position of the figures, &c., can be moved as desired, to form different views, and give scope to the imagination and ingenuity of the child. Manufactured by ... ... BAVARIA. *Nuremberg.* Established	HUTH & HOFFMAN.
8	TREATISE on the System of Superficial Muscles of the Human Body ... ... FRANCE. Established : Medal, 1862.	A. LAMI.
9	METHODICAL CLASSIFICATION of Botanical Specimens ... ... ITALY. *Royal Natural Museum, Florence.* Medal, 1863.	P. PARLATORE.
10	CHEAP GLOBES for the use of Schools ... ... BERLIN. Established : 2nd Class Medal, 1855; Medal, 1862; Silver Medal, 1867.	T. REIMER.
11	COLLECTION OF CHEMICAL PRODUCTS illustrative of ... ... ITALY. *Naples.* : Medal, 1862; Silver Medal, 1867.	Prof. SCACCHI.
12	PLAN OF SCHOOL BUILDINGS; programme and results of instruction at the School of ... ... FRANCE. *Creusot.* Established : Gold Medal, 1867.	... SCHNEIDER & Co.
13	COLLECTION OF MODELS for the teaching of geometry and stereotomy ... HESSEE. *Polytechnic Establishment, Darmstadt.* Established : Prize Medal, 1851; Medal, 1862; Silver Medal, 1867.	J. SCHRODER.

ANNUAL INTERNATIONAL EXHIBITIONS OF SELECT WORKS OF FINE AND INDUSTRIAL ART AND SCIENTIFIC INVENTIONS.

ALLOTMENT OF SPACE TO INDIA.

In accordance with the general rule (F) the objects will be arranged in the following classes, and the amounts of space alloted to for each class will be as follows:—

	Horizontal space in glass cases about 7 feet high.	Horizontal space on the floor, unlimited in height.	Vertical space with projection not exceeding 6 inches on walls about 15 feet high, beginning at 2 feet 6 inches from the floor.	Vertical space with projection not exceeding 6 inches on screens about 7 feet high.
	Superficial feet.	Superficial feet.	Feet run.	Feet run.
I.—FINE ARTS:				
1. Paintings of all kinds ...	.....	.....	.....	12
2. Sculpture in Marble, Stone, Bronze, or Plaster.	Unlimited space, but the objects, if many, may be liable to be arranged under open arcades, or in the Royal Horticultural Gardens.			
2*a*. Small Sculptures in other Materials.	80			
3. Engravings, Lithographs, Photographs, &c.	.....	.....	8	12
4. Architectural Designs ...	.....	.....	.....	6
4*a*. Architectural Models ...	.....	20		
5. Tapestries and Carpets, shown for their Fine Art.	.....	.....	40	
5*a*. Shawls, Lace, &c., shown for their Fine Art.	.....	.....	.....	36
6. Designs for all kinds of Decorative Manufactures.	.....	.....	.....	12
7. Copies of Ancient or Mediæval Pictures, Mosaics, &c.	.....	.....	8	
7*a*. Reproductions of large Monuments of Sculpture or Architecture.	Unlimited, if exhibited in arcades or in the open air.			
7*b*. Reproductions of small Objects.	20			
II.—SCIENTIFIC INVENTIONS AND NEW DISCOVERIES OF ALL KINDS.	.....	10	4	
	If any object is above 10 feet high, its height should be specified.			

(True copies.)

HARRY RIVETT-CARNAC,

Honorary Secretary to the Central Committee for India.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

COMPARATIVE ABSTRACT OF TRAFFIC ON THE INDIAN RAILWAYS FOR THE FIRST AND SECOND QUARTERS OF 1869-70.

	East Indian.				Eastern Bengal.		Calcutta and South-Eastern (State).		Oudh and Rohilkhund.		Punjab.		Delhi.		Madras.				Great Southern of India.		Carnatic.		Great Indian Peninsula.		Khamgaum.		Bombay, Baroda, and Central India.		Sindh.		Total of all lines.	
	Main Line.		Jubbulpore Line.												South-West Line.		North-West Line.															
	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.	1870.	1869.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
First Quarter.																																
Total earnings	718,404	709,439	36,986	30,924	41,869	43,006	2,023	2,238	6,572	5,780	27,523	29,540	58,748	30,726	97,250	94,823	30,491	23,086	17,330	16,346	767	1,024	510,207	499,958	151	...	142,436	130,409	19,779	16,804	1,710,536	1,634,103
Mean mileage open	1,131	1,131	223	223	113	113	28	28	42	42	246	246	284	174	492	492	215	185	168	168	19	19	1,063	874	7	...	312	307	106	107	4,449	4,109
Average receipt per week ...	55,262	54,572	2,845	2,379	3,221	3,308	156	172	505	445	2,117	2,272	4,519	2,363	7,481	7,294	2,345	1,776	1,333	1,257	59	79	39,247	38,458	50	...	10,957	10,031	1,521	1,292	131,618	125,700
Average receipt per week per mile	48·8	48·2	12·8	10·7	28·5	29·2	5·6	6·1	12·0	10·6	8·6	9·2	15·9	13·5	15·2	14·8	10·9	9·6	7·9	7·5	3·1	4·2	36·9	44·0	7·1	...	35·1	32·6	14·3	12·0	29·6	30·6
Second Quarter.																																
Total earnings	703,584	633,617	32,143	23,757	39,069	38,905	1,915	2,410	6,016	5,139	31,756	27,967	65,149	28,776	97,397	104,692	27,861	35,195	18,233	17,189	1,054	1,659	541,330	383,013	775	...	171,727	122,541	23,741	25,129	1,761,750	1,449,989
Mean mileage open	1,131	1,131	223	223	113½	113	28	28	42	42	246	246	308	174	492	492	215	185	168	168	19	19	1,184	874	7	...	312	307	106	106	4,594	4,108
Average receipt per week ...	54,122	48,739	2,473	1,827	3,005	2,992	147	185	463	395	2,443	2,151	5,011	2,213	7,492	8,053	2,143	2,707	1,403	1,322	81	128	41,641	29,462	60	...	13,210	9,426	1,826	1,933	135,519	111,538
Average receipt per week per mile	47·85	43·1	11·09	8·2	26·5	26·5	5·2	6·6	11·0	9·4	9·9	8·7	16·3	12·7	15·2	16·3	10·0	14·6	8·4	7·8	4·3	6·7	35·2	33·7	8·6	...	42·3	30·7	17·2	18·2	29·5	27·2

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Friday, the 30th September 1870.

The Council adjourned to the 3rd October 1870.

SIMLA;
The 20th September 1870.

WHITLEY STOKES,
Secretary to the Govt. of India.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Simla on Monday, the 3rd October 1870.

PRESENT:

His Excellency the VICEROY and GOVERNOR GENERAL of India, K.P., G.C.S.I., *Presiding*.
His Excellency the COMMANDER-IN-CHIEF.
The Hon'ble JOHN STRACHEY.
The Hon'ble SIR RICHARD TEMPLE, K.C.S.I.
The Hon'ble J. FITZJAMES STEPHEN, Q.C.
The Hon'ble B. H. ELLIS.
Major-General the Hon'ble H. W. NORMAN, C.B.
The Hon'ble F. R. COCKERELL.

MAULMAIN TIMBER DUTIES BILL.

The Hon'ble MR. STEPHEN moved that the report of the Select Committee on the Bill to legalize certain duties on timber imported into Maulmain be taken into consideration. The Committee had made no alteration in the Bill, and recommended that it should be passed.

The Motion was put and agreed to.

The Hon'ble MR. STEPHEN moved that the Bill be passed.

The Motion was put and agreed to.

CORONERS' BILL.

The Hon'ble MR. STEPHEN presented a preliminary report of the Select Committee on the Bill to consolidate the laws relating to Coroners.

PRISONS BILL.

The Hon'ble MR. COCKERELL moved that the report of the Select Committee on the Bill to amend the law relating to prisons in the Panjáb and the Provinces under the immediate administration of the Government of India be taken into consideration. He said, it would be seen that the effect of the proposed amendments was to reduce the enacting matter of the Bill by about one-third of its original dimensions.

The reports of the several officers, experienced in the administration of prisons within the territories to which the Bill applied, who had been consulted on the subject, indicated a general concurrence of opinion that the Bill, as introduced, erred mainly in its attempt to arrange matters of minute detail, which could be better regulated by rules framed from time to time by the Executive.

The original Bill was clearly obnoxious to the criticism that, whilst it aimed at completeness by going into such details as the definition of the minor duties of medical officers, gaolers, and the subordinate officers of prisons, and the regulation of the food, dress, and employment of criminal prisoners, it yet virtually recognized the impracticability of dealing exhaustively with such subjects by express enactment in its supplementary provision, under which the Local Government was empowered to make rules in relation to the same matters.

In the Provinces to which this Bill was not intended to apply, such details in the administration of prisons were provided for by rules made by the Local Governments. That system had been found to work well, and it had this obvious advantage over the plan of the original Bill, that the regulations so constituted could be constantly varied as local circumstances might require, without the necessity of recourse to the intervention of the legislature. The Committee had therefore struck out the clauses relating to the matters above referred to, leaving them to be dealt with by the Local Governments under the general power of making rules conferred by section fifty-four of the amended Bill.

The other material amendments proposed were, in relation to the following subjects, taken in the order in which they occur in the Bill:—

(1) the appointment and removal of prison officers (section eight);

(2) the power of interference in the control of prison affairs vested in the Magistrate or chief Executive Officer of the District by section thirteen;

(3) prison offences (section forty-seven); and

(4) the powers of the Superintendent to punish offences against prison discipline.

The object of these amendments and the considerations by which they were suggested for adoption were so obvious as to call for but few remarks.

The power of appointment and removal of gaolers and the subordinate officers of prisons was, by sections seven and eight of the original Bill, vested in the Local Government. Such an arrangement was not only at variance with the existing practice in regard to such appointments and dismissals, but could not possibly work satisfactorily. The effect of the amendments proposed on this head was to maintain the present system.

As in some prisons the duties devolving on medical officers and gaolers might be more than it would be reasonable to expect a single person to perform in the manner contemplated by the Bill, provision had been made for the appointment, where necessary, of a deputy medical officer and deputy gaoler.

Formerly, most prisons were under the charge of the District Magistrate, who was directly responsible for their good government. The requirements of modern prison-administration, however, demanded a closer and more constant supervision than the other multifarious duties of a District Magistrate admitted of his exercising effectively. Hence the direct connection of the Magistrate or chief Executive Officer of the District with the management and control of the details of management of prisons had been gradually severed, and under the present system such officer was very rarely Superintendent of the prison. In most cases, however, the chief Executive Officer did exercise a general extra-official control over the management of the prison, and it was considered desirable that this practice should be recognized and placed on a legal basis. The amended Bill consequently proposed to give this officer a *quasi*-concurrent authority in the general control of officers of prisons with the Inspector General of Prisons.

The enumeration of prison-offences under Chapter XI had been extended so as to include every known offence against prison discipline, and was believed now to be thoroughly exhaustive of that subject.

Perhaps the most important of the proposed amendments was the enlargement of the powers of the Superintendent of a prison in regard to the punishment of offences. Those powers under the original Bill were limited to the award of sentences of close confinement for very limited periods and the reduction of diet.

Every expert in prison-administration could testify that the person in whom the direct control of prisoners was vested, must have the power of inflicting corporal punishment. Without such power, the efficient maintenance of prison discipline was not to be looked for.

The authority of the controlling officer was likely to be greatly weakened unless corporal punishment—the only punishment of which the majority of prisoners had a wholesome fear—could be inflicted without a regular judicial enquiry and reference even to such comparatively remote authority as the Magistrate.

The Bill as amended consequently provided for the infliction of corporal punishment, and the award of solitary imprisonment upon a summary investigation by the Superintendent of offences against prison-discipline.

It also provided that, where the punishment of imprisonment was inflicted for any offence under the Act, such imprisonment should be 'rigorous.' This was considered equally necessary where the offender was an officer of the prison as in the case of prisoners.

Experience had shown that simple imprisonment had, as a punishment for offences by the subordinate officers of prisons, no deterrent effect. Presumably, the familiarity with prison-life acquired by such persons led them to disregard the disgrace and irksome restraint upon their personal liberty which in the estimation of others imprisonment of any kind involved.

Lastly, it was proposed to extend the operation of the Act to the North-Western Provinces.

An objection to this proposition had been made by the Local Government of those Provinces, apparently on the sole ground that their present system of prison-administration worked well, and consequently no change was required.

That objection, if of weight, as regards the North-Western Provinces, would be equally so as regards the other Provinces to which this Bill was intended to apply; for the system of prison-management now in force in the latter did not differ materially from that of the North-Western Provinces.

But the answer to the objection in either case was that the only material change that would be effected by this Bill was the legalization of the present system of administration, which, as the law stood, had no legal basis whatever.

The existing law on the subject of prisons was contained in the several enactments enumerated in the first Schedule to the Bill. Those enactments were actually in force in the North-Western Provinces only; but the spirit of them (whatever that term might imply) was equally applicable to most of the Provinces affected by the Bill.

This law, whilst it defined certain offences against prison-discipline and prescribed penalties therefor, in no way legalized the rules framed by the Local Governments upon which the present administration of prisons was based. The only possible authority for such rules was in the provisions of Act XVIII of 1844, but those provisions rested on the supposition that the Magistrate or Joint Magistrate of a District, acting under the general supervision of the District Judge, was the centre of the system, and such, as MR. COCKERELL had remarked, was not the case.

The Motion was put and agreed to.

The Hon'ble MR. COCKERELL then moved that in section fifty-one, line two, after the word 'prison' the following words be inserted: "ill-treating the prisoners, or."

He said that complaints of ill-treatment of prisoners by the officers of the prison were, as was well known to all who had had experience of the management of prisons, of constant occurrence. The Bill as amended contained no provision for such cases. This omission, if not rectified, would probably render their reference—though they are generally of a very trivial nature—to some Magistrate necessary, and the form of a regular judicial enquiry would have to be gone through, entailing no small inconvenience and detriment to prison-discipline. He proposed, therefore, by inserting the words above-mentioned to make such cases primarily cognizable by the Superintendent of the prison.

The Motion was put and agreed to.

The Hon'ble MR. COCKERELL moved that the Bill as amended be passed.

The Motion was put and agreed to.

PRESIDENCY SMALL CAUSE COURTS GENERAL FUNDS BILL.

The Hon'ble SIR RICHARD TEMPLE moved for leave to introduce a Bill to transfer to the Government of India the General Funds of the Courts of Small Causes in the Presidency Towns. He said that the nineteenth section of Act No. IX of 1850 provided that the fees payable in each of the Courts of Small Causes at the Presidency Towns should be paid over to an Account, termed the General Fund of the Court. In point of fact, however, this provision had remained a dead letter, and indeed could hardly be carried out consistently with the now recognized financial principle which demanded that all public income should be credited to the general revenues of the State, while all charges were debited to the expenditure of the State. The fees in question had, ever since the establishment of these Courts, been credited to the State as "Judicial Receipts" or "Law and Justice," without any special authority for such procedure. It was obviously desirable to place the matter on a sound financial and legal footing, and to treat the receipts and charges of the Presidency Small Cause Courts in the same manner as the receipts and charges of other Courts were treated, that is, by crediting the fees to the general revenues of British India and meeting the expenditure from the same source. The Bill would, accordingly, repeal the last clause of section nineteen and provide that all fees heretofore

paid over to, and now standing to the credit of, the General Funds of the Presidency Courts of Small Causes, should be paid to the Government of India for the general purposes of the State.

The Hon'ble MR. STEPHEN wished to remove a misapprehension which might, perhaps, arise as to the object of this Bill. It might seem objectionable to take away from the suitors of the three Presidency Small Cause Courts Funds which the Legislature had intended to create for their benefit; but when we looked into the facts of the case, we should find that no injustice would be done. The Funds, if in existence, would belong to no one. Neither the Judges and the other Officers of the Courts, nor the suitors, nor any other assignable person, had any sort of claim upon them. They would represent merely the excess of the Small Cause Court fees over the Small Cause Court expenses, and would, as such, form a part of the public moneys as much as any other portion of the revenue. He (MR. STEPHEN) believed that the Government might from the first have made a rule under the Act that these Funds should be applied to the general purposes of the revenue, and there was, he thought, nothing unfair in doing retrospectively by an Act of the Legislature what might have been done prospectively by an Executive order, and what, in fact, had been done by the Executive without any order. It was impossible to mention any person, or any class of persons, who would be in any way injuriously affected by the passing of this Act.

The Hon'ble MR. ELLIS did not intend to oppose the introduction of the Bill, and would not have troubled the Council with any observations but for what had fallen from his hon'ble and learned colleague MR. STEPHEN. The Hon'ble Member had attempted to combat the objections which he thought it probable the public might take to the retrospective operation of the Bill. Now he (MR. ELLIS) must confess that he shared in the probable opinion of the public in this matter. He quite concurred with the Hon'ble Mover in the view that the principle of forming a special fund for Small Cause Courts was financially objectionable: there was no more reason for such a fund than there was for a special fund for the Court of a Munsif or a District Judge, and he thought it right that the existing law should be repealed, and the Small Cause Court General Funds abolished. But the law had not hitherto remained altogether a dead letter, as the Hon'ble Mover had asserted; for whenever additions to the establishments of a Small Cause Court had been desired, it had always been usual to show that there was a surplus of the special fund available to meet the charge, without trenching on the general revenues. The alteration of the law prospectively was a very different thing from the retrospective action proposed by the Bill, and he (MR. ELLIS) still retained the opinion which he had expressed when the projected Bill was under discussion in the Executive Council. He thought that it would have been far better had the Bill not proposed to sweep into the Treasury the surplus funds which had accrued under the law as at present existing, and in this opinion the public generally would, in all probability, concur.

The Hon'ble SIR RICHARD TEMPLE, in reply, said that the funds had never been formed; that to give effect retrospectively would mean the crediting to some unformed and non-existent fund the surplus, if any, of the fees after defrayal of charges, which again would necessitate the making out a separate account from the beginning for each Court—an operation which could not now be satisfactorily performed.

The Motion was put and agreed to.

PRISONERS BILL.

The Hon'ble MR. COCKERELL introduced the Bill to consolidate the law relating to prisoners not committed by a Court.

This, as before explained, was a purely consolidation measure.

Each part of the Bill contained the substance of a separate enactment, and the Bill, as a whole, comprised the entire law relating to prisoners confined by order of any Court, except that which regulated the internal management and economy of prisons.

Act XII of 1867, the substance of which appeared in the Bill as Part II, was designated the 'Presidency Jails Act;' but, unlike other prison Acts, it had no connection with the government of prisons, beyond providing for the appointment of a Superintendent. The object of that Act was to transfer to the Superintendent the legal authority for the detention and safe custody of prisoners which had theretofore been vested in the Sheriff.

CATTLE TRESPASS BILL.

The Hon'ble MR. COCKERELL introduced the Bill to consolidate the law relating to cattle trespass. This also was a consolidation Bill. It provided for the re-enactment of the extant provisions of the three Acts which now contained the law in regard to cattle-trespass.

The only amendments contemplated by the Bill in its present shape were the provision that damages under section fourteen should be recovered as if they were fines, and the extension of the law in regard to injury done by pigs to private property to the case of a public road similarly damaged.

PENAL CODE AMENDMENT BILL.

The Hon'ble MR. STEPHEN moved that the Bill to amend the Penal Code be re-committed. He said that he had not in any degree changed the views he had expressed upon the main provisions of the Bill, in consequence of the criticisms which had been made upon them by the European and Native Press; but as the subject was an important one, and as certain amendments of detail appeared to be desirable, he made the present motion. He was determined to bring the matter forward at the earliest possible opportunity after the return of the Government to Calcutta, and on that occasion to state, in the fullest and most public manner, the reasons which led to the introduction of the Bill, and the objects which it was meant to effect.

The Motion was put and agreed to.

CRIMINAL TRIBES BILL.

The Hon'ble MR. STEPHEN moved for leave to introduce a Bill to provide for the registration of criminal tribes and eunuchs. He was glad to be able to say that as far as his experience had gone, he did not think that the natives of India were by any means a peculiarly criminal people. He thought that Bombay and Calcutta might, in this respect, compare by no means disadvantageously with Liverpool and Birmingham, and he was informed that many parts of the Mofussil produced far less crime in proportion to their population than parts of England. There were, however, certain parts of India, and in particular the North-Western Provinces, the Panjáb and Oudh, in which crime was carried on in a manner altogether dissimilar to anything which was known in Europe. In certain parts of the country there were tribes of criminals who carried on theft and robbery as regularly, as systematically, and with as little sense of criminality as if they were following the most legitimate pursuits. Accounts of these tribes had reached the Government from various quarters. He (MR. STEPHEN) would read a few selected passages from the papers before him; but, if necessary, he could increase the amount of evidence upon the subject to almost any required amount. The following description of the habits of these tribes was

given by Major Nembhard, the Commissioner of East Berar—a District which did not form the home of these tribes, but was one of their principal places of resort for the purpose of plunder. After enumerating several tribes he proceeds:

"We all know that traders go by castes in India: a family of carpenters now will be a family of carpenters a century or five centuries hence, if they last so long, so will grain-dealers, blacksmiths, leather-makers, and every other known trade. A carpenter cannot drop his tools and become a *banya*, or a *lohár*, or anything else. The only means of subsistence open to him other than the trade to which he is born is agriculture; but in ninety-nine cases out of a hundred, if he is born a carpenter, he will live and die a carpenter.

"If we only keep this in mind when we speak of 'professional criminals,' we shall then realize what the term really does mean. It means a tribe whose ancestors were criminals from time immemorial, who are themselves destined by the usages of caste to commit crime, and whose descendants will be offenders against the law, until the whole tribe is exterminated or accounted for in the manner of the thugs.

"Therefore, when a man tells you he is a Badhak, or a Kanjar, or a Sonoria, he tells you (what few Europeans ever thoroughly realize) that he is an offender against the law, has been so from the beginning, and will be so to the end; that reform is impossible, for it is his trade, his caste, I may almost say his religion, to commit crime."

This general description was fully borne out by other evidence; but a fuller notion of the character of these tribes might be obtained from a consideration of a very full account of one of them, it took, indeed, the shape of a regular history, which had been forwarded to Government by order of the Chief Commissioner of Oudh. This tribe was called the Burwar tribe, and its home was in the Gondah District. Its history began with a very significant and characteristic myth:

"More than four centuries ago, one of the tribes was ploughing a field close to a river. A woman who belonged to the family of a rich banker came to the river bank to bathe, and having taken off her necklace of pearls of great value, put it on the ground and went into the water. A kite or crow took the pearl necklace in its claws or beak and flew away. This jewel fell into the field which the Kurmí was ploughing. He took it up, was pleased with the prize, and went home and gave it to his wife. He then thought to himself that when a bird could take away such a valuable article, why should not he, who was a human being, betake himself to freebooting. After considering this matter deeply, he started on a journey, and in a short time obtained so great a wealth that all his forefathers could not have earned it by means of ploughing. Flushed with this success he spent the whole of the remainder of his life in predatory occupation, and laid the foundation of the Burwar clan. He proselytised a hundred men of his class, who after his death made further improvement in their art of freebooting. But the rest of the clan who still adhered to their peaceful occupation of agriculture, excommunicated and even turned them out of their villages. The party was then small in number, and began to live a nomadic life in the groves of Putna, and subsisted on no other occupation than freebooting. As this kind of robbery, which is done openly and is termed Buryar, these men acquired the same appellation, which was afterwards corrupted into Burwar. About 250 years ago, being chased by the people and rulers of the day, these Burwars left the groves of Putna, and having separated into three gangs, one (from which the Sonoria tribe appear to have sprung up) proceeded towards Delhi; the other, who appear to be the same as the Ahírias and Udhs, went to Sítapúr and Hurdui, and the third to Buhrolí in Zila Gorakpúr."

The custom of these people, as of most of the other wandering tribes, was to live quietly for a considerable part of the year in their own District, and to spend the rest of it in wandering about the country to great distances plundering. They had a regular organization for the purpose, and their pursuits were carried

on under the sanction of religion. Every Burwar child went through a sort of religious initiation on the twelfth day of his life, which was supposed to be essential to his success as a thief. When he grew up, he was a thief, as a matter, so to speak, of duty and necessity. "If a Burwar in his sound body and physical health, and without any sufficient cause, renounce his thieving profession, he is excommunicated from the brotherhood and excluded from participation in its spoils." The brotherhood, as he (MR. STEPHEN) had already observed, was a regular organization. The Burwars were divided into gangs of from 20 to 50 men each under a chief, called Sehwa. "All the household expenses of the family of a Burwar of the gang are supplied on emergency by its head. While the Sehwa remains at home, looking after the families of his gang, the gang goes out to remote places for thieving purposes, and whatever property it acquires in theft, it places entirely before the Sehwa, who divides the same," according to a fixed rule, "among his subordinates. None of the gang is allowed to withhold any portion of his property from the Sehwa, who is looked upon as absolute master of the whole." At the end of the rainy season the Sehwas consult astrologers as to the most auspicious time for starting on their journey. They perform ceremonies, attend to omens, and travel in all directions and for great distances upon their business of plundering. On their return their plunder is divided according to a fixed rule. They first set aside 3¾ per cent. for offerings to their gods; of the remainder 28 per cent. is divided between the thief and the Sehwa, and the remainder equally amongst the whole clan.

He (MR. STEPHEN) had described the proceedings of these people somewhat minutely, because they might be taken as a specimen of the classes against which the proposed Bill would be directed. The Burwars, however, were by no means the most important or dangerous of the criminal tribes. After all they were only petty thieves; but others, as, for instance, the Mínas of Gurgaon, were robbers and dacoits, capable of the commission of the most desperate concerted crimes. Others, as was the case with several of the Panjáb tribes, were habitual cattle-stealers. Mr. Mayne, the Commissioner of Allahabad, and formerly the head of the Police of the North-Western Provinces, had given a list of no less than twenty-nine tribes who lived in the North-Western Provinces and carried on criminal pursuits of various kinds. The proceedings, however, of each of these tribes had this leading point in common; they had during part of the year a fixed residence, and during other parts of it they wandered about for criminal purposes.

This fact suggested the remedy which had, in fact, been tried in the Panjáb with respect to these tribes, and which it was now proposed to establish by law in that Province, in the North-Western Provinces (where somewhat similar experiments have been tried), and in Oudh. The remedy was to put the tribes under supervision in such a manner as to confine them to their homes, or, at all events, to provide the means of giving notice to persons likely to be injured by their depredations. The supervision consisted in forming a register of the members of the tribes, compelling them to reside within certain local limits, forbidding them to leave those limits without permission, and authorizing their apprehension if they should be discovered beyond them, and their transmission to the place where they ought to live. This last provision is the only one in the Bill which would be made applicable to the whole of India. The provisions as to registration would apply to those Provinces only which had been ascertained to form the place of residence of the tribes in question.

This system was in force, and, as the Government are informed, with very good results, for about twelve years in the Panjáb; but, at the end of that time, the question of the legality of the Executive rules upon which it was based was brought before the Chief Court, and they decided that the rules were illegal. The result of this naturally was to put an end to the whole system, and this, in its turn, is stated by the Government to have produced very bad results. In

a memorandum on the subject Sir Donald McLeod made the following remark:—

"The existing law is wholly insufficient, and I do not think that any one who has had much experience in the detection and prevention of organized crime will attempt to assert that it supplies all that is urgently required, while the remonstrances which have poured in upon the Panjáb Government from Police, Deputy Commissioners, and Commissioners, and even from Tahsíldárs and other members of the Native community since the ruling of the Chief Court in regard to the surveillance of criminal classes was issued, sufficiently attest the difficulties which have resulted from this course."

This led him (MR. STEPHEN) to speak of the objections which had been made to the rules proposed to be enacted. They might be resolved into two: one objection was that they would lead to oppression by the police, and another that they constituted an interference with the liberty of the tribes in question, and that the ordinary criminal law, which made it an offence to belong to a criminal tribe, and which enabled Magistrates to take security for good behaviour from habitual offenders and persons of known bad character, was sufficient for all purposes.

With regard to the question of Police oppression, he (MR. STEPHEN) fully admitted that the danger did exist. He thought, however, that it might be guarded against and reduced to a minimum, and he believed that if the Magistrates worked the Act carefully, this might easily be done. That annoyance and interference would be experienced by the tribes subjected to the operation of the Act was probable, but that could not be helped. When it came to a question whether the criminals were to be annoyed by the police, or the public annoyed by the criminals, he (MR. STEPHEN) would prefer the first branch of the alternative.

As to the second objection, he had always observed that English lawyers and law-courts had a most exaggerated estimate of the power of the ordinary criminal law to cope with organized crime. To suppose that the ordinary processes of law would ever put down crime was like supposing that sportsmen would exterminate game. The very utmost that the ordinary course of criminal justice ever had done, or ever would do, was to impose a certain amount of check upon crime, to keep it down to a certain level. A man proposing to commit a crime knew that he ran a risk of punishment, and this no doubt was a motive to a certain extent for not committing it; but all experience showed that the motive was not progressive. Ordinary criminal law did not put an end, or tend to put an end, to crime; it dammed or embanked the stream, but it neither diverted or drained it. When criminals formed, as in the case in hand, an organized class, a sort of body corporate, it was a fortunate circumstance for society, for it rendered them far easier to deal with than if they acted individually. It was possible to attack and break up the organization, and when that was done there was reason to hope that the individuals would not continue the crimes which they learned from it and carried out by its means.

This naturally suggested the question of reform,—a question which had been raised by the High Court of Allahabad in a paper very lately received. This paper admitted that the legislation on the subject was necessary, but suggested that its object should be to encourage the Local Governments to settle the tribes in question upon waste lands or elsewhere, where they might be gradually accustomed to a course of honest industry. He (MR. STEPHEN) thought that such a course might, in many cases, be highly beneficial, but he did not see what legislation was required for the purpose. The course he apprehended might be somewhat as follows:—The Local Government might inform a criminal tribe of their intention to put them under the regulations imposed by the Act. The tribe might then very reasonably enough say,—"give us then the opportunity of living as honest men," and if the

Local Government were able to make a grant of waste lands, and subject the tribe settled on them to rules passed under the Act, the arrangement would no doubt be an excellent one. The Bill, as framed, would enable the Government to make such rules. No Bill was required to enable them to grant lands.

There was one important omission in the Bill on which he (MR. STEPHEN) would say a few words in order that it might not be supposed to have been made through ignorance. No provision was made for the case of wandering tribes who had no fixed place of residence during any part of the year. There were many of these tribes grain-sellers, mat-makers, and others who led a vagrant life, and who, it was said, were much addicted to crime. There was, however, this difference between them and the tribes at which the Bill was levelled. The wandering tribes had, for the most part, honest occupations which were by no means a mere pretence, and which made it necessary for them to wander. Many of the grain-sellers, for instance, were exceedingly useful members of society, and though others frequently committed crimes, they did not make a regular profession of it under the rules of a regular organization like those of the Burwars or the Mínas. Without stronger facts than were at present before the Government upon the subject, it would hardly, MR. STEPHEN thought, be justifiable to subject such tribes to a passport system. If, however, any real necessity for such a step could be shown to exist, it would probably not be difficult to provide the legislative measures necessary to carry it out.

MR. STEPHEN now came to the second part of the proposed Bill which was directed against eunuchs. The subject was so disgusting that he felt the greatest reluctance in approaching it at all, and nothing but an imperative sense of duty could have induced him to refer to so loathsome a subject. The matter to which he was about to refer had been known to the Government of India for many years, as appeared from various papers on official record; but successive Governments had not seen their way to legislation, partly, perhaps, because more freedom of action was formerly entrusted to the Executive than was consistent with our present views, partly because doubts were entertained as to the proper course to take, and, perhaps, to a certain extent, because of the extremely disgusting and filthy nature of the subject. Whatever might have been the cause of the delay which had taken place, MR. STEPHEN was of opinion that it ought now to terminate. The eunuchs of the North-Western Provinces were as great a disgrace to human nature and to every Government which permitted their infamous association to exist as thuggee, infanticide, suttee, or any other abomination of the same sort. In plain words, it was officially proved that there existed in the Provinces in question an organized association of eunuchs who carried on a system of unnatural prostitution. They perpetuated their class by kidnapping and castrating boys whom they either bought from the kidnappers or stole themselves. The boys were used for the purposes of their trade. The men solicited employment by public exhibitions of singing and dancing often dressed as women. These facts had been proved on many occasions from 1852 (to go no further back) down to the present time. In some cases, men had been tried and convicted for kidnapping, mutilation, and other specific offences under the Penal Code, and had been punished with the severity which their crimes deserved; but the system still continued, and MR. STEPHEN was convinced that it would continue till a direct attack was made upon the organization itself, apart from the punishment which would, of course, continue to be awarded to the abominable crimes in which its character was occasionally displayed. It was unnecessary to shock the Council by going into details. They were printed in horrible abundance in the proceedings of the North-Western Provinces Government, and the depositions of the children who had been kidnapped and mutilated were, perhaps, as frightful stories as were ever told in the world. One circumstance specially deserved notice: these wretches had a sort of king or head man, and formed a community having considerable property. The then Inspector General of Police wrote in 1866,—"These creatures live under a government of their own; they have

a king (Dilsukh Raí is his name, and he is, or was, resident in Delhi), and in these Provinces Náibs or Deputy Governors at Farakhabad, Mainpúri, Jaloun, certainly, and it is believed also at Amba in the Bareilly District, and at Jounpúr. Under the Naibs are Gurus who are the Surgeons of the class, and their assistants who were also guardians or keepers of the boys after emasculation and until sold or apprenticed for most infamous purposes." In some instances, persons joined this association voluntarily and with a view to participation in its property.

Such were the facts with which the Government had to deal, and MR. STEPHEN was of opinion that the evil was one which ought to be crushed at all hazards, and no matter who objected to the process. He did not, however, believe that any considerable section of Native society, when they knew these facts, would regret or restrict the interference of Government. He thought, on the contrary, that the vast majority of the people would feel that the existence of an organized class of kidnappers and mutilators of children for such purposes as these was an affront and injury to every honest man in the country.

What, then, were the measures which Government proposed? They were that a register should be formed of all such eunuchs as there was ground to suspect of any connection with proceedings of this sort. Such registers had, in fact, been formed in many Districts, as the facts were notorious, but at present the Government had no legal power to form them, and no legal consequences followed from a man being registered. The task, of course, was one of delicacy and difficulty, and it could be discharged only by the aid of local knowledge and experience. This the Local Governments and District Officers would, no doubt, be able to supply. The course taken would be as follows:—The Local Government would be empowered and directed to form registers of such classes of eunuchs as they thought ought to be registered with a view to the suppression of the system described. It would become their duty to take care that no persons came upon the register to whom the Act was not intended to apply. Domestic servants, for instance, in Muhammadan families of rank would not be registered, and probably other classes might be exempted. When, however, an eunuch was placed on the register, he would be put under very stringent disabilities. He might be required to register his property, and would be incapacitated from disposing of it by will or otherwise, so that none of his associates would get any share of it at his death. He would be prevented from travelling without permission as a member of a criminal tribe. He would be made liable to heavy penalties if he had in his house, or in any way under his orders or control, any boy under sixteen years of age. He would be forced to account for any castrated boy under that age who might be found under his control or care, and would be presumed to have obtained possession of such boy for an unlawful and immoral purpose unless he could prove the contrary. Lastly, all eunuchs would be absolutely forbidden to appear in public in women's clothes, or to dance for hire or otherwise either in the public streets or in private houses. Stringent as such measures might be, he (MR. STEPHEN) believed that nothing less would break up the infamous association to which he had described.

The Motion was put and agreed to.

The Council then adjourned *sine die*.

SIMLA;
The 3rd October 1870.

WHITLEY STOKES,
Secretary to the Govt. of India.

No. 40 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, OCTOBER 15, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

HOME DEPARTMENT.

EXPERIMENTS IN SERICULTURE AT DHARWAR AND THE UTILIZATION OF THE ALOE AND OTHER FIBRE-PRODUCING-PLANTS.

Extract from the Proceedings of the Government of Bombay in the Revenue Department,—No. 4413, *dated 14th September* 1870.

READ the following letter:—

From SURGEON M. M. MACKENZIE, Superintendent of Jail, Dharwar, to the Secretary to the Government of Bombay, Revenue Department, —No. 202, dated 15th August 1870.

I HAVE the honor herewith to submit, for the information of His Excellency the Governor in Council, a printed summary of my efforts in sericulture, the utilization of the wild aloe, and to a certain extent also of other plants or shrubs producing fibre; these experiments, with silk and aloes, date from 1866, but with the other articles only from this and the preceding year.

Silk.—When I first commenced my experiments in silk culture, I had no idea that I would carry them out so extensively; but as I found my efforts rewarded, and success undoubted, I was encouraged to go on with them from year to year; but had I in the outset deemed that such would have been the case, I would have submitted regular detailed reports to Government direct.

2. I now beg to present them in a complete form brought up to the end of June of this year; and being now convinced by practical experience of the capabilities of this climate for a great remunerative and successful extension of such works, I will leave it with Government or private parties to carry them out to their full extent, but I will retain only a few of the silkworms for the benefit of any who may desire to have them.

3. My previously *reported* experiments date from June 1868 to September 1869, and this last one from October 1869 up to the end of June of this year, giving respectively three trials of ten, six, and eight months.

4. In order to satisfy myself that my former anticipation and deductions were correct, not only as to the actual production of silk, but through care and attention as to the possibility of a gradually increasing yield, I set apart equal quantities of cocoons chosen promiscuously from each experiment, and the results I beg to present in a tabular form, giving the results as per lbs. 100.

Statement showing results compared with the previous experiments.

First experiments during 10 months.				Second experiments during 6 months.				Third experiments during 8 months.			
Weight of cocoons.	Weight of raw silk.	Yield per month.		Weight of cocoons.	Weight of raw silk.	Yield per month.		Weight of cocoons.	Weight of raw silk.	Yield per month.	
		Cocoons	Raw silk.			Cocoons.	Raw silk.			Cocoons.	Raw silk.
lb. oz. dr.	lb. oz. dr.	lb. oz. dr.	lb. oz. dr.	lb. oz. dr.	lb. oz. dr.	lb. oz. dr.	lb. oz. dr.	lb. oz. dr.	lb. oz. dr.	lb. oz. dr.	lb. oz. dr.
88 5 8	5 15 0	8 13 0	0 9 8	57 5 0	4 15 8	9 8 0	0 13 4	113 6 12	11 4 12	14 2 0	1 6 9

Statement showing proportionate results compared with previous experiments.

First experiments, 10 months.		Second experiments, 6 months.		Third experiments, 8 months.	
Cocoons.	Raw silk.	Cocoons.	Raw silk.	Cocoons.	Raw silk.
lb. oz. dr.	lb. oz. dr.	lb. oz. dr.	lb. oz. dr.	lb. oz. dr.	lb. oz. dr.
100 0 0	6 11 0	100 0 0	8 11 0	100 0 0	9 15 0

The above shows a steady increase in each period, the last yielding 3 lbs. 4 ozs. over that of the first.

5. As in previous reports, I now also append a statement of the monthly yield for the past eight months, showing a product of 11 lbs. 4 ozs. 12 drs. raw silk, out of 113 lbs. 6 oz. 12 drs. cocoons, and which, after deduction of convict labor, leaves a profit of Rs. 48-6-0 out of Rs. 90-6-0, or a clear profit of 110 per cent. on the value of the labor; these rates are of course based upon convict labor, which is taken at an average of 2 annas a day, or 3*d.* in English money. Of course, even with free labor, all of it can be carried out by the employment of women and children, except the throwing or throwsting operation, *i.e.*, removing the silk from the cocoons; this individual (and only one is employed in the jail) may be put down at 12 annas, while in the non-working intervals he may well act as general supervisor. The usual labor rates in these districts are, for male adults, from 3½ to 4 annas per day, women 2½ to 3 annas, and for children, from 1 anna to 1½. Carrying the experiments on still further through their bleaching, washing, and dyeing processes, and taking the Hooblee market rate of dyed and dressed silk at Rs. 18 per pound, it gives a profit, after deducting the convict labor, &c., of Rs. 115-15-6, or 132¾ on the outlay.

TABLE No. 1.

Result of silk cultivation in the Dharwar Jail from October 1869 *to June* 1870, *inclusive, eight months.*

Months.	Weight of cocoons.	Weight of raw silk.
	lb. oz. dr.	lb. oz. dr.
October	4 6 4	0 8 8
November	28 5 8	2 14 0
December	1 15 0	0 2 8
January	5 8 0	0 7 4
February	21 5 0	2 10 8
March and April	25 6 0	3 1 8
May	6 1 0	0 10 0
June	20 8 0	0 14 8
Total ...	113 6 12	11 4 12

TABLE No. 2.

Statement showing results of the above as worked at the Dharwar Jail.

Raw Silk.

	Rs. A. P.	Rs. A. P.
Value of 11 lbs. 4 ozs. 12 drs. raw silk at Rs. 8 per lb. ...	.....	90 6 0
Deduct—		
Convict labor, collecting leaves, feeding worms, &c., 208 aggregate number of days, at 2 annas ...	26 0 0	
Throwsting paid at Rs. 2 per month, or 24 working days in all...	16 0 0	
		42 0 0
Profit on raw silk, Rs. ...		48 6 0

110 per cent. profit on outlay for labor.

TABLE No. 3.

Dressed and Dyed Silk.

	Rs. A. P.	Rs. A. P.
Value of 11 lbs. 4 ozs. 12 drs. dyed silk, at Rs. ...	.....	203 0 0
Deduct—		
Loss in weight while bleaching, at 4 ozs. per lb ...	50 13 0	
Convict labor, carding, twisting, unwinding 112 aggregate number of days, at 2 annas ...	14 0 0	
Bleaching and dyeing, at Rs. 2 per lb (Hooblee rate)	22 9 0	
		87 6 0
Profit on dyed silk, Rs. ...		115 15 6

132¾ per cent. profit on outlay for labor and loss of weight.

6. If free labor is utilized, the profit on raw silk for the outlay, as will be seen from Table No. 4, will be Rs. 46-6-0, or 105¼ per cent. on outlay for labor.

7. Dyed and dressed silk by free labor will give, as shown by Table No. 5, a profit of Rs. 73-15-6, being at the rate of 57 per cent. on the outlay for labor and loss.

8. It will be observed that while dressed and dyed silk carried on by convicts gives the highest profit, the profit is smaller with free labor, the latter being so much higher than the former as to daily wage.

TABLE No. 4.

Statement showing probable results of the above worked by free labor.

RAW SILK.

	Rs.	A.	P.	Rs.	A.	P.
Value of 11 lbs. 4 ozs. 12 drs. raw silk, at Rs. 8 per lb. ...	.....			90	6	0
Deduct—						
Labor for collecting leaves, feeding worms, &c., 208 aggregate number of days, at 2 annas ...	26	0	0			
Throwsting 24 days, at 12 annas	18	0	0			
				44	0	0
Profit on raw silk, Rs. ...				46	6	0

105¼ per cent. on the outlay for labor.

TABLE No. 5.

DRESSED AND DYED SILK.

	Rs.	A.	P.	Rs.	A.	P.
Value of 11 lbs. 4 ozs. 12 drs. dyed silk, at Rs. 18 per lb	.....			203	5	6
Deduct—						
Loss in weight while bleaching, at 4 ozs. per lb ...	50	13	0			
Labor, for carding, unwinding, and twisting 112 days, at 8 annas	56	0	0			
Bleaching and dyeing, at Rs. 2 per lb (Hooblee rate)	22	9	0			
				129	6	0
Profit on dyed silk, Rs. ...	...			73	15	6

57 per cent. on labor and loss.

9. From the above it will be seen that there would be a profit of 105¼ per cent. on the outlay for wages in the production of raw silk.

10. From this would have to be deducted rent of buildings, machinery, cultivation of the mulberry trees, taxes, &c., and which, if required, I may calculate at a future term.

11. I trust that the foregoing statements will tend to prove that my previous anticipations were correct, *viz.*, that by ordinary care and attention to the mulberry plants, keeping up for the worms a full, healthy, and liberal supply of leaves, and by the proper regulation of the ventilation and temperature of the breeding-rooms, the animals will give an increased yield of good silk, although up to what point further experiments only can determine; much will, I fancy, depend on the species tried.

12. Whether other varieties of the worm will succeed here I know not, as the nature of my position and duties obliged me to be contented with those I have (monthly variety), and which have *never at any time since* 1866 *shown the least tendency to disease or decay.*

13. From my previous observations regarding silk production in not only France, Italy, and Switzerland, but in India, China, and Japan, I am more and more convinced that climatic influence has much to do with the successful rearing of the mulberry, as well as that of the worm in all its stages. I have not yet heard or read of *any* climate in Europe or Asia where some blight or disease did not occasionally attack either the mulberry tree or leaf, and in which extremes of heat, cold, or long-continued damp did not tend to destroy the worm in some period of its growth.

14. The climate of Dharwar is such that all the year throughout it never gives extremes, while the rain-fall is spread over almost every month in the year. With such a climate I feel sure that the successful rearing of so delicate an animal as the silkworm would be undoubted, for it is excess of heat, cold, or long-continued damp that has caused the great failures that I have heard or read of in this branch of industry.

15. Should further experiments be made, I would hold out the warning that, if other species of the worm are introduced, they be not mixed up completely with those we now possess, but that a gradual acclimatization be first carried out separately. This will more especially be requisite if other breeds are introduced from a very high latitude, and to the fact of this not being attended to, am I disposed to attribute the great failure of Monsieur De Vecchi's experiments in Mysore a year or so ago (page 16).

16. Finally, while urging that further efforts be made here in sericulture, I do so on the results of my experiments carried over several years, and I found my reasons for this success on the following main points (repeated from page 11), all of which Dharwar possesses in a high degree:—

(1).—A medium degree of moist tropical heat.

(2).—A comparatively (for India) slight fall of rain throughout the year, never severe or long-continued in any one month, but spread fairly over almost every month in the year.

(3).—A slight variation in the temperature, not only by night and day, but all the year throughout.

(4).—Hot season never excessive or of long continuance.

(5.)—Soil rich black or red, and of good depth.

(6).—Ample water supply in the event of very slight or capricious rain-fall.

The following articles have been manufactured in pure silk, dyed of various colours, and always found a ready sale:—

Thirty-one scarves of various sizes—

Dhoturs for the use of Natives, each 12 × 3½; these have been merely made with some gay silk border on either side.

Cholees for women, half silk and half cotton, usually of a black and red stripe.

17. Ova have at various times been sent *viâ* the ordinary letter-post and otherwise to Khandeish, Ahmedabad, Commissioner, Central Provinces, and to Cochin. At the two former places they hatched, but shortly died, perhaps from climatic changes or want of proper care, food, &c. In the Central Provinces, they have, I hear, succeeded well, and I believe at Cochin also. The hatching of the egg of this species is, however, such a brief and rapid process (eight or nine days) that great expedition in transit is a *sine qua non*, and this we cannot always insure; much also depends on the season of the year, and the state of the weather while in transit, and when hatching.

Dharwar temperature and rain-fall for nine months, from October 1869 *to June* 1870, *continued from page* 12, *Silk Report.*

Months.	Average maximum.	Average minimum.	Fall of Rain.		Average monthly fall of Rain.	
			Inches.	Cents.	Inches.	Cents.
October 1869	89	69	5	53		
November „	87	60	0	95		
December „	90	63	2	46		
January 1870	93	64	0	38		
February „	93	68	.....			
March „	99	68	0	22		
April „	100	68	1	29		
May „	98	68	0	55		
June „	92	69	5	45		
Total ...	841	597	16	83		
Average ...	93·	66·	.....		1	·87

Mean of extreme monthly reading for nine months, from October 1869 to June 1870, inclusive.	Mean of extreme Maximum, Medium and Minimum for the above period.			Fall of Rain.		Average monthly fall of Rain.		Remarks.
	Maximum.	Medium.	Minimun.					
				Inches.	Cents.	Inches.	Cents.	
60°	100°	80°	60°	16	83	1	87	

18. *Aloe, &c.*—In addition to a final report on the working and success of the aloe, I have the honor to append also a brief statement of some other plants which have been tried to a greater or less extent, and as, commercially speaking, much depends on the resisting power of fibres in the making of ropes, &c., I have with much care taken the breaking point of each, specimens of which I now forward, each showing the breaking point. As matting, for which coir, aloe, &c., is much used, the breaking power does not so much matter, but it would be of the utmost importance in selecting ropes, &c. For the sake of experiment, I have also given the breaking power of silk :—

	Length of Rope experimented.	Diameter.	Weight.	During trial stretched to.	Weight of breaking point.
	Foot. Inches.	Inches.	Grains.	Inches.	lbs.
Silk	1 4	1/8	82	4	253
Aloe lancifoliata	.....	...	88	3 1/3	155
Calotropis gigantic, or rowee	.....	...	94	3	145
Hibiscus cannabiscus, Daccan hemp, or ambaree	.....	...	83	2 1/3	131
Cannabis sativa, or common hemp ...	.....	...	93	1 1/3	125
Gossipium Indian, common cotton ...	.....	...	83	3	119
Cocos nucifera, coir	.....	...	66	1/4	71

19. These measurements and experiments were taken with the utmost accuracy by me, in presence of, and assisted by, Mr. Scott, Engineer to the Municipal Committee, and of Mr. D'Souza, the Jailor. The fibres of each specimen were twisted by the same man, the length and circumference being made the same of each.

20. According to the above, the actual power of resistance is highest in silk, and then follows, respectively, aloe, rowee, ambaree, hemp, cotton, and, last of all, coir.

21. The article named rowee is extracted from a common weed or shrub growing in all wild and neglected places, but though the fibre is soft and good, yet until some more speedy plan can be adopted in the extraction of it, I fear it can never be brought into general use. It was first brought to my notice by an article in the *Times of India* some months since by R. Spencer, Esq., of Bombay. I beg to forward a small piece of this made into cloth.

22. In continuation of my last report to Government on the manufacture of aloe fibre, I now beg to annex the last statement I have to give on the material, promising that many months often elapse when prisoners being otherwise employed in jail, they cannot be sent out to fetch home the material :—

Manufactured and sold at the Dharwar Jail as matting during six months, viz., from February 1870 to July, inclusive.

Square feet.	Weight.	Value.	Price per square foot.	Price per pound.
	lb.	Rs. A. P.	Rs. A. P.	Rs. A. P.
3,028	1,071 1/2	141 15 9	0 0 9	0 2 1

Resolution by the Government of Bombay, Revenue Department.

The receipt of Dr. Mackenzie's letter is to be acknowledged with thanks, and copies of it sent to the Secretary of State, Government of India, the Chamber of Commerce, the two Revenue Commissioners and Commissioner in Sind, and the Collector of Khandeish.

Ordered, that copies of the above be forwarded to the Commissioner in Sind; the Revenue Commissioner, Northern Division; the Revenue Commissioner, Southern Division; the Collector of Khandeish; Dr. Mackenzie, Superintendent, Dharwar Jail; and the Chamber of Commerce (by letter No. 4415).

No. 4414.

SUBMITTED to the Government of India.

ANNUAL INTERNATIONAL EXHIBITIONS OF SELECT WORKS OF FINE AND INDUSTRIAL ART AND SCIENTIFIC INVENTIONS.

ADDITIONAL DETAILS OF ALLOTMENT OF SPACE TO INDIA IN THE INTERNATIONAL EXHIBITION OF 1871.

[The space allotted for Fine Arts and Scientific Inventions was published in the Supplement to the *Calcutta Gazette* of the 8th instant.]

ALLOTMENT OF SPACE TO INDIA.

	Horizontal space in Glass Cases about 7 feet high.	Horizontal space on the floor unlimited in height.	Vertical space with a projection not exceeding 6 inches on walls about 15 feet high, beginning at 2 feet 6 inches from the floor.	Vertical space with projection not exceeding 6 inches on screens about 7 feet high.
	Superficial feet.	Superficial feet.	Feet run.	Feet run.
III.—MANUFACTURES—				
a. POTTERY of all kinds ...	60	.....	.....	.....
	An unlimited amount of space is assigned to special objects which may exceed feet in height, which can be shown under arcades or in the open air, but due notice of them, their character and dimensions, must be given before 1st November 1870.			
a1. New Raw Materials, Machinery, and Processes for Pottery.	.....	30	4	.....
b. WOOLLEN AND WORSTED FABRICS.	.....	.....	.....	27
b1. Raw Produce, Machinery, and Processes.	.....	30	4	.....
b2. Woollens of all kinds, except Carpets.	.....	.....	.....	27
b3. Shawls ...	.....	.....	.....	45
b4. Mixed Fabrics ...	.....	.....	.....	27
b5. Carpets ...	.....	.....	40	.....
c. EDUCATIONAL—				
c1. School Buildings, Fittings, Furniture, &c.	12	.....	5	.....
c2. Books, Maps, Globes, Instruments, &c.	12	.....	5	.....
c3. Appliances for Physical Training, including Toys and Games.	12	.....	5	.....
c4. Specimens and Illustrations of the Modes of teaching Fine Arts, Natural History, and Physical Science.	12	.....	5	.....
c5. Specimens of School Work, serving as Examples of the results of Teaching.	12	.....	5	.....

IV.—Her Majesty's Commissioners undertake to find the several spaces before described, and to arrange the objects in large glass cases where necessary. The spaces must not be exceeded, or the excess of objects will be liable to exclusion. Exhibitors who prefer it may place their objects in plain black frames glazed, not exceeding three inches in depth.

V.—Provided the aggregate space of each kind be not exceeded, Foreign Commissions are free to vary the proportions here allotted. Thus, in Paintings (No. 1) and Copies of Paintings (No. 7) to be hung on walls, and with Engravings (No. 3), Architectural Designs (No. 4), Shawls (5*a*), Designs (No. 6), to be exhibited on screens, the exact allotments need not be maintained. If no Architectural Designs are exhibited, the space may be allotted to Shawls or Engravings, provided always that the aggregate space of each kind be not exceeded.

SUMMARY OF ALLOTMENT TO INDIA.

	Horizontal space in Glass Cases.	Horizontal space on Floor.	Vertical space on walls 15 feet high.	Vertical space on screens 7 feet high.
	Square feet.	Square feet.	Feet run.	Feet run.
Fine Arts	100	20	56	78
Scientific Inventions	.....	10	4	.....
Manufactures	120	60	73	126
TOTAL ...	220	90	133	204

(True Copies)

HARRY RIVETT-CARNAC,

Member of and Hony. Secy. to the Central Committee for India.

No. 41 of 1870.

SUPPLEMENT TO

The Gazette of India.

SIMLA, SATURDAY, OCTOBER 22, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

REPORT BY DR. CAYLEY, JOINT COMMISSIONER IN LADAK.

From DR. H. CAYLEY, Joint Commissioner at Ladák, to the Secretary to the Government of the Punjab,—
No. 10, dated Camp Gogra, Chang Chenmo Valley, the 19th August 1870.

MY last report was dated from Balukchi, near Shahdula, on the 5th August. On the following day I accompanied the Yarkand party to Shahdula, where I left them and started on my return journey. Mr. Forsyth and his companions were all quite well, and being taken good care of by the Yarkandís, who were making every arrangement for their comfort and rapid onward journey; and one may feel assured of their meeting with a most friendly reception, and being treated with distinction throughout their visit.

2. I returned from Shahdula by an entirely new route which proved very short and easy, and avoided many of the drawbacks of the Ling-zi-thang and Soda plains north of Chang Chenmo, which, owing to gross mismanagement, have proved so disastrous to Mr. Forsyth's camp. From Shahdula I reached Gogra, in Chang Chenmo, in twelve days' march. The route I took was from Shahdula one march up the Karakash River to Gulbasha, and then turned south over the mountain range to the Malakshah plain, which is traversed along its western side by the old Karakoram road. From the foot of this range of mountains on the southern side I crossed the Malakshah plain to its south-east corner, where grass and fuel were abundant.

The pass over the mountains above Gulbasha proved to be both high and difficult, and the preferable route to take from Shahdula is for three marches along the regular Karakoram road over the easy Sukait pass to Malakshah. From thence it is one long stage to the camping place at the south-east corner of the plain.

From this point my route lay over a low easy pass in a depression of the Karatagh range of mountains, which bounds the Malakshah plain on the south and east, and after crossing the pass turned south-east down a gently sloping valley to the camping ground, called Shorjilga in Hayward's report and map, the two routes joining at this point.

My two next marches up the Karakash River to Kizilzilga lay along the route taken last year by Mr. Hayward on his return from Yarkand, and which I traversed this season on my way to Shahdula.

From Kizilzilga I turned due south up the main branch of the Karakash for two marches to a point where the main river comes down from high mountains to the west, and then, leaving the river, continued south for about six miles to an easy pass leading over to a plain or wide valley, about eight miles across, which is erroneously marked in all the map as draining into the Shyok River, but which in reality joins by a narrow valley, the south-western extremity of the Ling-zi-thang plain, and has a high range of mountain bounding it on the west. We camped on the south side of this plain or valley, where, however, we found no grass or fuel, but plenty of water, and then in one march crossed the Chang Chenmo range of mountains by a high but very easy pass into a valley running down to Gogra, in Chang Chenmo, and which joins the old route taken by Mr. Forsyth at three miles above the hot springs.

3. The route I have just followed is very short and easy, and keeps generally along the well-sheltered valleys of the Chang Chenmo and Karakash Rivers, in which grass and fuel are plentiful. There are only two marches in the interval between these two valleys where there is no vegetation; but this, when known, is easily arranged for by carrying fuel from the previous stage.

At Shorjilga there is no fuel, but it is plentiful only four miles below.

4. This will be by far the easiest and best route for Mr. Forsyth to take on his return; and I have, by previous arrangement with him, brought with me four men from his camp, one a very active, intelligent servant of Hari Chund, of Lahoul, to learn the way. They are to go back by the same route to Yarkand and accompany Mr. Forsyth's party, and act as guides on its return.

I am now arranging also for the storing of fuel and fodder at the stages where it is not found, so that Mr. Forsyth's camp ought to be able to return without any fear of mishap. They will, of course, experience extreme cold, which can be guarded against.

5. We are unfortunate in encountering very bad weather on our return journey, which, as we were on a new route in an unknown line of country, led us into some difficulties and hardships. First, on the Malakshah plain we had snow all night, followed by a cloudy day, so that we could not see the prominent points of the opposite mountain range, the Karatagh, and had difficulty in finding our way to the low depression in the range where the pass is situated. Again, the night before leaving the head of the Karakash River, and the two following nights, we had heavy falls of snow and cloudy days; and when crossing the two passes and the plain between the Karakash and Chang Chenmo Valley, there was over six inches of snow on the ground, and we had great difficulty in finding our way in a new country when we could only sometimes see the opposite mountains, and had very uncertain knowledge of their distance; we had in consequence the misfortune to be two days and two nights without fuel in most severe weather, and were almost reduced to uncooked provisions. The coolies killed sheep and ate them raw with great relish, as they seem quite accustomed to do; the servants managed to parch a little grain with the planks of a brandy case, and also ate raw rice and corn; and I managed to warm a little soup and flour and water with a spirit lamp, and no one was the worse for the journey. I felt, however, considerable anxiety lest we should have to spend a third night without fuel in the snow near the top of the pass, as the exposure might have killed some of the party who were beginning to get exhausted.

I had with me about 40 men and four ponies, and all arrived safely, and the latter, in spite of the double journey, were in good condition as I had made arrangements and could give them grain where grass was scarce or wanting. When proper care is taken there need be no loss of baggage animals.

6. This is generally the season of unsettled weather in these regions; but it has this year been unusually severe, and the snow very heavy, and I fear that the merchants now coming over from Yarkand, and the large numbers of return coolies from Shahdula, will suffer severely.

7. Mr. Reynolds, the Surveyor, arrived here five days ago, and at once went on to meet me, and as I returned by a new route, we have most unfortunately missed. I have sent messengers after him as quickly as possible, and I hope he will be back very soon, and I propose waiting here for a day or two to meet him, as it is important that I should fully explain to him the routes to be surveyed.

8. I hear from Lé that the Yarkand kafila has not yet arrived. Very large number of traders have reached from the Punjab, and, as I expected, are terrified by the rumours of disasters on the Chang Chenmo route, and will not venture to try it. They of course attribute the catastrophe to badness of the road, and not to its real cause.

9. I hear that the dispensary at Lé, which has during my absence been under the care of the Native Doctors, is well attended.

TRADE OF LADAK DURING JULY AND AUGUST 1870.

From T. H. THORNTON, ESQ., D.C.L., Secretary to the Government of the Punjab, to the Secretary to the Government of India, Foreign Department,—No. 301—1098, dated Lahore, the 17th September 1870.

I AM desired to forward, for the information of the Supreme Government, copy of a report No. 13, dated the 9th September 1870, from Dr. Cayley, Joint Commissioner in Ladák, with Tables showing the export and import of trade during the months of July and August 1870.

Copy of report from DR. H. CAYLEY, Joint Commissioner, Ladák, to the Secretary to the Government of the Punjab,—No. 13, dated the 9th September 1870.

IN the accompanying Tables is shown in detail the trade of Ladák for the past two months.

By the end of August only a few of the merchants from Yarkand had reached Lé, and even from the side of Kullu and the Punjab most of the traders are still on their way. Many of the latter were detained in Lahoul by the breaking of the bridge at Darcha. I was mistaken in supposing that it was the Koksar bridge, as stated in my last report. The broken bridge has now been repaired and traffic re-established.

2. The Yarkandi merchants are generally coming by the Chang Chenmo route. Some praise it loudly, and the loss of baggage animals has been small; but the majority of the Karayakash, the men who hire out their horses to the merchants of Yarkand, are at present against it, partly from old ideas and prejudices, and partly from being really terrified at the sight of some 300 carcases of horses and yaks lying along the road. These men petitioned against being required to return by it. I replied that nothing would be done to force them to take our route more than another, and they were quite free to go any road they liked, and it was only for their advantage that endeavours were being made to open out an easier way; but that the Chang Chenmo route was undoubtedly the best and easiest for general traffic (more especially the new route by which I returned from Shahdula); and that next season it would be greatly improved and more complete arrangements made for the convenience of traders by the establishment of supply depôts, &c.

The arrangements this season have not been so complete as I had hoped for. With some difficulty I have had sufficient supplies of barley, flour, and other necessaries stored at Gogra, in Chang Chenmo, and at Tántsi, for the use of the traders who largely avail themselves of them. The road also has been put in fair order as far as Gogra, and several *serais*, as recommended by me last season, were built early in the year; but lately I have been able to get nothing done, as nearly all the available labor and carriage in the country has been employed in carrying stores, &c., to Shahdula, for Mr. Forsyth's return, and the Ladák authorities say that they can now give little help this season in carrying on other work.

3. The road from Kangra to Ladák, through Kullu and Lahoul, is now in capital order, and traders are all loud in praise of its excellence and freedom from obstacles; and for the first time the mule-owners of Nurpore have brought their mules all the way to Ladák, instead of only to Kullu as formerly. This is an immense boon to the merchants, as the rate of hire is already reduced to Rs. 25 the horse-load of three maunds from Nurpore to Lé, and the traders are no longer entirely dependent on the uncertain carriage procurable in Kullu and Lahoul, and the vexatious delays and high rate of hire. The mule-owners are also fully satisfied with the Rs. 50 they will receive for the double journey, now that the road is so easy and safe.

I hear that a number of laden camels are now on their way from Yarkand by the Chang Chenmo route, and they will easily be able to go on to the Punjab.

4. I have no more recent news from Yarkand beyond rumours that the Atalík has now come to terms with the Tunganís, and the Dáood Khalífa, of Ooramchi, and the fighting has ceased.

I have not yet heard anything definite of the date of Mr. Forsyth's return, or whether he has gone on to the city of Yarkand.

5. The weather this season has been most unusually severe. From the date of my leaving Shahdula till I arrived at Lé, nearly four weeks afterwards, it snowed almost every day, and I fear that many of the Yarkandi merchants will have suffered terribly, and met with serious disasters in consequence. During the last few days it has become perfectly clear and fine, and will now probably keep so for many weeks.

TABLE I.

Exports from Ladák during the months of July and August 1870.

Articles.	Quantity in Maunds of 80 lbs. by												Rate in Ladák.	Value.	Remarks.
	Kullu.		Rampore.		Kashmir.		Chanthang.		Yarkand.		Total.				
	Mds.	Srs.	Mds.	Srs.	Mds.	Srs.	Mds.	Srs.	Mds.	Srs.	Mds.	Srs.	Rs.	Rs.	
Bhang ...	37	12	...		21	36	...		...		59	8	50 ℔ md.	2,960	
Pashm, white ...	3	0	...		41	36	...		...		44	36	5 „	2,246	
„ black ...	...		...		12	3	...		...		12	3	25 „	302	
Silk ...	3	8	...		0	16	...		...		3	24	280 „	1,008	
Tea, brick ...	...		...		7	14	...		...		7	14	160 „	1,176	From Lhassa.
Indigo ...	...		...		...		7	0	...		7	0	160 „	1,120	
Cotton Piece Goods ...	...		...		2*	28	...		69	0	71	28	175 „	12,548	
Coarse Cloth ...	...		...		...		32	0	...		32	0	87-8„	2,800	
Spices ...	...		...		...		...		6	0	6	0	40 „	240	
Copper Vessels ...	...		...		7*	36	...		...		7	36	100 „	790	*To Skardo.
Sugar ...	...		...		...		...		6	0	6	0	50 „	300	
Lakhi ...	...		...		...		...		3	0	3	0	62-8„	188	
Iron ...	...		...		0	25*	...		...		0	25	20 „	13	
Borax ...	...		...		0	6	...		...		0	6	20 „	3	
Phulli ...	...		...		60	2	...		...		60	2	1-4„	78	
Saffron ...	...		...		...		1	10	...		1	10	1,080 „	1,350	
Drugs ...	...		...		...		...		4	8	4	8	50 „	210	
Majith ...	...		...		...		13	0	...		13	0	20 „	260	
Apricots, dried ...	...		...		...		330	0	...		330	0	5 „	1,650	
Currants, „ ...	...		...		...		50	0	...		50	0	13 „	650	
Sattoo ...	...		...		...		430	0	...		430	0	1-14„	707	
Barley ...	...		...		...		382	0	...		382	0	1-12„	669	
Birch, Bark Tuz ...	...		...		...		...		3	0	3	0	4 „	12	
Otter Skins ...	...		...		...		...		150 No.		150 No.		4 each	600	
Felt Rugs ...	57 No.		...		59 No.		500 No.		...		616 „		2 „	1,232	
Carpets ...	...		...		...		195 „		...		195 „		...	1,110	
Broadcloth and Velvet ...	...		...		...		...		38 thans		38 thans		100 each	3,800	
Satin ...	...		...		...		...		95 „		95 „		50 „	4,750	
Merino ...	...		...		...		...		8 „		8 „		40 „	320	
Brocade ...	...		...		...		...		95 „		95 „		100 „	9,500	
Guns and Rifles ...	...		...		...		...		626 No.		626 No.		...	49,600	
Pistols and Swords ..	..		...		...		...		15 „		15 „		...	390	
Gunpowder ...	...		...		...		...		121 boxes		121 boxes		4 each	484	
Gun Caps ...	...		...		...		...		175,000 No.		175,000 No.		8 per mille	1,400	
Cartridge ...	...		...		...		...		5,000 „		5,000 „		50 „	250	
China Cups ...	...		...		...		...		650 „		650 „		0-8 each	325	
Koran, copies of ...	...		...		...		...		33 „		33 „		40 „	1,320	Manuscripts written in Srinagar.
Leather, English ...	...		...		...		...		3 dozens		3 dozens		40 per doz.	120	
Miscellaneous ...	...		...		...		...		5 „		5 „		12 „	60	English knives, scissors, &c., &c.
Corals ...	...		...		...		150 tolas		400 tolas		550 tolas		...	1,400	
Shawls, Kashmir ...	...		...		...		25 pairs		156 pairs		181 pairs		100 pairs	18,100	
„ Bultistan ...	...		...		5 pairs		...		...		5 „		20 „	100	Taken to Kashmir to be dyed.
Yaks' tails ...	...		...		3 No.		...		...		3 No.		1-8 each	5	
Posteen ...	...		...		4 „		...		...		4 „		10 „	40	
Pattoo, Ladakhi ...	...		15 thans		1 than		...		...		16 thans		5 „	80	
Total ...	43	20	...		155	2	1,245	10	91	8	1,535	0	...	1,26,266	

H. CAYLEY,
Joint Commissioner.

TABLE II.

Imports into Ladák during the months of July and August 1870.

Articles.	Quantity in Maunds of 80 lbs. by												Rate in Ladák.	Value.	Remarks.
	Kullu.		Rampore.		Kashmir.		Chanthang.		Yarkand.		Total.				
	Mds.	Srs.	Mds.	Srs.	Mds.	Srs.	Mds.	Srs.	Mds.	Srs.	Mds.	Srs.	Rs.	Rs.	
Piece Goods	102	14	7	0	62	0	...		...		181	14	175 ₱ md.	31,634	
Coarse Cloth	9	0	...		...		...		...		9	0	87-8 „	788	
Spices	52	28	4	24	6	0	...		...		63	12	40 „	2,666	
Sugar	210	8	4	16	7	5	...		...		221	29	50 „	11,087	
Treacle	6	24	...		...		...		...		6	24	20 „	132	
Tea, Kangra	180	36	...		...		...		...		180	36	160 „	28,944	
„ brick	...		...		...		330	0	...		330	0	160 „	52,800	From Lhassa.
Indigo	3	14	3	8	...		...		...		6	22	160 „	1,048	
Copper Vessels ...	6	36	0	10	0	9	...		...		7	15	100 „	738	
Iron and Horse Shoes ...	32	24	1	38	4	2	...		...		38	24	...	892	
Opium	1	32	...		...		...		...		1	32	600 „	1,080	
Haberdashery, &c. ...	11	36	...		0	3	...		...		11	39	150 „	1,796	
Rice	10	0	...		203	12	...		...		213	12	6 „	1,280	
Tobacco	...		...		23	33	...		...		23	33	20 „	476	
Dhall	4	16	...		...		...		...		4	16	10 „	44	
Honey	13	32	...		...		...		...		13	32	25 „	245	
Senna	...		8	32	...		...		...		8	32	20 „	176	
Preserves, &c.... ...	7	20	...		...		...		...		7	20	45 „	323	
Drugs	8	36	...		4	13	...		...		13	9	40 „	529	
Apricots, dried ...	...		...		250	0	...		...		250	0	5 „	1,250	From Skardo.
Shawl, wool	...		...		...		530	0	4	16	534	16	50 „	26,720	
Bhang	...		...		...		...		49	16	49	16	50 „	2,470	
Soap	1	20	...		...		...		...		1	20	40 „	60	
Cardamoms	0	18	...		...		...		...		0	18	20 per seer	360	
Quicksilver	0	17	...		...		...		...		0	17	5 „	85	
Thread, English ..	...		...		0	8	...		...		0	8	4 „	32	
Snuff	...		...		1	4	...		...		1	4	...	120	
Saffron and leaves ...	...		...		1	8	...		...		1	8	...	790	
Specie	...		...		2	20	...		...		2	20	...	8,000	
Birch, Bark Tuz ...	...		...		3	0	..		...		3	0	4 per md.	12	
Otter Skins	2,831 No.		...		190 No.		...		...		3,021 No.		4 each	12,084	
Brocades, &c.	110 thans		...		72 thans		...		...		182 thans		...	16,460	
Broadcloth and Velvets ...	18 „		...		43 „		...		...		61 „		...	5,520	
Satin	56 „		...		55 „		...		...		111 „		50 each	5,550	
Kalgi, pheasant plumes ...	110 No.		...		...		...		...		110 No.		40 per 100	44	
Dyes, Anyline ...	49 boxes		...		...		...		...		49 boxes		10 each	490	
Shoes, &c.	21 pairs		...		693 pairs		...		...		714 pairs		...	639	
Sagri, green leather ...	...		...		102 skins		...		...		102 skins		1 each	102	
Leather, English ...	...		...		3 doz. „		...		...		3 doz. „		40 per doz.	120	
Miscellaneous... ...	...		...		231 articles		...		...		231 articles		...	192	Knives, scissors, &c.
Gunpowder	20 boxes		...		101 boxes		...		...		121 boxes		4 each	484	
Gun Caps	1,27,500 No.		...		175,000 No.		...		...		302,500 No.		8 per mille	2,420	
Cartridges	...		...		5,000 „		...		...		5,000 „		50 „	250	
Guns and Rifles ...	65 No.		1 No.		629 „		...		...		695 „		...	55,030	
Pistols and Swords ...	...		...		29 „		...		...		29 „		...	740	
Silk Fabrics	100 yards		...		17 yds.		...		..		117 yards		...	179	
Shawls	41 pairs		...		166 pairs		...		...		207 pairs		...	18,860	
Stationery, Kashmirí ...	...		...		179 articles		...		...		179 articles		..	181	
Koran, copies of* ...	100 No.		...		33 No.		...		..		133 No.		...	1,520	* Printed copies from the Punjab; manuscript copies from Kashmir,—the latter much valued.
Corals	...		...		400 tolas		...		...		400 tolas.		2 per tola	800	
China Cups	...		180 No.		650 No.		...		...		830 No.		8 annas each	415	
Saddle Cloths... ...	...		...		7 „		...		...		7 „		8 Rs. „	56	
Pattoo, colored ...	...		...		19 thans		...		...		19 thans		10 „	190	
Wooden Boxes ...	...		...		12 No.		...		...		12 No.		2 „	24	
Felt Rugs	...		...		...		...		200 No.		200 „		2 „	400	
Ingots	...		...		...		...		9 „		9 „		170 „	1,530	
Gold Dust	...		...		...		...		104 tolas		104 tolas		13 „	1,352	
Total ...	738	21	30	8	610	5	860	0	53	32	2,292	26	...	3,09,002	

H. CAYLEY,
Joint Commissioner.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

PROGRESS MADE ON IRRIGATION AND OTHER AGRICULTURAL WORKS IN BENGAL.

From COLONEL F. H. RUNDALL, R.E., Joint Secretary to the Government of Bengal in the Public Works Department, Irrigation Branch, to the Secretary to the Government of India in the Public Works Department,—No. 588 I, dated Fort William, the 8th September 1870.

I AM directed to forward herewith the Chief Engineer's Progress Report of Irrigation and other Agricultural Works for 1869-70, together with copy of a Minute thereon by the Lieutenant-Governor, dated the 4th instant.

Chief Engineer's Progress Report of Irrigation and other Agricultural Works for the year 1869-70.

I.—ORISSA CIRCLE.

The works of the late East India Irrigation and Canal Company in Orissa were transferred to the Government on the 1st January 1869.

The circle at present comprises the following *five* Divisions, namely,—

(1) The Pooree Division.
(2) „ Mahanuddy „
(3) „ Beropah „
(4) „ Brahminee „
(5) „ Workshop „

The works carried out during the year 1869-70 in each Division are as follows:—

(A.)—EXTRAORDINARY WORKS.

POOREE DIVISION.

1.—*The Anicut across the Katjooree at Naraje.*—The sluices in this weir, consisting of 15 vents of six feet each, were completed this year. The whole are built of laterite masonry founded on rock, the surface of which, proving to be not very sound, was first removed, and a flooring of "concrete" substituted.

Previous to the floods of last year the weir was strengthened at its left flank by an extension of the apron for a short distance, and, after they had passed, not a single stone was found to have been displaced. It will be proper to notice here the action of this weir, and the changes which have been brought about thereby in the bed of the Katjooree. The contraction of that river (from 6,350 feet to 3,750 feet in width) has led to the shoaling of the bed above the anicut and to the raising of the bed below, and the practical effect of these alterations is that for a flood 21 feet above the low water level of the Mahanuddy at Naraje only about one-half the volume of water which passed down the Katjooree in 1856 now flows past the Lall Bagh, where for the same stage of flood at Naraje itself the surface level of the river has been lowered 15 inches. Even since 1866 the diminution in the discharge of the Katjooree is very marked. The disappearance of the afflux at the north end of the anicut, and the rapid filling up of the basin in the rear, have reduced the plunge and scour on the apron very materially.

The wing wall of the anicut has been completed, and the dividing embankment behind it has been finished, sloped, and trimmed.

MAHANUDDY DIVISION.

1.—*The Mahanuddy Anicut* has been completed, with the exception of the shutters, some trifling upper works to the abutments, and the gearing to the centre sluices. The anicut with its present section has now successfully sustained the action of the floods for three seasons.

The operations of the past year were confined to—

1*st*, the packing of the rear apron, and substituting blocks of laterite for sandstone in the more exposed parts, where experience has shown the superiority of laterite in resisting the wearing action of the current;

2*nd*, the completion of the centre sluice shutters and apron;

3*rd*, the completion of the abutments and wing walls on both flanks.

The sluices in this anicut have been built after one of the French models, and with the exception of some minor appliances were completed in June 1869. Their working has been most satisfactory. On the 24th October last, after having been exposed to a powerful current for nearly four months, they were again raised just as the last flood of the season was passing off. Their action was most efficient, and in less than three hours a discharge of about 30,000 *cubic feet a second* was arrested. Until the present season there has been no opportunity of fairly observing the effects of the wide openings presented in the centre of the anicut where these sluices are placed. In previous years the free discharge of the river was obstructed by the remains of temporary dams which checked the action of the current on the apron below as well as on the sand shoals which have been gradually accumulating above the anicut. No marked effect was produced by the sluices during the floods of 1869 on the sand banks in a direct line with the openings, but the shoals, or rather islands, are so extensive in area, and have attained such a consistency owing to the spread of the reed-grass that the operation of the sluices can only be gradual. The lower edges of the sand banks are, however, being scoured away, and one of the intermediate channels has been deepened by the strong draught towards the sluices.

2. *Head Lock of Toldundah Canal.*—The masonry of this work, which had been begun previous to the commencement of the year under review, was vigorously carried on, and by the 31st March 1870 the sills were laid and the walls raised to a height of four feet above the floor. The lock channel was also completed by the same time.

3. *The Head Sluices of the Toldundah Canal.*—The bridge and roadway over these sluices have been completed, and the river face between the anicut and head lock has been protected by a stepped revetment of dry laterite blocks.

4. *Toldundah Canal.*—The progress on this canal has been retarded from various causes. During the past year the first seven miles as far as Beerabattee were completed, and water admitted early last February. Two bridges leading to the town of Cuttack have also been completed on this portion. The regulating lock at the head of this canal was so nearly completed that it was possible to make use of it for navigation, and local traffic has already commenced on the short distance of the canal opened.

The first lift lock and calingulah at Beerabattee, where the Machgong Canal takes off, have been commenced and a large quantity of material deposited.

Two-thirds of the earth-work of the remaining 17¾ miles of the Toldundah Canal have been completed.

A large irrigation sluice, to supply 12,000 acres with water, has been commenced at the fifth mile. Scarcely any portion of the distributaries from this canal has yet been carried out, but detailed surveys of the tract of country lying between the Rivers Mahanuddy and Katjooree are being made as rapidly as the establishment at disposal will admit of. Upwards of 12 square miles have been covered with a net work of levels, and 26 miles of distributary channels marked out.

5. *Machgong Canal.*—The excavation for the foundations of the lock and calingulah at the head of the Machgong Canal has been completed, and a large quantity of materials (chiefly bricks) have been collected for the locks at Sonepore and Tarpore, and the intermediate syphons.

A length of 14 miles of this canal has been nearly completed. The alignment of three distributaries has also been fixed, but no work has been as yet commenced.

BEROPA DIVISION.

Kendrapara Canal.—This canal was opened for public traffic throughout from Cuttack to tide water at Marsaghai in June 1869.

The following masonry works were completed in the first quarter of the year:—

Locks and calingulahs at Dhanpore, Bouspore, Kulparrah, and Marsaghai, and an escape with iron girder bridge in the middle of the last reach.

Twenty-three miles of main distributaries and seven miles of minor channels have been completed, making a total length of 154½ *miles* of main and branch distributaries. Three of the former have been provided with regulating head sluices, and 26 minor regulating masonry works have been constructed, by which means 13,000 *acres* have been added to the irrigable area under the Kendraparah Canal, making a total of 97,500 *acres*.

BRAHMINEE DIVISION.

1. *Anicut across the Beropa and Head Works.*—The only work executed to this anicut in the past year was the extension of the apron of the under sluices on the right flank and

the substitution of one large bay with the new or French pattern shutters for the old ones, with the view of obtaining increased scouring power and preventing the growth of the sand bank, which has hitherto periodically formed in the portion of the river leading up to the head of the Kendraparah Canal.

2. *High Level Canal, 1st Section.*—The first portion of this canal, 23 miles in length, as far as the village of Nealpore, on the Calcutta Road, was completed in the past year and water admitted in June 1869.

The remaining portion between Nealpore and the Brahminee, a distance of 10½ miles, was progressing well, but unfortunately cholera (supposed to have been brought by the pilgrims to Juggernât) broke out amongst the laborers and virtually dispersed them, as their numbers were suddenly reduced from 5,600 to 1,400 men.

Of the masonry works in this section of the canal, four syphons have nearly been completed, and another was well advanced. The excavation for the foundations of the aqueducts on the Korai and Marthagunga Nullahs, and for the lock and calingula at Emamnugger had been completed; but, owing to the outbreak of cholera above alluded to, the masonry work was delayed.

Five wrought-iron lattice bridges supported on saul-wood piles have also been erected in this section. The progess on the distributary channels has not been satisfactory, as an aggregate length of 32½ miles only has as yet been excavated; but, as the slope of the country admits of the main canal irrigating much land *direct*, the area at present under this portion of the high level canal is about 25,000 acres. Ten regulating head sluices have been completed.

Workshop Division.

The following is a summary of the out-turn of work during the year 1869-70 in this Division :—

135 running feet of centre sluices for the Mahanuddy anicut.

A set of four iron gates for the Kallynugger lock.

291 running feet of iron bridges for the high level canal.

Fitting gates, culvert-gearing, and bridges to four locks on the Kendraparah Canal, besides 216 running feet of calingulah bridges.

Fitting sluices in the Naraje anicut, besides several works of minor importance.

The value of stock used up during the year was in round numbers Rs. 1,12,000, and the value of labor expended thereon Rs. 39,500, making the value of articles turned out from the workshops Rs. 1,51,500.

(B.)—ORDINARY WORKS.

Early in the past year, the embankments of the Orissa rivers were transferred to the Orissa Circle, and accordingly the following distribution of these works, together with the sluices and bungalows belonging to them, was made :—

			Miles of Embankments.	Sluices.	Bungalows.
To the Mahanuddy Division		...	246¾	45	7
„ Brahminee	ditto ...	...	208	7	13
„ Beropah	ditto ...	...	171¼	23	7
„ Pooree	ditto ...	...	368¼	135	10
	Total	...	994¼	210	37

Some important embankments were undertaken during the year as below mentioned, namely,—

In the Mahanuddy Division.—A retired line of embankment at Rytollah was completed, and the foundations of a new bungalow at Juggutsingpore were laid.

In the Beropah Division.—The embankments at Chargong and Benipore were completed, also the retired lines of embankments necessitated by the high flood of 1868 at Nilcunta, Chumparra, and Chota Mungulpore.

In the Brahminee Division.—The Aul embankments have been materially strengthened.

(C.)—REPAIRS.

The extremely high floods of the Brahminee in 1868 did much damage to its embankments, and the expenditure during the past year was chiefly confined to repairing the injuries then sustained, and putting the neighbouring embankments in good order.

The Cuttack city protective works were kept in proper repair, and the short spurs at the base of the revetment wall preserved in good condition.

GENERAL REMARKS.

The rates for earth-work generally in this circle have been lower than the average of the last five years on those sections of the works which offer large and continuous employment. There was an abundant harvest last season, and the price of rice in the early part of the year actually fell below the average rates before the famine. To this, of course, chiefly is to be attributed the favorable rates the Executive Engineers have been able to obtain; but it was not without some tact and firmness on their part that the contractors could be induced to face the works at lower terms than they had been accustomed to.

The supply of labor was not so plentiful in the Mahanuddy Division as might have been expected, but was abundant on the high level canal till the outbreak of cholera above-mentioned dispersed it.

The floods of the past year were moderate, and the rain-fall rather below the average, namely, 53·40 inches at Cuttack against 54·40 in the previous year, and 62·83 the average of the four preceding years.

The month of July was the wettest month, the rain-fall being nearly double that of any of the other monsoon months. A somewhat sudden and unusual flood occurred early between the 10th and 13th of October 1869, when the river rose on the Naraje gauge to within 2′ 9″ of the *highest* fresh of the season. Such a flood so late in the year has not occurred for eight years. For the first 26 days in August so low was the state of the river and so variable the rain-fall that serious fears were entertained for the crops over a large portion of the country. In the higher lands skirting the Delta the want of water for the fields was very severely felt, and even in the Delta it was only by cutting the bunds when the river rose in places where the canals have not been yet made that the crops in those localities were saved.

The following Statement exhibits the highest rise of the several rivers in Orissa above lowest summer level in 1869-70 :—

	Feet.
River Mahanuddy at Naraje	21·50
„ over the crest of the Mahanuddy Anicut	6·20
„ Katjooree at Lall Bagh	24·40
„ Beropah over the Beropah Anicut	6·00
„ Brahminee at the bifurcation	10·24
„ Pattea „ „	13·20
„ Byturnee at Akhooapudda	5·50
„ Salundee at Bhudruck	6·90
„ Kansbans	17·02

With the Naraje Anicut at its present level and in the present state of the gaps in the dividing embankment, the discharge down the Katjooree to that down the Mahanuddy is nearly in the proportion of 2·3 to 5, instead as formerly of 3 to 4.

ESTABLISHMENT.

The greater number of the Officers forming the establishment of this circle were taken into Government service in January 1869 on the transfer of the East India Irrigation and Canal Company's Works to Government.

Two Assistant Engineers and four Upper Subordinates were ultimately transferred from the General Branch of the Department, and the circle formed into seven Divisions including the Workshop Division. Subsequently, the reservoir or Upper Mahanuddy and Balasore Divisions were placed in abeyance, the embankment works in the latter, south of the River Boorabhullung, being attached to the Brahminee Division. These changes and transfers entailed some loss of time, but the Irrigation Company's Officers have now become practically acquainted with the working of this Department; and, although the system and forms of accounts were entirely new to them, they have now become conversant with their duties in Office in all details. For several months back the accounts have been submitted with punctuality from the different Divisions.

II.—SOUTH-WESTERN CIRCLE.

Colonel P. O'Connell, R.E., assumed charge of this circle from Captain J. O. Mayne, R.E., on the 20th December 1869.

On the transfer to Government of the works of the Irrigation Company that portion of the high level canal lying between Midnapore and Ooloobariah was transferred to this circle, which was then formed into *four* Executive Divisions as below mentioned, *viz.*:—

(1) Selye Division.
(2) Cossye „
(3) Hidgellee Division.
(4) 24-Pergunnahs „

This change was effected in October 1869.

The following works were in progress in the year under review:—

(A.)—EXTRAORDINARY WORKS.

MIDNAPORE CANAL.

1. This Canal runs from Midnapore to Ooloobariah and will be the terminal section of the high level canal from Cuttack to the Hooghly. The works comprised in it consist of the anicut and head works at Midnapore and Panchkoorah, the masonry works along the canal itself and the distributary channels.

The main canal is divided into *eight* reaches, the state of the works in each of which at the close of 1869-70 was as follows:—

No. 1 *reach.*—*Six-sevenths* of the earth-work of the canal excavation were completed. The head lock was under construction, and the head sluice completed, with the exception of the gearing for working the shutters.

No. 1 distributary was completed, with the exception of the field sluices which were being provided.

No. 2 *reach.*—*Six-sevenths* of the canal exacavation were completed.

The waste weir at Lutchmutpore was nearly completed. Excavations for lock foundations were nearly finished, and nearly all the necessary materials on the site of the work.

No. 3 *reach.*—*Five-sixths* of the canal excavation were completed, and excavation for foundation of calingulah and lock at Booramoolla in progress. Materials were being collected.

No. 4 *reach.*—*Five-sixths* of the canal excavation were completed. Materials for head works at Debrah were being collected.

No. 5 *reach.*—*One-fourth* of the canal excavation was completed. Materials for head works at Midnapore and for the Korai aqueduct were being collected.

No. 6 *reach.*—This reach has been opened for navigation for some time; the earth-work to the embankments was nearly completed. The foundations of the head lock of this reach on left bank of the Cossye have been laid, and the superstructure in progress. The lock at Dainan, which is at the end of the reach, and which had been under repair, had been re-opened.

No. 7 *reach.*—This is a cut connecting the Roopnarain with the Damoodah, and has been open for navigation for some time. Materials for sluices were being collected. The dressing of the canal embankments was about half finished.

No. 8 *reach.*—Connecting the Damoodah with the Hooghly Rivers. The lock at Bansberriah, the walls of which had failed, was under repair. Materials for the sluices were being collected.

Distributaries.—Some 80 miles of channel for the irrigation of between 50 and 60,000 acres have been excavated. The field sluices and minor channels of distribution are still required.

TIDAL CANAL.

2. This canal connects the Roopnarain with the Russulpore River. It consists of *two* reaches, with locks at the ends of each reach. The progress on this work up to 31st March 1870 was as follows:—

The clearance of the silted portion was completed. The lock at the south end of No. 1 reach at Etamuggra also completed. Half of the masonry work of lock No. 4 at Kalynugger had been done, and the gates were ready. Materials had been collected for commencing the masonry work in the foundations of locks Nos. 1 and 3 at Banka and Terapakea, respectively. Nearly the whole of the drainage sluices were completed.

(B.)—ORDINARY WORKS.

During 1869-70 several works under this head were executed in each of the Divisions of this circle. The works mainly consisted of embankments and sluices. The following were the most important of these:—

SELYE DIVISION.

(1.) The construction of the Ghattal circuit embankment, which was nearly completed.
Amount of estimate Rs. 28,244.

(2.) Reconstruction of the Doro Dumnan embankments. This work was, however, suddenly stopped in October, owing to the restriction on expenditure ordered by the Government of India.
Amount of estimate Rs. 36,639.

(3.) Constructing embankments and sluices for reclaiming salt lands in Tumlook and Mysadal. The earth-work of the Shampoor portion (on the north side of the Kallyaghye River and to the west of the Roi Khallee) was fully completed this year, and that of the Borgodah portion to the east of the above-named khall was about half completed. None of the sluices has been built.
Estimated amount Rs. 1,51,050.

(4.) Constructing a sluice in the Purtabkhally Khall. This work was very nearly completed.
Amount of estimate Rs. 20,427.

COSSYE DIVISION.

(1.) Constructing retired lines of embankments and spurs for the protection of the embankments on the Cossye River. Owing to the failure of a contractor, this work was not more than half completed.
Amount of estimates Rs. 41,680 (local tuccavee).

HIDGELLEE DIVISION.

(1.) The sea-dyke in Hidgellee was fully completed.
Amount of estimate Rs. 6,22,261.

(2.) The embankment at Munder Mohun was also completed.
Amount of estimate Rs. 21,916.

(3.) Of the dam and sluice across the Peechabunnee Khall about five-sevenths of the former were completed, and the masonry foundations of the sluice had been begun.
Amount of estimate Rs. 1,36,354.

(4.) The sluice and dam across the Ramnugger Khall were completed, and were in operation throughout the rains; but owing to the extremely treacherous nature of the sub-soil, a very high spring tide, which occurred after the close of the rains in November, undermined the flooring and caused the destruction of the sluice.
Amount of estimate Rs. 34,943.

(5.) The new alignment of the embankments at Bhograi on the left bank of the Soobunreeka for the purpose of affording greater waterway to that river in *floods*, when it rises from 8 to 10 feet over its natural banks, was stopped in October on account of the restriction on expenditure after rather more than half of the work was done. It was recommenced in March last.
Amount of estimate Rs. 25,799.

(6.) Constructing "groynes" for the protection of the sea coast. These works, though incomplete, acted very satisfactorily, having added both to the length and height of the beach in their neighbourhood.
Amount of estimate Rs. 21,250.

The groynes consist of earth embankments terminating in brushwood spurs.

24-PERGUNNAHS DIVISION.

(1.) The sluices in the Hooghly embankments in Diamond Harbour Sub-Division have been completed, but an accident occurred to the sluice at Chowmooka from a heavy fall of rain occurring while it was under construction, and bursting the mask-embankment by which it was protected.
Amount of estimate Rs. 47,017.

(2.) A retired line of embankment at Rungafullah was about three-fourths completed by 30th March last.
Amount of estimate Rs. 15,430.

(3.) The sluice on the Puschimbahinee Khall was commenced during the year, but little progress had been made on it.
Amount of estimate Rs. 27,236.

(4.) The excavation of Churrial Khall was completed.
Amount of estimate Rs. 22,558.

(5.) The excavation of the Kowrapookeriah Khall was also completed in the past year.
Amount of estimate Rs. 49,666.

(6.) The excavation of the drain on the west side of the Diamond Harbour Road was completed, but only a portion of the masonry work was done.

Amount of estimate Rs. 37,290.

(C.)—REPAIRS.

These consisted of the usual *annual* repairs to embankments, sluices, and bungalows throughout the several Divisions, but none were of sufficient importance to require special notice in this report.

III.—SOANE CIRCLE.

This circle was only formed in 1869-70 on the transfer of the works of the Irrigation Company to Government. Much had been done before the transfer, in January 1869, by the Officers of the Company in the matter of levelling and surveying. Between March 1867 and January 1869 upwards of 2,500 miles were levelled and plotted. The position of the anicut and head works at Dehree had been fixed, nearly 22 miles of the western and 10½ miles of the eastern main canals were staked out, the working sections plotted, land plans prepared, and the boundaries of the land to be taken up were nicked out on the ground. The quarry at Dodand was explored, and the section of the tramway to connect it with the anicut was taken, and the land for it and the quarries marked out. Some valuable information had also been obtained by the Company's Officers regarding the resources of the District in the matter of timber, fuel, limestone, &c.

In addition to the above, detailed designs and estimates for the anicut, head sluices, and locks at Dehree and Baroon; also for bridges, aqueducts, and syphons for the canals, as far as these were laid out, had been prepared, and the estimates for the earth-work calculated in detail.

Thus all was in readiness for a commencement as soon as the staff could be selected and sent up.

The circle is divided at present into the following *five* Divisions:—

(1.)—*The Dehree Division*, comprising the work on the anicut, head locks and sluices at Dehree and Baroon; lock and sluice channels of the eastern and western main canals; the quarries and tramway; and the supply of timber, coal, and lime.

(2.)—*The Sasseram Division*, comprising the works on the western main canal.

(3.)—*The Baroon Division*, comprising those on the eastern main canal.

(4.)—*The Workshop Division.*

(5.)—*The Gunduck Division.*

The last was added to the Soane Circle in December last, when the Gunduck Circle was abolished.

An Executive Engineer (Captain Heywood, R.E.) was appointed in November last to take charge of the survey operations of the Patna, Arrah, and Buxar branch canals.

The work done in each Division will now be briefly described, including the little that was done between the 12th January and 31st March 1869, so that this report, as far as the Soane Circle is concerned, embraces a period of 15 instead of 12 months.

(A.)—EXTRAORDINARY WORKS.

DEHREE DIVISION.

It was not possible to do anything to the anicut or head works before the rainy season of 1869, and it was of the utmost importance to provide accommodation for the large working staff required for the supervision of the work at Dehree and Baroon before the hot whether set in, every exertion was made to erect bungalows, and before the commencement of the rains eight bungalows had been completed at Dehree, two at Dodand quarries, and two at Baroon, besides 12 houses for Native clerks and 14 blocks of cooly huts, each capable of accommodating 60 coolies.

There being still nothing like sufficient accommodation for the staff required for the works, building operations were recommenced on the cessation of the rains, and carried on for the remainder of the year, by which time 17 bungalows were completed and 10 others in progress, 16 houses for Native clerks completed and 4 in progress, 56 blocks of huts for coolies completed and 12 in progress, besides seven temporary sheds for workshops, lime, stores, &c., completed and six in progress.

In addition to the above, an iron shed 112 feet long by 40 feet broad required for immediate use as a temporary workshop was run up out of a large quantity of angle iron which had been left at Dehree at the time the old barracks were dismantled, and a roof of corrugated iron was put up over it.

Quarrying operations were commenced in July 1869, and up to the end of the official year 4,30,377 cubic feet of "off-bearing" had been removed, 4,31,000 cubic feet of "rubble" stone stacked, and 14,020 cubic feet of "ashlar" rough dressed. The rubble stone has cost one rupee per 100 cubic feet stacked and the ashlar four annas per cubic feet. Since the commencement of opeartions 2,60,000 cubic feet of stone have been carted to the site of the anicut and head works, and 1,93,000 cubic feet to the workshops and other buildings. The distance the above stone was carted is about eight miles.

The cost of carting 100 cubic feet per mile was eight annas, or, including the cost of quarrying, Rs. 4-14 per 100 cubic feet delivered on the works.

The tramway embankment from the quarries to the anicut was completed during the year, inclusive of 11 culverts. The rails procured from England were being carted up from Arrah, but more difficulty than had been anticipated occurred in getting a sufficient number of sleepers, owing to the scarcity of labor and the difficulty of getting timber rafted down the Soane. By the end of the year 21,000 sleepers of excellent quality had been cut in the forests at Modkhoopea on the left bank of the Soane 45 miles above Dehree.

Owing to the difficulties just mentioned, only 5,816 out of the 21,000 sleepers had been delivered at Dehree, but the Superintending Engineer hopes to be able to get down a sufficient number of sleepers during the coming rains to lay a single line of rails from the quarry to the river.

The Palamow Forests have yielded a large quantity of "sâl" and other timber suitable for building purposes, but owing to the impracticable nature of the Koel River it was found necessary to have the logs cut up into the requsite scantlings and carted to some point on the Soane, whence they could be boated to Dehree. A cart track has, therefore, been marked out and commenced.

Meanwhile a supply of 560 logs of sâl timber for immediate requirements was obtained from the River Gogra and conveyed by boats to Dehree.

One of the greatest difficulties experienced in the Soane Circle is the procuring anything like a sufficient supply of *fuel* for the works. Some firewood was cut by departmental agency in the forests, and some supplied by contractors, who floated it down the Soane, and delivered it at Dehree at Rs. 12 per 100 maunds.

There is, however, an abundant supply of very excellent steam coal at Rajaharra on the Koel, distant some 40 miles from its junction with the Soane; but unfortunately, owing to the difficulties of carriage, the River Koel being unnavigable up to the collieries in consequence of a barrier of rock which exists at 21 miles from the mouth of the river, loaded boats cannot ply on it even during the rains, and hitherto *pack bullocks* had been the only means used for conveying the coal.

It was, therefore, decided to construct a cart road from the mines to join the local road in the Gya District at an estimated cost of Rs. 7,617. So much of this road had been completed during the year that carts could pass along it, with the exception of one place where it was found necessary to remove a mass of rock which crops out on the line. While the road was under construction coal had to be carted from Hazareebaugh. Its cost, delivered at Dehree, was 12 annas per maund. This coal is, however, inferior in quality to that found in Palamow. When the canals to Patna, Chunar, and intermediate stations on the Railway are opened, there is certain to be a great demand for the Palamow coal.

The excavation of the head sluice and lock channels of the eastern and western main canals was commenced in May 1869, and up to the end of the year, 57,44,946 cubic feet of earth-work had been done. The cuttings in these channels are exceedingly heavy, averaging nearly 30 feet in depth; the soil is very hard, being full of nodular limestone. Owing to this, and the difficulty of obtaining a sufficient number of men for these works, only *one-third* of the work on the Dehree side, and *one-tenth* on the Baroon side, was done during the year.

The work on the anicut was not commenced till December last, and up to the 31st March 120 "foundation blocks" had been built, sunk, and filled in, and 202 more built ready to be sunk. Besides these, 47 blocks were in progress, and two piers of the under-sluices on the Baroon side were founded on *clay*. Each block in the foundation of the main walls is on an average 10 feet long, 5 feet wide, and from 8 to 10 feet in height.

The blocks were sunk by the Fouracres' patent excavator, the efficiency of which is proved by the fact that the sinking of eight blocks of the size above-mentioned to a depth of 10 feet occupied on an average *three* days, but much trouble and delay were caused by the occurrence of logs of wood and beds of coarse shingle at different depths, which impeded the excavation.

Under favourable circumstances, and when no such obstacles are met with, a set of eight blocks can be sunk in *one and a half days* without difficulty. With the old "jham" this work would probably have required not less than 18 or 20 days; the great saving in time that will be effected will be seen when it is stated that 4,211 blocks have to be sunk, exclusive of the honey-comb blocks in the sluice foundations. The cost of sinking will not be more than *one-eighth* or *one-tenth* of what it would be by the old plan.

The work above-mentioned includes the foundation of the under-sluices on the Dehree side, which may be said to have been half finished by 31st March last and 800 feet in length of a double row of anicut walls. A fair commencement had been made on the under-sluices on the Baroon side, where the work for a distance of 200 feet from the face of the abutment will be founded without wells on a bed of *clay* which projects into the river. The head sluices and lock on this side will be founded on *clay* also.

The excavation for the foundations of the head lock and sulices on the Dehree side, and of the lock on the Baroon side, has been steadily progressing, and 6,68,328 cubic feet excavated. The soil is, however, very stiff and full of nodular limestone, which, together with the want of labor, has protracted the work more than was anticipated, and has delayed the commencement of the masonry.

Considering the many difficulties inseparable from starting a great work such as the Soane anicut, the scarcity of labor, the establishing of rates, the intense heat and unhealthiness of the season from March to June 1869, the necessity of building almost a small town for the accommodation of the staff before any work could be begun in the river bed, and the absence of plant, which necessitated the materials being carted from a great distance, the progress on the whole has been very satisfactory, and is highly creditable to the Superintending Engineer and his executive and subordinate officers.

The scarcity of labor is at present a great drawback to the progress of these works, and endeavours will probably have to be made to import it.

The number of men daily employed in this Division, taking the average of the whole year, has been 2,222, but in January and February last the numbers were, respectively, 4,331 and 3,580.

Sasseeram Division.

This Division comprises the works on the main western canal from Dehree to Chunar, a distance of 105 miles.

The excavation of the canal was commenced about the end of March 1869, from which time the progress has been rapid. Upwards of 37 millions of cubic feet of earth having been excavated during 1869-70. This is about $\frac{4}{10}$ths of the work to be done in the first 20 miles of the canal (on the reduced width of 60 feet base), to which alone operations have been restricted during the year.

Nothing has yet been done to the masonry works, with the exception of collecting materials at the Rhotas and Burari road bridge sites, at the Kao syphon aqueduct, and the inlet at the fifth mile.

A quarry has been opened at Korondea on the Grand Trunk Road about five miles from Sasseeram, from which the stone for the bridges will be procured.

The large blocks of stone for the Kao aqueduct will be also supplied from this quarry.

The continuation of the western main canal as far as the Karmanassa had been set out, and plans and sections were under preparation. The Karmanassa is the boundary between North-West Provinces and the Province of Bengal.

In the beginning of March last 500 convicts were sent to Dehree from the Deegah Jail to work on the heavy cuttings at the head of the western main canal. A block of lines, which had been prepared for coolies, was set aside temporarily for their use, and a mud wall built round it. The convicts are a fine set of able-bodied men, and will no doubt prove of great service. It is too soon to judge of what they will do, but for the short time they have worked on the canal itself they earned two annas and nine pie per day each, at the usual rates of work, which must be considered good as a beginning.

The average number of men employed on this canal, averaged 2,180 daily throughout the year. In January and February the numbers averaged, respectively, 4,758 and 4,735 per day.

Baroon Division.

This Division comprises the eastern main canal, the progress on which was not so good as on the western main canal, chiefly on account of the great scarcity of labor. Up to the 31st March 1870, however, 13½ millions of cubic feet of earth-work had been excavated, which, considering the short length of work opened up, and the time in which it has been done, is satisfactory.

Some of the materials for the Grand Trunk Road bridge and aqueduct across the Poon-Poon had been collected, but further expenditure was stopped by order of the Government of India in December last. The head sluices of the eastern main canal were likewise stopped at the same time.

The Bungalow and Office of the Executive Engineer were nearly finished before the close of the year, and an Assistant Engineer's Bungalow had been constructed at the site of the Poon-Poon aqueduct. Twenty coolies' lines capable of sheltering 60 men each were also constructed.

The average number of coolies employed during the year on the eastern main canal was 1,360 per day, but in some months the number has been as high as 3,000. A great number of the coolies were "tank-diggers" locally called *nooneahs*.

Workshop Division.

The principal work done in the shops during the year was the manufacture of a large number of the "Fouracres' excavators," hammers, sledges, *kodalies*, and quarry tools; the fitting up of machinery received from England, and the construction of carts for the conveyance of stores. Plans and estimates were prepared for the permanent buildings.

Very great difficulty was experienced in getting together any skilled labor, such as vicemen, or those accustomed to machinery.

REMARKS ON THE SOANE FLOODS.

During the last rainy season the Superintending Engineer reports that there were two very high floods in the Soane both being above the average,—the first occurred on the 18th of July, and the second on the 9th of October. The water rose so high as to flow through the roads and streets of Arrah.

The flood waters first spilled over the left bank of the Soane seven miles below Bhita, but only in small quantity. The heaviest overflow occurred much lower down, *viz.*, at Sundais and below it. It is satisfactory to know that no spill from the Soane crosses the line of the Arrah branch canal until within one or two miles of the town of Arrah.

On the right bank a spill occurs between Urwal and Ibrahimpore Sakree, but above Urwal no water overflows the ridge on which the Patna canal is laid out; the spill immediately below Urwal passed off into the Poon-Poon, while that occurring lower down, on the right bank, partly follows a tortuous depression, evidently an old bed of the Soane, to Dinapore.

The canal is aligned on the right bank of this depression and follows a ridge well above flood-level to Phoolwary. The great bulk of the spill on the right bank of the Soane is below Mussowrah and passes off into the Ganges west of Dinapore, so that there will be nothing to interfere with the construction of the branch line to Patna.

(B.)—ORDINARY WORKS.

Gunduck Division.

On the abolition of the Gunduck Circle, this Division was formed and added to the Soane Circle in the month of December last.

The work done in it during the past year consisted of the maintenance and remodelling of the embankments on both sides of the Gunduck, extending on the right or Sarun bank to 97 miles, and on the left or Tirhoot bank to 53 miles above its confluence with the Ganges; and of the construction of protective works for the safety of the banks at several places.

Surveys in connection with the upper scheme of navigation and irrigation from the Gunduck were also carried out in the District of Chumparun, and for storing water in the Dhoon Valley, where a favorable site for a reservoir has been found. Plans and sections are under preparation.

The remodelling of the embankments of the Gunduck was undertaken in order to give employment to the famine-stricken people and was carried on as long as the necessity existed. The work was much needed as the embankments had been originally badly aligned, and raised

without any reference apparently to the flood level, being in some places unnecessarily high, and in others much below that level, in consequence of which breaches were of frequent occurrence, causing considerable damage to the crops and to property in general.

The effects of the protective works in the bed of the river have been most satisfactory, in one instance especially where a valuable saltpetre factory was saved at Lalgunge by the diversion of the stream.

About 2,000 miles of cross levels and surveys were taken in the Chumparun District in connection with the scheme above-mentioned and the field work was being plotted.

IV.—DAMOODAH CIRCLE.

(A.)—EXTRAORDINARY WORKS.

The estimates for the Damoodah and Hooghly Canal, which were returned by the Government of India for revision, were resubmitted on the 7th of April last.

Under the sanction conveyed in Colonel Dickens's letter No. 97*I*, dated 22nd March 1869 the following *preliminary* works were carried out in 1869-70 :—

A small bungalow was built at Mungulpore for the officer in charge of the quarries.

Between 80,000 and 90,000 cubic feet of laterite were quarried.

Nine-tenths of the tramway from the quarries to the site of the weir were completed.

Five miles of the canal were set out, plan and longitudinal and cross sections were taken, and the land was acquired on both sides of the river for the head works.

Surveys for six of the distributaries were completed.

The following buildings in connection with the head works were commenced :—

The Executive Engineer's bungalow, of which the walls were completed, and the timber of the roof placed in position.

Materials for the Assistant Engineer's bungalow were collected.

The walls of the bungalow for the officer in change of workshops completed, and the timber for the roof placed in position.

The workshops and store-yard were commenced, and all the materials collected.

(B.)—ORDINARY WORKS.

Under this head the only works carried out in 1869-70 were the protective works in the bed of the river at Ragubpore, Choitpore, and Pullah, which were in progress at the close of the previous year, and satisfactorily brought to a termination in this. The "spurs" were very successful in averting the danger which has been threatening for years, especially at Ragubpore.

V.—LOWER GANGES INVESTIGATION.

During the year 1869-70 the following work was done in connection with this scheme :—

Upwards of 800 miles of fresh levels were taken and 223 miles of former levels checked; 240 miles of surveys were made, and 55 cross sections of rivers taken.

The designing and planning of the larger works have been completed; the levels and surveys are being plotted, and fair copies of all the plans are now under preparation.

A large amount of statistical information bearing on the proposed canal has also been collected. The project will be ready for submission before the end of this year.

VI.—HOOGHLY DRAINAGE.

Early in the year 1869-70 Mr. C. C. Adley, Executive Engineer, was appointed to the special duty of enquiring into the causes of the epidemic fever that had of late years raged with such virulence in the Hooghly and Burdwan Districts, and of suggesting such measures as he might consider necessary for mitigating the evil should it be found that want of drainage was one of the inducing causes of the fever.

Mr. Adley first directed his attention to the Dancoonee swamp west of Serampore, between the Bally and Bidabatee creeks, on the East Indian Railway, and to another swamp on the west of the River Roopnarain, about eight miles north of Ghatal.

In his first report dated 25th June, Mr. Adley, after discussing very fully the nature, origin, and extent of the endemic, and supporting his views by statistical tables, attributes the disease chiefly to the existence of marshes, the silted-up and swampy beds of rivers, excessive damp, jungle and rank vegetation, impure drinking water, and want of sanitary regulations, and concludes that the only effectual remedy is drainage, clearance, cultivation, and conservancy.

In his second report of 10th September last, Mr. Adley enters generally into the measures he would propose for the alleviation and removal of the endemic.

The above reports were submitted in December last to the Government of India, who intimated in reply its readiness to "do all in its power to facilitate the prosecution of works required for improving the drainage of Districts of Bengal subject to these dreadful epidemics : provided that in granting pecuniary aid towards carrying out any projects having this end in view the general revenues of the country shall not be permanently burdened with charges arising from their construction.

"The Government of India," it was further intimated, "will be prepared, when suitable arrangements have been entered into to secure the State against any future risk, to give all help in its power by lending money at the lowest rate of interest possible without actual loss to itself." It was finally left to the Government of Bengal to suggest "how such an arrangement may be best effected, whether by a voluntary association of landholders, or by a cess to be levied under a special law."

In the end of February last Mr. Adley submitted his plans and estimates in detail for thoroughly draining the Dancoonee swamps, amounting, after revision in the Chief Engineer's Office, to three *lakhs* of Rupees, being at the rate of Rs. 7 per acre thoroughly drained, and Rs. 17½ per acre of swamp land reclaimed.

The estimates were forwarded to the Commissioner of Burdwan, with a request that he would give his best attention to the points adverted to by the Government of India, and state in what manner the object of securing the State against future risk could be best attained.

The Commissioner's reply has since been received, and the project will very shortly be laid before Government.

Mr. Adley's services were favorably noticed by both the Lieutenant-Governor and the Governor General in Council.

F. H. RUNDALL, *Colonel, R. E.,*
Chief Engineer, Bengal,
Irrigation Department.

The 11th August 1870.

Minute by the HON'BLE W. GREY, *Lieutenant-Governor of Bengal, dated 4th September* 1870.

THE Chief Engineer having described in detail the progress which has been made on the various works comprised in the respective irrigation projects which have been carried on in these Provinces during the past year, it would be sufficient for me to add that I consider the progress exhibited in the Report to be satisfactory and creditable to all the Officers concerned.

2. I desire, however, to draw attention to one class of works with which I should have been glad to see greater progress had been made, *viz.*, the minor works of distribution from the canals already in operation. The increased demand for irrigation in the present year, at first on the Midnapore Canal and now in Cuttack, points to the necessity for a speedy completion of these minor works. The matter, I am aware, has not escaped the Chief Engineer's attention, but I allude to it now, partly from the satisfaction which I feel at the growing appreciation of the irrigation works amongst the cultivators, and more particularly with a view of specially drawing the attention of the Government of India to that fact, with reference to the doubts which have been expressed in late correspondence as to the willingness of the cultivators to avail themselves of irrigation in Bengal.

3. The Report shows that the head-works at Cuttack and the neighbourhood are now nearly, if not quite, complete. It appears to me, therefore, essential, in order that the greater portion of the expenditure on those works may not remain unproductive, that *all* the main and subsidiary canals which are to be supplied by them should now be carried out as rapidly as possible.

4. There is one work in particular which I had hoped to have seen well advanced during my tenure of office, but towards which, to my great regret, nothing has yet been done. I allude to the extension of the canal from Cuttack to Calcutta; the necessity for completing which is evidenced (if evidence were wanting) by the rapidly-increasing trade at the port of False Point, consequent on the opening of the Kendrapara Canal between Cuttack and the sea-board. What that canal is proving to the district more immediately affected by it, such will the canal to Calcutta prove to the Districts through which it will pass,—Districts which have hitherto suffered grievously not only from drought, but from the want of communications,

and the consequent difficulty and costliness of transport. I would fain hope that the growing trade of Cuttack will lead the Government of India to recognize the importance of the canal to Calcutta to the rest of Orissa, and to the expediency of withdrawing the prohibition for its construction, which, but for that prohibition, would ere this have been far advanced.

5. The progress made on the Soane Works is, I consider, very creditable to the Superintending Engineer, Mr. Levinge, and to all the Officers concerned, especially to Mr. Fouracres, to whose ingenious invention both rapidity and economy in constructing the foundations of the head-works appear to be greatly due.

6. I must not omit to notice the great satisfaction with which I have recently received reports as to the success which has attended the remodelling of the embankments of the River Gunduck during the past year. Excessive and unusally protracted floods, standing, it has been reported, at a high level for 14 days, have been passed off without the slightest injury. Such floods, it has been stated, must, but for the work carried out last year, have inevitably caused most serious loss to the Districts of Sarun and Tirhoot.

7. I take this opportunity also of recording my appreciation of the labor and talents of Captain Garnault in the preparation of the Damoodah Canal Project, and at the same time I cannot help repeating my regret that the unqualified support given to it by the Revenue Officers should have failed to convince the Government of India of the soundness of the scheme, and that the hopes of the zemindars and cultivators, as well as the expectations of the coal proprietors, who are so deeply interested in the projected work, are likely to be still indefinitely deferred.

8. The satisfactory progress which has been made throughout this branch of the Public Works Department is sufficient evidence that the establishment has done its duty in the field. I am glad to see also that the Office duties have not been neglected, and that the periodical accounts have been generally submitted with punctuality.

9. My acknowledgments are largely due to the Chief Engineer, Colonel Rundall, for the great ability and assiduity with which he has conducted the business of his department.

From the Secretary to the Government of India, Public Works Department, to the Joint Secretary to the Government of Bengal, Public Works Department, Irrigation Branch,—No. 419 I, dated Simla, the 10th October 1870.

I AM directed to acknowledge the receipt of your letter No. 588 I, dated the 8th ultimo, and in reply to state that His Excellency the Governor General in Council has perused with satisfaction the full and interesting report therewith submitted, and agrees with the Hon'ble the Lieutenant-Governor in considering that the progress made on irrigation works in Bengal during the past year is highly creditable to the zeal and energy and good management on the part of the Chief Engineer, and of the Officers in charge of Circles and Divisions.

2. With reference to the remarks conveyed in the Lieutenant-Governor's Minute, I am to state that His Honor's suggestion, that no efforts should be spared to push on the distribution channels under the canals already partially opened out in Cuttack, is fully concurred in. His Excellency in Council having on more than one occasion already pointed out the necessity of completing the smaller channels contemporaneously with the main canals, in order that the lands under command may be provided with the means of irrigation at the earliest possible moment, and unless this is done it can hardly be expected that irrigation works will be financially successful.

3. With reference to paragraphs 3 and 4 of the Minute, I am to remark that the Government of India has not restricted expenditure from loan funds on any of the Cuttack or Midnapore works, which had been under prosecution by the late Irrigation Company, unless to a very trifling extent, and with regard to entirely new works, such as the extension of the high level canal from the delta of the Mahanuddy and Brahminee Rivers to Midnapore, that His Excellency in Council must necessarily hesitate to authorise the commencement of such extensive operations before the financial condition of the works already in operation shall have been placed on a secure basis. The recent reports of the spread of irrigation during the present season are, as remarked in a late letter* from this Office, highly encouraging, and, it is hoped, that good reasons will be advanced to show that it is not likely to be exceptional.

* No. 395 I, dated 27th ultimo.

4. The Government of India, I am to add, has as great an interest in the advancement of the various Districts in Bengal as His Honor the Lieutenant-Governor, and has certainly displayed great liberality in its proceedings in connection with the late Company's scheme.

5. With reference to paragraph 7 of the Minute regarding the Damoodah Canal Project, I am to observe that in none of the papers previously received by the Government of India has any allusion been made to the hopes of the zemindars and cultivators in connection with the scheme. The scheme, as is already known, has been suspended on no other ground than because, in the opinion of the Government of India, satisfactory proof has not been adduced of its being certainly remunerative; and, until this is conclusively established, His Excellency in Council does not think he would be justified in permittiug the prosecution of the works.

No. 42 of 1870.

SUPPLEMENT TO
The Gazette of India.

SIMLA, SATURDAY, OCTOBER 29, 1870.

OFFICIAL PAPERS.

A SUPPLEMENT *to the* GAZETTE OF INDIA *will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.*

Non-Subscribers to the GAZETTE *may receive the* SUPPLEMENT *separately on a payment of six Rupees per annum if delivered in Calcutta, or nine Rupees four annas if sent by Post.*

No Official Orders or Notifications, the publication of which in the GAZETTE OF INDIA *is required by Law, or which it has been customary to publish in the* CALCUTTA GAZETTE, *will be included in the* SUPPLEMENT. *For such Orders and Notifications the body of the* GAZETTE *must be looked to.*

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

PUBLIC WORKS BUDGET GRANT FOR 1871-72.

Resolution by the Government of India, Public Works Department, Circular No. 61 Public Works, dated Simla, the 19th October 1670.

READ the following papers :—

Public Works Department Circular No. 82 of 1869.
" " " " " 96 of "
" " " " " 104 of "
Orders on the several Provincial Public Works Budget Estimates for 1870-71.

RESOLUTION.—The Governor General in Council having had under consideration the question of the amount of the Public Works budget grant for 1871-72, has decided to sanction an allotment from ordinary revenue equivalent to that allowed for the current year, *viz.*, £3,998,400, distributed as follows, under the main divisions of the budget allotment :—

	£
Military	1,127,400
Agricultural	497,300
Other Services	1,404,310
Establishment and Tools and Plant...	969,390
Total ...	3,998,400

2. It having been represented that by the arrangement at present in force of including the provision for Establishment and Tools and Plant with that for Other Services, any increase found necessary to the charges in question, on account of Military and Agricultural Works, has to be met by a diminution of the allotment for Civil Buildings, Communications, and Miscellaneous Public Improvement, it has been considered desirable to prevent such diminution by providing for the outlay on Establishment and Tools and Plant under a distinct grant, to be augmented, if necessary, by transfer from such other heads of service as the circumstances of the case may require.

3. The grant for Extraordinary Irrigation Works, with its proportion of charges for establishment and tools and plant, is fixed at £1,767,000. In addition to this, there will be the charge for the construction of State Railways and such other objects as have been specially sanctioned by the Government of India as "Extraordinary," the allotments for which will be determined as usual on actual demands.

4. The total grant to be distributed in these orders amounts to £5,765,400 as follows :—

	£.
Ordinary	3,998,400
Extraordinary Irrigation	1,767,000
Total ...	5,765,400

5. The Governor General in Council now proceeds to notify the distribution of the aggregate allotment among the several Local Governments and Administrations.

MILITARY.

6. For next year, the total grant under this head, including value of stores from England, amounts to £1,127,400, which is distributed as follows, as compared with the grant for the current year :—

	Grant 1870-71.	Grant 1871-72.
	£	£
Madras	60,000	50,000
Bombay	277,500	277,500
Bengal	140,000	180,000
North-Western Provinces...	134,500	135,000
Punjab	200,000	192,000
Central Provinces	70,600	60,600
British Burmah	35,000	35,000
Oudh	45,000	35,000
Hyderabad	26,800	26,800
Rajpootana	39,000	39,000
Central India...	94,000	94,000
Coorg	...	...
Port Blair	5,000	2,500
Total ...	1,127,400	1,127,400

AGRICULTURAL WORKS.

7. The demands of the several Governments and Administrations under this head aggregate £2,720,885, but the Governor General in Council considers that this is very much more than can be profitably spent during the year, and the demand is therefore reduced to £2,264,300, being £34,500 more than the grant for the current year, a large part of which it is now certain will not be required. The distribution of this grant as compared with that for 1870-71 is as follows :—

	Extraordinary.		Ordinary.		Total.	
	Grant 1870-71.	Grant 1871-72.	Grant 1870-71.	Grant 1871-72.	Grant 1870-71.	Grant 1871-72.
	£	£	£	£	£	£
Madras ...	220,000	195,000	165,000	165,000	385,000	360,000
Bombay ...	257,500	257,000	90,000	90,000	347,500	347,000
Bengal ...	400,000	375,000	70,000	70,000	470,000	445,000
North-Western Provinces ...	300,000	350,000	60,900	61,000	360,900	411,000
Punjab ...	335,000	350,000	77,400	77,500	412,400	427,500
Central Provinces..	60,000	75,000	5,000	2,500	65,000	77,500
British Burmah ...	...	...	18,500	23,300	18,500	23,300
Oudh ...	160,000	160,000	...	...	160,000	160,000
Rajpootana ...	...	5,000	10,000	7,500	10,000	12,500
Coorg ...	...	...	500	500	500	500
Total ...	1,732,500	1,767,000	497,300	497,300	2,229,800	2,264,300

8. The grant for extraordinary irrigation works is intended to provide for all works sanctioned by the Government of India as debitable to loan under the operations of Public Works Department Circular No. 94 of 1867, and includes a proper share of the cost of Establishment and Tools and Plant employed on such works. The Budget Estimate should be so prepared as to indicate clearly the exact manner in which the provision under these two heads has been arrived at, and should show in the form of Appendix A of the appropriation account the precise amount proposed to be charged to each work. The Controller of Public Works Accounts should be specially consulted in the preparation of this portion of the Budget Estimate, so as to ensure that the extraordinary grant is not debited with a larger share of the charges for Establishment and Tools and Plant than is allowed by the rules in force.

9. The grant under ordinary provides for all agricultural works debitable to revenue, including embankments in Bengal and British Burmah, and state outlay on guaranteed irrigation works in Madras, as also for the maintenance of agricultural works generally.

OTHER SERVICES.

10. The grant allowed under this head for the current year was £2,373,700, of which £969,390 was for Establishment and

Tools and Plant, for which provision is to be made for the future under a distinct head, so that the sum left for expenditure on Civil Buildings, Communications, and Miscellaneous Public Improvement is £1,404,310, which amount is distributed as follows, as compared with the allotment for the current year—

	Grant, 1870-71.	Grant, 1871-72.
	£.	£.
Madras	183,580	183,580
Bombay	262,500	262,500
Bengal	308,300	308,300
North-Western Provinces...	164,800	164,800
Punjab	126,000	126,000
Central Provinces	118,000	118,000
British Burmah	87,800	87,800
Oudh	53,400	53,400
Hyderabad	1,700	1,700
Rajpootana	23,000	23,000
Central India...	63,600	63,600
Coorg	7,030	7,030
Port Blair	4,600	4,600
Total ...	1,404,310	1,404,310

11. It is expected that the several Governments and Administrations will make suitable provision from this grant for the works connected with the Postal and Telegraph Departments. Schedules of the sums to be so provided will be circulated in due course.

ESTABLISHMENT, AND TOOLS AND PLANT

12. To meet the demands under this head a sum of £969,390 is available, which is distributed as follows in accordance with the appropriation made for the purpose in the several provincial Budget Estimates of the current year—

	Establishment.	Tools and plant.	TOTAL.
	£	£	£
Madras	130,920	13,000	143,920
Bombay	150,000	12,500	162,500
Bengal	175,200	9,000	184,200
North-Western Provinces	141,400	6,500	147,900
Punjab	131,300	8,100	139,400
Central Provinces	47,400	6,500	53,900
British Burmah	39,700	1,500	41,200
Oudh	28,100	1,000	29,100
Hyderabad...	5,800	700	6,500
Rajpootana...	12,500	500	13,000
Central India	39,900	2,500	42,400
Coorg	2,370	100	2,470
Port Blair	2,700	200	2,900
Total ...	907,290	62,100	969,390

13. The estimate for Establishment should provide for the salaries of the Engineer Establishment at the consolidated rates of pay ; and if, of the sum required for this purpose, there should be any portion which cannot be met from the grant for Establishment and Tools and Plant it should be provided for by transfers from the other heads of service concerned.

SUMMARY.

14. The table attached to this resolution shows the total grant assigned to each Province. The Budget Estimates should now be framed accordingly, the following conditions being observed :—

I.—That the amount assigned to each Province for Military Works must be considered to be fixed so far, that it is only available for increasing the grant for Establishment and Tools and Plant to such extent as any increase required to that grant may be shown to be due to Military Works.

II.—That in like manner, the grant assigned for Ordinary Agricultural Works, as defined in paragraph 9 of this Resolution, is only available for such works ; and also to supplement the allotment for Establishment and Tools and Plant to the extent of any increase rendered necessary in that grant by the expenditure on Ordinary Agricultural Works.

III.—That the grant assigned for Agricultural Works classed under the heading Extraordinary is only appropriated to works specifically sanctioned by the Government of India to be defrayed from loan funds. On this point attention should be paid to Public Works Department Circular No. 90 of 1869.

IV.—That the sum assigned for other services will be allotted by each Government and Administration according to the requirements under Civil Buildings, Communications, and Miscellaneous Public Improvement ; as also to repairs of works under these three heads.

V.—That the grant for Establishment and Tools and Plant may be increased, if necessary, by transfer from the other three ordinary heads of the allotment. But in case transfers are made from the grant for Military and Agricultural Works, it will have to be clearly and fully shown, by reference to actual figures ; that the sum transferred represents an increase to the charges for establishment caused by expenditure on Military and Agricultural Works.

VI.—That any savings in the grant for Establishment and Tools and Plant may be applied at the discretion of Local Governments and Administrations to augment the allotment for the other heads of service.

VII.—That the amount assigned for each of the main divisions of the allotment includes the value of stores from England,

so that the Budget Estimate should provide for probable payments on this account in the manner prescribed in Chapter XVI., section 1, paragraph 14 of the Code. A memorandum of the sum so provided, with explanation of the grounds on which the sum reserved for expenditure in England has been arrived at, should accompany the Budget Estimate.

VIII.—That the grant for State Expenditure on guaranteed Railways and on State Railways will be in addition to the allotments now assigned, the estimate for each Government and Administration being framed as usual on the actual requirements of the year. Attention should be specially given to the several orders requiring that this part of the estimate may be considered carefully, and made as precise and definite as possible.

15. It should be understood that no entry should be made in the Budget Estimate of any works for which estimates have not been sanctioned by competent authority. On this point attention is requested to Public Works Department Circular No. 90 of 1869.

16. In the preparation of the Budget Estimates, care should be taken to keep in view the principle of concentrating expenditure, particularly that on Military Works, not only upon the completion of buildings that are in progress, but also upon the completion of groups of buildings, station by station. Due consideration must, of course, be at the same time given to economy, by attention to the limits prescribed by the extent of local resources, and to the necessity of avoiding that increase of rates which is apt to accompany the too rapid pushing forward of work at any particular place. The principle which it is desired should be followed, will require establishments to be concentrated, and this can be done by shifting establishments from station to station as the circumstances of the case may require.

17. Special attention should be paid to the preparation of that portion of the Budget Estimate relating to Public Works Revenue, so as to make it, as far as possible, a reliable indication of the actual income of 1871-72.

ORDER.—Ordered, that the foregoing Resolution be communicated to the several Governments and Administrations noted in the margin, for information and guidance, and to the Financial Department for information.

Governments of Madras, Bombay, Bengal, North-Western Provinces, and Punjab; Chief Commissioners, Central Provinces, British Burmah, Oudh, and Coorg; Resident, Hyderabad; and Agents, Governor General, Rajpootana and Central India; Superintendent of Port Blair and the Nicobar Islands.

Ordered also, that a copy of this Resolution be forwarded to the Secretary of State, and published in the Supplement to the *Gazette of India*.

Abstract of the grants assigned from Imperial Funds for expenditure on Public Works in India during 1871-72, *as compared with the grant assigned for* 1870-71, *excluding State expenditure on Guaranteed Railways and expenditure on State Railways.*

	Ordinary.										Extraordinary.		Grand Total.	
	Military.		Agricultural.		Other services.		Establishment and tools and plant.		Total.		Agricultural.			
	1870-71.	1871-72.	1870-71.	1871-72.	1870-71.	1871-72.	1870-71.	1871-72.	1870-71.	1871-72.	1870-71.	1871-72.	1870-71.	1871-72.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£
Madras	60,000	50,000	165,000	165,000	183,580	183,580	143,920	143,920	552,500	542,500	220,000	195,000	772,500	737,500
Bombay	277,500	277,500	90,000	90,000	262,500	262,500	162,500	162,500	792,500	792,500	257,500	257,000	1,050,000	1,049,500
Bengal	140,000	180,000	70,000	70,000	308,300	308,300	184,200	184,200	702,500	742,500	400,000	375,000	1,102,500	1,117,500
North-Western Provinces	134,500	135,000	60,900	61,000	164,800	164,800	147,900	147,900	508,100	508,700	300,000	350,000	808,100	858,700
Punjab	200,000	192,000	77,400	77,500	126,000	126,000	139,400	139,400	542,800	534,900	335,000	350,000	877,800	884,900
Central Provinces ...	70,600	60,600	5,000	2,500	118,000	118,000	53,900	53,900	247,500	235,000	60,000	75,000	307,500	310,000
British Burmah ...	35,000	35,000	18,500	23,300	87,800	87,800	41,200	41,200	182,500	187,300	...	...	182,500	187,300
Oudh	45,000	35,000	...	...	53,400	53,400	29,100	29,100	127,500	117,500	160,000	160,000	287,500	277,500
Hyderabad	26,800	26,800	...	...	1,700	1,700	6,500	6,500	35,000	35,000	...	...	35,000	35,000
Rajpootana	39,000	39,000	10,000	7,500	23,000	23,000	13,000	13,000	85,000	82,500	...	5,000	85,000	87,500
Central India	94,000	94,000	...	...	63,600	63,600	42,400	42,400	200,000	200,000	...	...	200,000	200,000
Coorg	...	...	500	500	7,030	7,030	2,470	2,470	10,000	10,000	...	...	10,000	10,000
Port Blair	5,000	2,500	...	...	4,600	4,600	2,900	2,900	12,500	10,000	...	...	12,500	10,000
	1,127,400	1,127,400	497,300	497,300	1,404,310	1,404,310	969,390	969,390	3,998,400	3,998,400	1,732,500	1,767,000	5,730,900	5,765,400

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

PROSPECTS OF THE COTTON CROP IN THE CENTRAL PROVINCES AND THE BERARS.

From HARRY RIVETT-CARNAC, ESQ., C.S., Cotton Commissioner, to the Secretary to the Chamber of Commerce, Bombay,—No. 5617, dated Simla, the 18th October 1870.

In continuation of former correspondence, I have now the honor to submit, for the information of your Chamber, the following further Report on the state of the weather and the prospects of the Cotton Crop in the Central Provinces and the Berars.

2. Since the date of the last Report the weather has been favorable, and, at present, prospects are decidedly promising.

THE WURDAH VALLEY (HINGUNGHAT).

Mr. Noble, the Assistant to the Cotton Commissioner, Wurdah Valley, reports on the prospects of the crop in that tract, under date the 12th instant, as follows :—

"During the week we had one shower which registered 40 cents. The weather now is fine and very favorable. The crops everywhere are looking very well, and good out-turns are expected. The Cotton plants are in full flower, and on the more forward plants "bolls" are already formed."

"From a gentleman who lately came from Nimar, I heard that the Cotton Crop in the Nimar District is very good; the plants in that District were also in flower."

"At the Mudnee Farm irrigation has not been required during the past week, and the only other work carried on was weeding."

The Seed Gardener at Mudnee reports as follows on the experiments there :—

"The land is in readiness for wheat, which will be put in as soon as conditions offer success, which, according to Natives, will be in the course of a fortnight or so."

"During the week I have again gone over the Cotton with the hoe. I trust that it will be the final going over, weeds growing a-pace necessitated frequent hoeings. Otherwise hoeing has for its object keeping the surface loose, thereby preventing cracking and drying of the soil, answering, though in a less degree, the system of mulching at Home."

"I am convinced that planting Hingunghât in lines of two feet six inches or so apart is simply erroneous, unless the ground is extremely rich, causing vigorous growth and frequent pinching, say when the plant is from two to three feet in height, so that the plant may be well feathered to shade the ground, to prevent evaporation in the latter, and coolness as well. But in a general way 18 inches to two feet will give the greatest out-turn, the latter distance only on soil enriched by manure; this does not refer to Dharwar which, to us on the farm, warrants a hardier constitution, a crinoline habit, requiring a greater distance in and between rows."

"Jowaree and Cotton in the neighbourhood for the most part is doing well; a field here and there being below par. But on the way to Hingunghât there is a sensible falling off in both; more rain falling, and drainage defective caused in too many places a second sowing."

3. From the other parts of the Central Provinces, the accounts are good.

EAST BERAR (OOMRAOTEE).

4. The following is the Report of Mr. Nago Rao, the Assistant to the Cotton Commissioner at Oomraotee, dated the 12th instant :—

"In continuation of my letter No. 375—87 of the 5th instant, I have the honor to report that during the past week, one or two showers of rain fell in the

Chandore and Durriapore Talooks (Sub-Divisions), and in some other parts of the country; but since the last few days the weather has been very hot and dry here. The following figures show the rain-fall in the various parts of the East Berar Division since the commencement of the monsoon :—

	Inches.	*Cents.*
"At Oomraotee up to date	30	45
„ Chandore up to 7th October	29	75
„ Moortizapore ditto	28	42
„ Durriapore ditto	36	67
„ Woon ditto	40	0"

"Very favorable reports have been received from all parts of the country regarding the prospects of Cotton and other Khurreef Crops (or crops of the autumn harvest), which are now in a most thriving condition, and a good crop is expected unless something unforeseen happens."

"The cultivators have been engaged in sowing some of the Rubbee (spring harvest) Crops, such as gram, peas, mussoor, &c., and wheat also will be sown by the 20th or 25th of this month."

"One or two more showers of rain are needed in some parts of the country where the Cotton plants are still small, and have but a few petals of flowers on them; but where the plants are already as high as four or five feet, and are loaded with flowers and bolls, a heavy shower of rain will do great harm to the crop. It will, however, prove very beneficial to the jowaree, thoor, tobacoo, and to all spring crops which have been, or are about to be, sown throughout the country."

5. The annexed extract from the Report of Mr. Pillans, the Superintendent of Experiment at the Oomraotee Seed Farm, describes the condition of the experiments in that Division, and some of the remarks apply equally to the state of the crops in the Division :—

"I have the honor to report on the present condition of the Seed Farm."

"During the last week we have had no rain; the weather has been very hot and drying. Our crop altogether is looking very well; and on the portion manured with country manure, the plants (indigenous) are excellent; lots of bolls on them; they promise to give us a very good crop: the effects of that manure is strongly seen now, and I believe that country manure will be the best for Cotton, far better than artificial manures. All the crops in the neighbourhood are very good."

"Our new Orleans, Dharwar, and Egyptian are a little scorched the leaves are brown and curled up. Peruvian is much better. I had to irrigate the exotic species yesterday; some of them look rather bad just now, but we must hope that watering may help to put them right."

"It is my opinion from what I saw of exotics, last season and this season up to this time, that they will not do any good here. I believe they will never suit this part of the Berars, the only thing that I can see to be done with them is to hybridize the indigenous, and try to improve the latter by that means and superior cultivation, which, I think, there is plenty of room for. It may be rather too soon to give an opinion on the exotics, but we shall see better at the end of the season. It will be a good thing to grow a few every year to give us pollen for hybridization."

WEST BERAR (KHANGAON).

6. The Report of Mr. Dunlop is dated Camp Balarpore, the 12th October, and thus describes the state of affairs in that Division :—

"In continuation of my last week's Report I have the honor to inform you that heavy showers of rain have fallen in the last few days, accompanied with thunder and lightning."

"The storms have fortunately been partial, and I do not think they have extended over any very considerable area; but we have had all the rain that we require now, and I fear, if this weather continues, some parts of the country will suffer."

"There is no damage done as yet, however. I have just been talking with some landholders from different parts of the Balarpore Talook, and they all express themselves satisfied with the prospects of the Cotton Crop; and the fields I passed this morning in coming here from Akolah were certainly looking most beautiful."

"I now go on to the Cotton Farm, and from thence to Akote, and in my next Report I hope to be able to give a full account of the Jurree Crop (the crop, North of the Poornah River) from my own observation."

7. The experiments at Sheogaon, near Khangaon, are thus described in detail by Mr. Batcock, the Superintendent of Experiments at the Model Farm. I am sorry to see that the re-appearance of the boll-worm is noticed, but as yet it has only attacked the exotic Cotton:—

"The weather has been favorable to the crops throughout; warm sun and passing clouds, and two light showers have fallen which have refreshed the plants very much."

"The crops are generally looking well, especially the fields of the indigenous varieties of Cotton, the backward portions having made considerable progress. The plants of New Orleans have become much stagnated in growth, and are for the most part at a stand-still. A good number of fine bolls have formed upon them, and are approaching maturity, but many of the latter flowers have fallen, and several young bolls have dropped evidently from the injury done to them by a caterpillar which appears to be the same that caused so much damage last year. The other foreign kinds seem also more or less checked in growth, but not so much so as the New Orleans. A caterpillar has also been found in the soil which cuts off the roots of the Jowaree (millet) plants just below the surface, causing them to die away; a few plants of the New Orleans have also been attacked in the same way. The caterpillar appears to be nearly allied to that of the common cockchafer, and is very similar, but larger. A little before the appearance of this caterpillar, a number of beetles were observed flying about the fields, which may be the perfect insect; it is about 1½ inch long, with a shining dark green body and thorax and light brown elytra."

"The Jowaree fields are looking well. The fields of lakh, gram, &c., last sown are also progressing, but the wheat and flax look badly; the sun is evidently too hot for these yet."

"The work performed has been weeding and 'Dowrie' work. Topping the plants has also been regularly attended to."

"The rain-fall has been 0·53 inches, making a total, since the 1st June, of 24·78 inches."

BOOLUNDSHUHUR FARM (N. W. PROVINCES).

8. A letter from the Collector of Boolundshuhur, dated 7th instant, describes the prospects of the Cotton Crop in his District as follows:—

"The fine and seasonable weather that we have had during the last three weeks has enabled the plants to make much progress. The crop is much behind that of the District Crop, and the Superintendent is of opinion that a few waterings will be beneficial. A requisition has been sent to the Canal Department, and water is promised. The Central India plants seem well suited to the climate of this country, but it has yet to be seen if the American seed will thrive under favorable circumstances. Its failure this year cannot be accepted as the result of a fair trial. The Superintendent is desirous of erecting a masonry forcing house, for the cultivation of the Rhea plants. A very small structure will be required, and I shall address you separately on this subject, submitting for approval at the same time a list of tools and other articles required for the use of the Farm. The Mulberry cuttings, as you will perceive by the Report, have nearly all been destroyed. The Hybrids Cotton plants promise to be well, and the Forest seeds have germinated and are thriving."

"The accounts of the District Crop from all quarters of the District are excellent."

9. In a further letter, under date the 14th instant, the Collector describes the prospects in that quarter as unchanged since the issue of his previous Report.

10. The Reports of the Superintendent of Experiments are dated the 4th and 11th instant, respectively, and here again the boll-worm is noticed. In the first letter Mr. Simpson says,—

"For the week ending 4th October, the weather has been clear and moderately warm, with nice breeze from North and North-West."

"The working operations for the week has been confined to weeding and thinning out some of the late sowings, a part of which are now making great progress; but the ground is getting very dry and hard, and if not irrigated very soon, will be sure to retard their future growth."

"The Egyptian plants are again making some fresh growth, but a good many of them have died. The New Orleans is not improving much; the atmosphere appears to be much too dry for both of the varieties. The Uplands Crosses sent by Major Trevor Clarke have also become very stunted, apparently from the same cause; the other Crosses are looking quite healthy."

"Some of the first sown Hingunghât bolls are now beginning to open, and on examining them, I find several of them are eaten with the worm. The *Rhea* plants are coming on very well, but in another week, I believe, there won't be a Mulberry-cutting alive, the white-ants are so very bad on them."

In the second Report, dated the 11th instant, he adds,—

"For the week ending 10th October, there has been little or no change in the weather, it is still very hot; and with the Northerly wind, every thing is getting very dry."

"The working operations for the week have been much the same as the previous one, with the addition of a few men preparing the water-course for irrigation, which was commenced last night; and if all goes right, I expect to have it nearly finished by Wednesday evening."

"The New Orleans is again becoming a little browned in the foliage, but the rest of the crops is much the same as last week, with a little improvement. The boll-worm is still on the increase, and a great many of the bolls are badly eaten, but the Native cultivators appear to pay very little attention to it."

11. The reports of the growing crops of the autumn crop from other parts of Northern India are, I hear, very favorable.

12. We have then at present every reason to hope for an excellent Cotton harvest. The quantity available for export will, of course, very much depend on the area sown with Cotton. As explained to your Chamber on former occasions it will not be possible to present you with a reliable estimate of the sowings before another month or six weeks. My next Report will, I hope, contain the information required under this head, and to it I shall hope to be able to add my opinion on the prospects of the crop in Central India, based on personal observation during a rapid tour through the Wurdah and Poornah Valleys.

13. Although it is impossible at present to supply reliable statistics of the area sown with Cotton, it is not difficult to predict, with some feeling of certainty, what the result is likely to be. From enquiries made among the people and the dealers, the general impression is that the cultivation has *not* fallen off. The cultivators realized sufficiently high prices last year to encourage them to try Cotton again. The great fall in the price happened comparatively late in the season when the Cotton had left the cultivators' hands, so that the fall has had little or no effect upon them, and it is believed that this season again they have sown Cotton as generally as before.

No. 43 of 1870.

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, NOVEMBER 5, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

HOME DEPARTMENT.

SERICULTURE IN BRITISH BURMA.

The following Note by the Deputy Commissioner, Thayetmyo, on Sericulture in British Burma, with reference specially to the Districts of Prome and Thayet, is published for general information :—

Introduction of Silk-worm.

1. Concerning the period at which and the country from which the silk-worm and mulberry were first introduced into Burma, nothing certain can be ascertained from the traditions of the people themselves. From time immemorial the present silk-growers and their forefathers have been engaged in the manufacture. Neither the worm nor the mulberry are indigenous, *i. e.*, neither of them are found in a wild state. They appear therefore to have been imported, and I am inclined to agree with the prevailing belief that they were introduced by the valley of the Irrawaddy from Assam or China, and not across the mountains from India.

Occupation distasteful.

2. The occupation of manufacturing silk in British Burma is a lucrative one, and many parts of the country are admirably adapted for it. That under these circumstances the occupation is not more extensively followed than it is, is due mainly to the Budhistic prejudice against the taking of life. The manufacture of raw silk of the best quality involves the death of the chrysalis in the cocoon, an act of impiety which is looked upon by orthodox Budhists with horror. The people who live by the commission of this sin therefore are considered by their neighbours as of "low caste," if such a term can be appropriately used with regard to a people who acknowledge no distinction of caste. The silk-growers live in villages by themselves, and hold but little social intercourse with their neighbours for fear of being taunted with allusions to the wickedness of their calling. In the Eastern Yoma range these people, though of pure Burman

descent, have come to be regarded as a distinct tribe and are called Yabaings or Zabaings.

Cultivation of mulberry.

3. The Burman mulberry (*Morus Indica?*) is a thin, lanky shrub throwing out several vertical shoots from near the ground, and growing to a height of eight or ten feet. It has no flower or fruit, and is propagated by cuttings. After about three years a plantation of mulberry trees ceases to produce good and succulent leaves, and is then uprooted or abandoned. The plant is grown chiefly on the slopes of hills, but a small quantity is likewise produced on alluvial soil by the margin of mountain streams, where it appears to thrive well, though the silk produced in such localities is inferior to that obtained on high land. The Burmans call it "Po-tsa-beng" (literally "silk-worm's food tree"). I am not aware whether it differs from the *Morus Indica*, but have sent some plants to the Horticultural Society at Rangoon with the view of ascertaining its species.

If the mulberry leaves fail, the worms are fed on the leaves of the *Broussonetia papyrifera* (Burmese Mahlaing-beng) a tree belonging to the mulberry family from the bark of which Burmans also make their coarse paper known as "*parabaek*." The leaves of the above two trees are the only ones ever used to feed silk-worms upon in British Burma, or at least in this District.

Inferior quality of silk.

4. The silk produced in Burma, though admirably adapted for the manufacture of the strong coarse silks so universally worn by the natives of the country, is of a very rough and inferior description, and would, it is believed, be almost unsaleable in Europe. The European value of a specimen of it was in 1855 estimated by the Calcutta Chamber of Commerce at 5 shillings or 6 shillings a pound, or not much more than half the price which it fetches in the local market.

Statistics of production.

5. In British Burma the manufacture of silk is carried on in the Districts of Prome, Thayet, Henzadah, and Toungoo, and in the northern portion of the Rangoon District. The mulberry is grown chiefly on the slopes of the Yoma range—the watershed between the valleys of the Irrawaddy and Sittoung. A small quantity also is grown on the eastern slopes of the Arakan range, and a still smaller quantity in the valley of the Pairee stream which rises on the Arakan range. The silk produced here (on the Pairee) fetches a lower price than that grown on the high lands; but the people make a profit by the sale of the eggs which are taken across to the silk-growing localities on the east of the Irrawaddy and sold there. The whole of the silk produced is used in local manufactures. None of it, it is believed, finds its way to the Rangoon market.

From the information I have collected, the following appear to be the most prominent statistics connected with Sericulture in the Districts of Prome and Thayet, the two northernmost Districts of Pegu extending on both sides of the Irrawaddy, from the Yoma range on the east to the Arakan mountains on the west, covering an area of 5,500 square miles and containing a population of 360,712 souls. The number of persons engaged in silk culture is 713, of whom 422 are men, and 291 women. The number of acres under mulberry cultivation is 452, and the average annual out-turn of raw silk is 5,469 viss (1 viss=3·65lbs.), or about 9 tons. The price of the raw silk when brought to the markets on the river bank varies between Rs. 15 and Rs. 24 a viss, and the average price is about Rs. 20. The value of the whole at this rate will be Rs. 1,09,380, or £10,938. The above statistics for Prome and Thayet may be depended upon as tolerably accurate, though, as the information is obtained from the silk-growers themselves, the out-turn of silk is probably rather under than over the mark. I have no statistics to guide me in estimating the amount of silk produced in the other Districts, but I have travelled through them and believe that the following estimate is not far wrong.

Toungoo probably produces as much as Prome and Thayetmyo together, and Rangoon and Tharrawaddy together about the same amount. This will make the total out-turn of raw silk in Pegu amount to 16,400 viss, or about 27 tons, of the value of £32,800.

Silk is produced also along the Yoma range beyond the British frontier in Burma Proper.

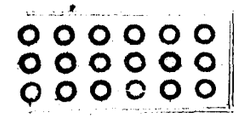
Method of manufacture.

6. The method pursued by the manufacturers of raw silk in British Burma is rude and careless in the extreme. All the processes are carried on in the ordinary bamboo dwelling-houses of the country, which are open to all the elements, and generally smoke-begrimed and dirty. The worms and cocoons share the accommodation with the family of the house-owner, and live and thrive in close proximity to the place where the culinary and other domestic operations of the household are carried on.

The Japanese silk-worm is said to be of such delicate organization as to be seriously affected by bad smells or tainted air. He certainly must be a much more sensitive insect than his Burman *Congener*, and his life in a Burman hut would be a very brief one.

The plant of a Burmese silk filature is simple and inexpensive, consisting only of the following articles:—A number of circular flat trays with slightly raised edges. They are made of strips of bamboo, plaited, and are from 2 to 4 feet in diameter; some neatly made circlets of palm leaves three or four inches in diameter; some strips of coarse cotton cloth; a common cooking pot; a small bamboo reel; a round block of wood with handle and axes turning on wooden or bamboo supports, and a two-pronged fork.

The different processes commencing from the time when the eggs are laid are as follows:—The males and females having completed the procreating process, the males are thrown away and the females placed within palm leaf circlets on a sheet of coarse cotton cloth, two or three feet square. The eggs are then deposited on the cloth, and as they adhere to it the cloth becomes covered with circular cartoons of eggs in this fashion.



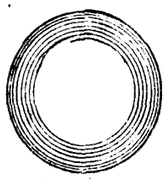
These cartoons when sold, are sold at the rate of about eight for a rupee.

The moths having completed the laying of their eggs, which takes them about a day, they (the moths) are thrown away. The pieces of cloth with the eggs are wrapped up and left to themselves. About the eighth day the eggs are hatched: the cloths are then opened and worms begin to appear. As the worms, tiny little black specks, emerge, they are swept by a feather off the cloth on to a tray. The worms cling tenaciously to the cartoons and cannot be shaken off. The feather-brushing operation, though rough, does not appear to hurt them. The produce of one circular cartoon will more than fill one large tray 2 or 3 feet in diameter with worms when full grown. The worms are hatched in the morning. In the afternoon they are fed with finely chopped-up pieces of the tenderest mulberry leaves. This goes on for four or five days, when the worms become torpid, sleep for 24 hours, and shed their skins. They then become voracious and require plenty of strong leaves. Beyond being plentifully supplied with food they receive but little care. Very little attention is paid to cleanliness. They live and thrive on heaps of *excreta* and refuse leaves, and they bear handling of the most rough and reckless description, being scraped up in handfuls and tossed about in a way which looks most dangerous to their delicate frames.

Their only enemy appears to be a kind of blue-bottle fly, which, when a tray is exposed, alights for a second, punctures and lays its eggs on the body of a worm. These worms become unhealthy, and are generally picked out and thrown down through the bamboo flooring to the fowls which lie in wait for

them below the house. If such worms are allowed to make cocoons, the fly eggs develop in the chrysalis and spoil the cocoons. To protect the worm from this fly, the trays are generally kept covered with a cloth.

The silk-worm's existence lasts about 30 days, during which period he becomes torpid and moults four times. When "ripe," or ready to commence cocooning, their colour changes from a blueish to a pinky white. The ripe ones are then picked out by the hand and thrown in heaps on to a small tray, in which they are conveyed to the cocooning tray. This is a large sized tray 3 or 4 feet in diameter, within which a long ribbon of plaited bamboo, a couple of inches wide, is wound round and round with its edges on the flat of the tray, as described by the figure in the margin. The worms are then taken up in handfuls and scattered with as little care as if they were so many grains of corn over the tray. They gradually find their places and then spin their cocoons, attaching them to the walls of the plaited bamboo.



Whilst this operation is going on the trays are covered with a cloth. The cocoons are generally yellow; some few are pure white. In 24 hours the cocoons are completed. They are then torn away from the tray and placed in baskets. In two or three days those cocoons from which the best silk is to be reeled are taken out and placed in a pot (the family cooking pot) of water, which is allowed to simmer over a slow fire. Above the pot is placed a pair of cross sticks from which a bamboo reel is suspended, and beside the pot is a wooden cylinder turning on a trestle. Some filaments of silk are caught and drawn out of the pot, run over the bamboo reel, and fastened to the cylinder.

Then the reeler (generally a woman) with an iron fork in one hand and the handle of the cylinder in the other keeps catching up the filaments in the pot with the fork and reeling them on to the cylinder. The thread produced is coarse and dirty, and brings with it from the pot bits of pupæ and other refuse, all of which goes with the silk on to the cylinder.

The silk in the pot having been exhausted, the denuded grubs are taken out and fried in oil; they form a savoury addition to the family dinner.

Those cocoons which are left to produce moths are ready in about eight days. The moths are then formed. As they emerge they are put into large trays and kept there for a day, during which time the coupling process goes on. The males having been thrown away, the females are arranged on a cloth as before described to lay their eggs.

A coarse and inferior kind of silk is reeled off the cocoons which have been allowed to come to maturity. This silk fetches only a third of the price obtained from those cocoons which are reeled whilst the chrysalis is still in them, but as, by this process, the sin of taking life is avoided, it is preferred by some who are more attentive to the duties of religion than their neighbours.

The length of the different stages making up the cycle of the Burman silk-worm's existence is as follows:—

Eggs	...	8 days or 11 days in cold weather.
Worm	...	30 ,,
Cocoon	....	8 ,,
Moth	...	1 ,,
Total	...	47 days

From the completion of the cocoon to the appearance of the worm therefore there are only 17 days in the hot weather and 20 days in the cold weather. This is altogether too short a time to allow of the Burman species being conveyed to Australia (by one stage at least) with any hope of success.

Improvement of silk manufacture in British Burma.

7. The chief merit of the Burman silk-worm appears to be its extreme hardiness as compared with other species. Whether the coarseness of its silk is inherent in the nature of the worm, or is due to the rough and careless manner in which it is treated, my limited knowledge of silk manufacture does not enable me to say. There certainly appears to be room for improvement as far as concerns the manufacture of silk fitted for the European market. Whether the manufacture of such silk would pay the growers better than the manufacture of the coarse stuff they now produce, I can hardly say. But any recommendations for the improvement of the present system of silk culture made by a person having a competent knowledge of the subject, would not be wasted on the Burman silk growers, provided such recommendations were at all feasible.

The silk growers are quite ready to adopt any measures, whether by the introduction of new breeds of silk-worms or the improvement of their machinery, which may be expected to be profitable.

THAYETMYO,
16*th August* 1870.

HORACE A. BROWNE,
Deputy Commissioner.

Printed and published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta*

No. 44 of 1870.

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, NOVEMBER 12, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

FINANCIAL DEPARTMENT.

ANNUAL REPORT ON THE OPERATIONS OF THE POST OFFICE OF INDIA FOR THE YEAR 1869-70.

No. 3188 A, dated, Simla, 27th October 1870.

From—A. M. MONTEATH, Esq., *Director General of the Post Office of India,*

To—*The Secretary to the Government of India,* FINANCIAL DEPT.

I have the honor to submit a report on the administration of the Post Office of India for the official year 1869-70.

2. Before proceeding to give the usual statistics I shall notice briefly a few of the principal events of the year.

COMMUNICATIONS WITH PLACES ABROAD.

3. The most important relations which India has with places abroad are those with the United Kingdom; and I shall therefore allude first to the changes which have taken place in the postage rates and conditions affecting correspondence with that country. The scale of postage chargeable on packets of books and patterns exchanged with England was, during the year under report, altered by the adoption of lower rates for lower weights. Formerly such packets were chargeable at the rate of 2 annas 8 pie per 4 ozs. when sent *viâ* Southampton and at 4 annas per 4 ozs. when sent *viâ* Marseilles; but, under arrangements made during the year, the rates marginally noted were substituted for the above. A one ounce packet posted in India for England is now chargeable with a postage rate actually less than is charged on a packet of like weight intended for delivery in India, this

	Not exceeding 1 oz.	1 oz. to 2 ozs.	2 ozs. to 4 ozs. and for every additional 4 ozs.
	A. P.	A. P.	A. P.
Vid Southampton...	0 8	1 4	2 8
Vid Marseilles ...	1 4	2 8	4 0

some-what anomalous result being due to the high minimum chargeable weight (10 tolas, or about 4 ozs.) prescribed for inland packets; but, as stated in a subsequent paragraph (45), I hope that this anomaly will not long exist.

4. The special privileged rates formerly allowed to Officers of the Army in India in respect of their correspondence with England were withdrawn, with effect from the 1st January 1870, the correspondence of Military Officers becoming thenceforward chargeable with the same postage rates as those applicable to the correspondence of the public generally.

5. The route *viâ* Brindisi was made available experimentally during the year under report, the rates noted on the margin being charged in addition to those prescribed for the Marseilles route. The results show, with few exceptions, a gain of about two days in transit *viâ* Brindisi; and I believe it to be in contemplation to adopt this route next summer in supersession of the Marseilles route by a re-arrangement of the Mediterranean Steam Service, under which the mail steamers of the Peninsular and Oriental Company will ply between Alexandria and Brindisi instead of between Alexandria and Marseilles. I have no information yet as to what the postage rates chargeable on correspondence forwarded by the Brindisi route will be under the new arrangement.

Letters 2 annas per ½ oz. extra.
Newspapers 8 pie each extra.

6. Turning now to communications with places abroad other than the United Kingdom, I may mention that during the year under report the rates of postage to Constantinople, the United States of America, Canada, Nova Scotia, New Brunswick, and other places were reduced. The scale of postage chargeable on packets of books and patterns addressed to various countries in Europe and other places through the United Kingdom was altered by the adoption of two ounces (instead of four ounces) as the minimum chargeable weight.

7. Arrangements were also made with the Ceylon Government providing for the pre-payment of covers of all descriptions to destination in both directions.

LOCAL STEAM SERVICES.

8. The Local Steam Services performed under contract with the British Indian Steam Navigation Company remained much as before, *viz.*:—

(1). Calcutta and British Burmah, *weekly*, with a continuation to the Straits *once every four weeks*, the subsidy being Rs. 21,333 per mensem, of which Rs. 1,083 are paid by the Straits' Government.

(2). Bombay and Kurrachee, *weekly*, with a continuation to the Persian Gulf *once a fortnight*, the subsidy being Rs. 23,111 per mensem.

(3). Calcutta, Bombay, and intermediate ports on the East and West Coast, *fortnightly*, the subsidy being Rs. 10,000 per mensem.

(4). Madras, Rangoon, and intermediate ports on the East Coast, *once every four weeks*, the subsidy being Rs. 6,000 per mensem.

(5). Calcutta, Port Blair, and Camorta, *fortnightly*, without any subsidy, but under contract arrangements in respect of the transmission of Government stores, &c.

The line last mentioned was organised during the year under report, and is still only experimental. At first starting the steamers of this line proceeded on to the Straits, but this extension was discontinued. There are also other steam services with other Companies as follows:—

1. With the Irrawaddy Steam Flotilla Company for communications about three times a month between Rangoon and Mandalay.
2. With the same Company for a monthly communication between Moulmein, Tavoy, and Mergui.
3. With Jardine, Matheson and Company (of Hong-Kong) and Apcar and Company (of Calcutta) for the conveyance of mails monthly between Calcutta, the Straits, and Hong-Kong, the dates of the starting of the steamers being regulated primarily with reference to the Calcutta opium sales.
4. With the Euphrates and Tigris River Steam Navigation Company for fortnightly communication between Busreh and Bagdad.

The last mentioned contract is made by Her Majesty's Government, although I believe that the subsidy (Rs. 4,000 a month) is charged against the Indian Revenue.

9. It is in contemplation, I understand, to extend the communication with Mandalay to Bhamo, the service between Rangoon and that place being performed weekly; but of this arrangement, if carried out, notice will more appropriately be taken in my next report.

MODIFICATION OF INLAND POSTAL RATES AND CONDITIONS.

10. On the 1st April 1869, that is, on the first day of the year now under report, the limits of weight allowed for the several rates of Inland Letter Postage were doubled as per margin. This much needed alteration has proved to be a much less expensive measure than was originally anticipated, but on this point remarks will more appropriately be made in a subsequent section under the head "Financial Results."

Rates of Postage.	Limits of Weight.	
	Former limits.	New limits.
½ anna	¼ Tola ...	½ Tola.
1 anna	½ Tola ...	1 Tola.
2 annas	1 Tola ...	2 Tolas.
and so on.		

11. On the 1st September 1869 the postage rates chargeable on pattern packets which had till then been the same as those chargeable on book packets, *viz.*, one anna per ten tolas, were doubled. The measure was a reasonable one, for there is no good ground for carrying pattern packets at the same low rates as are provided for books. On the same date a change was made in the scale of postage chargeable upon banghy parcels. The former scale of postage varied not merely with weight, but with distance, and the distance limits were so numerous that it was almost impossible for the public to ascertain the rate chargeable upon a parcel without reference to the Post Office; and the constant change of routes, as well as the large increase in the number of Post Offices, rendered it extremely difficult for the Department to keep its own Offices informed of the charges properly leviable. The change made in September 1869 involved a reduction of the distance rates to two, *viz.*, a single and double distance rate. This was a great improvement on the former system, and the Government has since on my recommendation taken a further step in the same direction by making the postage charge on banghy parcels independent altogether of distance. This last step, however, having been taken during the current year will fall more appropriately for remark in my next report.

12. I may here mention that during the year under report a rule was made under which complaints against the Post Office, certified as such under the full signature and address of the sender and addressed to any Officer of the Postal Department, are not chargeable with any postage.

MODIFICATION OF POSTAL ESTABLISHMENTS, &c.

13. The principal modifications under this head appertain to road establishments, which will more conveniently be noticed in a subsequent paragraph (20). I may here mention, however, that in prospect of the junction of the Great Indian Peninsula and East Indian Railways, as well as of the Upper and Lower Sections of the Punjab and Delhi Railway, arrangements had to be made for a radical change in the system of railway sorting. The previous existence of breaks in railway transit gave time for a large amount of sorting in stationary Offices, but the final junction of the railway systems of Bengal, the Punjab, and Bombay necessarily involved the supersession of all arrangements for the sorting of through mails otherwise than during transit. The system of railway sorting previously in force had originated at a time when the lengths of continuous railway were comparatively small and was not adapted to the much more comprehensive requirements arising from continuous lines of such enormous extent as now traverse the continent of India. In view of this alteration of circumstances, it was deemed advisable to organize a system of

what has been called "Frontier Railway Sorting" distinct from the previously existing Local Railway Sorting. Under this system all through mails passing between different provinces through Allahabad are disposed of by a separate Sorting Establishment working on sections of the railway converging at Allahabad. As already stated, steps were taken during the year under report for the introduction of this arrangement simultaneously with the junction between the Bengal and Bombay Railway Systems. Although there is much still to be done in the way of improving railway sorting arrangements, I think that it only requires a careful and systematic working out of the measure which has been introduced. The system will be greatly helped by a proper arrangement of through mail trains, which, after long and troublesome negotiations, has at last been almost brought to a satisfactory conclusion.

14. Under this head I may also refer to the separation at the commencement of the year under report of the postal jurisdiction of Sind from that of the Punjab, the Chief Inspector of the former being invested with the powers of a Post Master General and placed in direct relations with my Office. The opportunity was taken of adding to the jurisdiction of the Chief Inspector of Sind the postal arrangements in Turkish Arabia, including the Offices on the line between Kurrachee and Bagdad. This measure was deemed advisable not merely because the postal arrangements in Sind had no real or direct connection with those of the Punjab, but because the postal service in Turkish Arabia could not be conveniently attended to by the Post Master General of Bombay.

15. It was also found that the postal arrangements in the Berars could be better controlled from Nagpore than from Bombay, the Post Master General of the latter Circle having more than ample work in connection with the postal arrangements of the Bombay Presidency. The Berars were therefore transferred from the postal jurisdiction of Bombay to that of the Central Provinces, with effect from the 1st April 1870.

FAMINE OF 1869.

16. I mention here the famine of 1869, principally because it had a marked effect upon the finances of the year. In a Department like the Post Office, the work of which is largely carried on by runners, who must be enabled to feed themselves and buy horses, camels, &c., the keep of which varies directly with the price of food, a famine like that of 1869 must have a very material bearing on the finances, respecting which more detailed remarks will be made in a subsequent Section (Financial Results).

SECTION I.—POST OFFICES, LETTER BOXES, AND RURAL MESSENGERS.

17. The number of new Post Offices and Letter Boxes opened during the year in each Circle will be found in Appendix No. 1, of which an abstract is given on the margin. As regards new Post Offices, the number opened during the year under report is considerably less than the number opened in either of the two preceding years, the reason of this being the necessity (resulting from financial pressure) of confining the extension of the Department to moderate limits, only those cases being provided for where the need of additional postal facilities was most urgent and where the prospect of increased revenue was most certain.

	Opened in 1868-69.	Opened in 1869-70.
Post Offices	384	262
Letter Boxes	167	515
TOTAL	551	777

18. The number of Letter Boxes opened during the year has been much larger than in the previous year. This mode of extending postal facilities costs but little, and could, therefore, be freely resorted to even during a year when the most rigid economy had to be enforced.

19. The number of additional rural messengers entertained during 1869-70 was 165, against 227 entertained in the previous year.

SECTION II.—POSTAL LINES.

20. The total extent in miles of each class of postal lines at the close of the year as compared with the returns of the previous year is given on the margin; the details for each Circle will be found in Appendix II. The increase in railway line mileage is composed mainly of extensions of the Punjab and Delhi Railway from Umballa to Loodiana, and from the Beeas to Jullundur, of the Great Indian Peninsula Railway from Sholapore to Goolburgah, and of the Madras Railway from Tadputry to Gooty. A further extension of the Great Indian Peninsula Railway to Jubbulpore, thus effecting a junction between it and the East Indian Railway, took place just after the year under review, and is not consequently included in this statement. The decrease under the head of Mail Cart, &c., is the net result of a very large number of reductions and extensions. Among the extensions may be mentioned the substitution of mail carts under contract between Calcutta and Midnapore and between Gya and Patna in Bengal; between Allahabad and Fyzabad (since abolished) in the North-Western Provinces; between Wuzeerabad and Sealkote and Ferozepore and Lahore in the Punjab; and between Munmar and Dhoolia (Tanga Dâk) and Deesa and Anadra (Camel Dâk) in Bombay. Among the reductions may be mentioned the abolition of the line between Cawnpore and Jhansie in the North-Western Provinces, and between the Beeas and Jullundur, Umballa and Loodiana, and Rawul Pindee and Kohat in the Punjab. Besides the above, there were large alterations consequent on the transfer of the trunk route between Bombay and Madras from the old route *vid* Poona, Dharwar, and Bangalore to a new route *vid* Goolburgah and Gooty. The gradual extension of the Madras Railway on the one side and the south-east line of the Great Indian Peninsula Railway on the other led, in the early part of the year under report, to a consideration of the expediency of transferring the mail communication to the route which would eventually supersede the old line of transit through the South Mahratta Country. The absence of anything which could be called a road on the north side of the Kistna and the existence only of a very inferior road south of that river, as well as the numerous intervening unbridged streams, made this Department hesitate to supersede an old and tried line until there was full security of an uninterrupted and quicker transmission of mails by the new route. It was not therefore till the Bombay Railway had opened to Goolburgah and the Madras Railway to Gooty that the measure was carried out, the new line between those places being served on the northern side of the Kistna by a strong runner establishment and on the southern side by a mail cart. At the same time steps were taken for making the requisite modifications in the establishment of the old line, the portion between Dharwar and Bangalore being abolished and that between Poona and Dharwar reduced to the requirements of merely local traffic. The former mail cart line between Sholapore and Hyderabad was likewise abolished, a new and shorter line from Goolburgah to Hyderabad being substituted for it. The change of the route between Madras and Bombay above described resulted in a saving of 24 hours in the transit of the mails. It has already been stated that the junction of the Bombay and Bengal Railways took place immediately after the close of last year. This change had, of course, been anticipated, and all the arrangements for it had been made during the year under review, the Jubbulpore and Nagpore mail cart line being first reduced and shortly afterwards altogether abolished, and the line between Gwalior and Indore (no longer required for through traffic) converted into a runner line.

YEAR.	Railway.	Mail Cart, Horse Dâk, and Camel Dâk.	Runners and Boats.	Sea.	TOTAL.
1868-69 ...	4,234¾	5,460⅜	34,973	5,613	50,281⅜
1869-70 ...	4,433¾	5,333	35,498	5,613	50,877¾
Increase ...	199	.....	525	.....	596⅜
Decrease...	... .	127⅛	.....	.....	.....

21. The increase in mileage under the head of "Runners and Boats" is due to the amount of 300 miles, to the extension of the river steamer line

between Rangoon and Thyetmyo to Mandalay, the remaining portion of the increase being the net result of a very large number of modifications which it would be out of place here to attempt to specify.

SECTION III.—CORRESPONDENCE.

22. Appendix No. III contains the correspondence returns of the year, of which an abstract is given on the margin. In the report of the previous year I stated that the increase (above 10 per cent.) under the head of "Letters" showed a larger development than in any recent year. The returns of the year now under report show an increase (11½ per cent.) of a still larger amount; and although this satisfactory result may be due to many different causes, I think it probable that it is in no small measure due to the increased limit of weight allowed for the several rates of postage. The increase of the limits of weight was a measure which without doubt conferred a great boon upon those who use the Post Office, and it is most satisfactory to find evidence of the appreciation of this boon in the correspondence returns now referred to. In a subsequent paragraph it will be shown that the financial results of the measure are as satisfactory as could have been hoped for. The very high rate of increase under the head of "Books and Patterns" is gratifying. It was in 1867-68 that this class of article first showed a really encouraging expansion, being for that year no less than 19·89 per cent.; and since then this rate of increase has been substantially maintained.

Year.	Letters.	Newspapers.	Parcels.	Books and Patterns.	Total.
1868-69 ...	68,891,232	5,773,585	699,206	623,594	75,987,617
1869-70 ...	76,867,918	6,165,039	764,911	736,710	84,534,578
Increase ...	7,976,686	391,454	65,705	113,116	8,546,961
Increase percentage	11·57	6·78	9·39	18·13	11·24

23. The Letter returns may be further analysed as per margin. It will be observed that the highest rates of increase are under the heads of "Paid" and "Registered." The increase of registered letters is perhaps in some degree due to the compulsory registration of letters containing coin or currency notes.

Year.	Paid.	Unpaid.	Service.	Registered.	Total.
1868-69 ...	38,904,155	24,612,666	4,017,709	1,356,702	68,891,232
1869-70 ...	44,668,194	26,594,484	4,117,424	1,487,816	76,867,918
Increase ...	5,764,039	1,981,818	99,715	131,114	7,976,686
Increase percentage	14·81	8·01	2·48	9·66	11·57

24. The correspondence received was disposed of as shown in the following statement:—

Directly delivered (Appendix III) 81 per cent.	62,375,917
Retained for re-issue, 19 per cent.	14,492,001
Total ...	76,867,918
Details of Re-issue.	
Sent to District Post Office	4,468,154
Sent to Dead Letter Office	2,177,325
Remainder disposed of by redirection to other Offices, or sent to Branch Offices, or in deposit at the end of the year	7,846,522
Total ...	14,492,001

These figures call for no particular remark.

25. I do not think it necessary in this or future reports to submit a statement of missent articles. In my report for the year 1867-68, I observed that the returns of missent articles were incomplete, only those received *for delivery* at the wrong Office being entered, while those missent to the *wrong Sorting Office* were omitted. In the report for 1868-69 I again referred to this incompleteness, remarking that the trouble entailed in remedying it would be quite incommensurate with the advantage; and that the English Post Office for like reasons made no attempt at recording the number of articles missent to a wrong Sorting Office. I see no advantage in continuing from year to year to give statistics which are confessedly incomplete, and which it is

impossible without a large amount of unremunerative trouble to make complete.

26. Statistics respecting the working of the several Dead Letter Offices are given in Appendix IV, and below will be found in the usual form a comparison of the results for the last three years:—

	Number.			Proportion of each class to the whole.		
	1867-68.	1868-69.	1869-70.	1867-68.	1868-69.	1869-70.
Letters returned to senders ...	723,266	880,933	971,405	40·65	42·66	44·61
Letters undisposable ...	1,055,982	1,184,201	1,205,920	59·35	57·34	55·39
Total ...	1,779,248	2,065,134	2,177,325	100	100	100

The proportion of covers returned to the senders continues to increase. Notwithstanding this improvement in the working of the Dead Letter Offices, I feel that there is much improvement still to be looked for. Endeavours have recently been made in this direction by the better organisation of the Dead Letter Office in Calcutta and by the creation of a separate Dead Letter Office at Kurrachee. As a rule, letters that cannot be delivered are sent for disposal to the Dead Letter Office of the postal circle in which they originated, that being the locality where the language and character are most likely to be understood. The province of Sind, including the Offices in the Persian Gulf and Turkish Arabia, gave rise to a number of letters written in languages or dialects (such as Sindee and Hebrew) which could not be satisfactorily disposed of in either of the neighbouring Dead Letter Offices of Bombay or Lahore; and I hope that the establishment of a small Office at Kurrachee will tend to improve matters. Dead Letter Office work in India is beset with special difficulties owing to the great variety of character, language, and dialect; but, as already stated, I feel that even with these difficulties the results are not as good as they might be.

27. The returns of ordinary postage stamp sales are given in Appendix V. The gross value of stamps sold shows a small decrease, *viz.*, from Rs. 28,59,801 to Rs. 28,28,986. Considering that the limits of weight allowed for the several postage rates were doubled at the commencement of the year under report, I consider this result as most satisfactory, but shall reserve further remarks upon that point to a subsequent Section (Financial Results). As might be expected, the sales of 1 and ½-anna labels have largely increased, while those of 1, 2, and 4-anna labels have decreased. The increase and decrease in the sales of the several classes of labels is given below:—

The decrease in the gross value of Stamps sold in 1869-70, *as compared with* 1868-69, *is* 1·07 *per cent. against a corresponding increase of* 12·49 *per cent. in the preceding year.*

	8-Pie Labels.	½-Anna Labels.	1-Anna Labels.	2-Anna Labels.	4-Anna Labels.	6-Anna 8-Pie Labels.	8-Anna Labels.	½-Anna Note Paper.	½-Anna Envelopes.	1-Anna Envelopes.
	Decrease.				Decrease.		Decrease.		Decrease.	
1867-68 as compared with 1866-67, exclusive of Straits' Settlement	22·69	3·76	·83	·99	3·603	253·104	6·79	25·31	44·77	115·68
	Increase.	Increase.	Increase.	Increase.	Increase.	Decrease.	Increase.	Increase.	Decrease.	Decrease.
1868-69 as compared with 1867-68	40·48	4·47	5·28	17·58	7·69	43·88	82·15	146·37	45·69	62·19
			Decrease.	Decrease.	Decrease.			Decrease.		
1869-70 as compared with 1868-69	3·004	12·74	16·64	16·501	4·18	20·76	11·77	44·19	22·001	54·55

28. The returns of the sale of service stamps are given in Appendix VI. The sale of these stamps has decreased during the last two years, but this is

due solely to additions having been made to the list of public Offices with which accounts of postage are kept by the Post Office, the covers sent by such Offices being forwarded under frank without actual payment.

SECTION IV.—DISTRICT POST.

29. As the Government is aware, the district post consists of lines of communication connecting the head quarters of each district with the interior police and revenue stations, and is maintained primarily for the purpose of conveying official correspondence, the expense being met, in some parts of the country, from the proceeds of a special cess levied for the purpose, and in other places forming a charge on the general revenues. As mentioned in previous reports, the management of the district post in Bombay and the North-Western Provinces has for some years been confided to the officers of this Department acting in that respect under the orders of the local Governments. The steps taken of late to obtain a similar control over the district post in other provinces are still in progress. Under an arrangement made with the Punjab Government, the control of the district posts in that province is to be made over to the Imperial Postal Department as the revenue settlement of each district is completed; and there is now an early prospect of the measure being carried out in three districts of the Umritsur Division. As regards Bengal, as mentioned in previous reports, the first step taken was to obtain the management of the district post in a single experimental district. The result being very satisfactory, a like transfer of control has been effected in 17 districts (increased since the close of the year to 22 districts). There was perhaps no province in which more need existed for an improved district post than in Lower Bengal, and I am glad, therefore, to be able to state that the change, so far as it has gone, has resulted in great improvement. In all these districts there has been an increase of correspondence, and in some this increase has amounted even to 100 per cent., while the speed of the mails has also been considerably accelerated. In the Madras Presidency the measure is still under experiment in a single district, but I hope that it will ere long be brought into general operation. In Oude the same difficulty about transfer referred to in paragraph 47 of my report of last year still exists, *viz.*, the fact of that province being postally under the jurisdiction of the Post Master General of the North-Western Provinces, who could not be of the same help to the local administration in the management of the district post as an Officer resident in the province. The remedy previously indicated, *viz.*, the separation of Oude from the postal jurisdiction of the North-Western Provinces and the appointment of a Chief Inspector exercising the powers of Post Master General, was, as stated in my last report, deferred owing to the financial pressure; but I have recently deemed it right to submit the proposition for the orders of Government with reference to the fact that large reductions have of late been effected in the Post Office Department as well as to the circumstance that the district post delivery arrangements in Oude urgently demand attention. The fact, that of the covers made over by the Imperial Postal Department to the Oude district post for delivery no less than 30·72 per cent. are returned as undeliverable, shows how great is the necessity for reform.

30. The result of the district post operations in so far as concerns correspondence passing between it and the imperial post is given in Appendix VII, of which the following is an abstract:—

	Number.	Percentage.
Sent to district post for delivery	4,754,233	Being 5·62 per cent. of the total number of covers received for delivery.
Portion of the above received back undelivered ...	505,900	Being 10·64 per cent. on the number sent to the district post.
Received from district post	12,81,762	Being 3·32 per cent. on the total number of covers received by General Post Officer for delivery.

The proportion of covers received back undelivered, although slightly less than in the preceding year, is still very far from satisfactory; but I hope that the arrangements now in progress in Bengal and the further arrangements still to be effected in Madras, the Punjab, and Oude will have a considerable effect upon this proportion.

SECTION V.—MISCELLANEOUS.

31. The usual statement showing the number of complaints made by the public during the year is given in Appendix VIII. The absence of any returns from Bombay for 1868-69, owing to the destruction of the Post Master General's records by fire, interferes with any comparison between the results of the two years. But, as observed in previous reports, the statement does not under any circumstances afford material for a reliable conclusion as to the working of the Department; and I much doubt the use of including a statement of this kind in my annual report.

32. The number of cases in which punishment has been inflicted upon Post Office employés for offences committed by them is 136 for the year under report, against 130 for the previous year; the number in each Circle is given in Appendix IX.

Names of Postal Circles.	1868-69.			1869-70.		
	British Territory.	Foreign Territory.	Total.	British Territory.	Foreign Territory.	Total.
Bengal	1	0	1	3	0	3
Madras	5	1	6	2	6	8
Bombay	2	8	10	0	2	2
N. W. Provinces ...	9	6	15	4	11	15
Punjab ...	0	0	0	1	1	2
British Burmah ...	0	0	0	0	0	0
Central Provinces ...	0	1	1	0	0	0
Sind	0	0	0	0	0	0
Total ...	17	16	33	10	20	31

33. The total number of highway robberies of mails is slightly less than that for the preceding year, in which they numbered 33. As shown in the marginal abstract the number for 1869-70 is 31. The great bulk of the highway robberies during the year under report occurred in Rajpootana and Central India, and probably resulted in some degree from the severe pressure of the famine in those parts of the country.

34. The localities in which the robberies occurred are given below:—

	British Territory.		Foreign Territory.	
Bengal Circle ...	Midnapore ... 2 Dinagepore ... 1	Besides one attack in Chumparun.		
Madras Circle ...	Nellore ... 1 Bellary ... 1	... ...	Hyderabad ... 5 Mysore ... 1	
Bombay Circle ...	... ...		Guzerat ... 1 Kattiawar ... 1	Besides two attacks. Besides one attack.
N. W. P. Circle ...	Etawah ... 1 Meerut ... 1 Ajmere ... 1 Mozuffernuggur ... 1	Besides two attacks in the Agra District.	Jeypore ... 4 Bhurtpore ... 1 Dholepore ... 1 Gwalior ... 3 Tonk ... 1 Indore ... 1 Rampore ... Maywar ... Dewas ... Marwar ...	Besides three attacks. Besides one attack. Besides one attack. Besides two attacks. Besides one attack. One attack in each.
Punjab Circle ...	Kurnal ... 1	... ...	Puttiala ... 1	
Central Provinces Circle ...	Seonee ... 1			
	Total ... 11	Besides three attacks.	Total ... 20,	Besides fifteen attacks.
	Grand Total ... 31 Besides eighteen attacks.			

35. The persons employed permanently in the Post Office Department number 24,819, as per margin, being an increase of 1,562 as compared with the preceding year. Half of this increase is under the head of peons consequent on the increase of correspondence and the establishment of new Post Offices. The distribution of the establishments in each Circle is given in Appendix X.

	1868-69.	1869-70.
Inspecting Post Masters ...	99	101
Post Masters and Deputy Post Masters	1,903	2,172
Clerks	1,684	1,761
Peons, &c.	4,512	5,248
Road Establishment ...	15,059	15,537
TOTAL ...	23,257	24,819

SECTION VI.—NON-POSTAL BRANCHES OF THE DEPARTMENT.

36. In the Bullock Train Branch of this Department considerable alterations took place during the year under report consequent mainly on extensions of railway. The number of Bullock Train Offices are now 63; and the lines of communication consist of a main line from Calcutta to Peshawur, with branches to Darjeeling, Jubbulpore, Lucknow, Fyzabad, Futtehgurh, Indore, Landour, Simla, Ferozepore, Mooltan, Sealkote, and Murree.

37. The military transport train organised for the first time during the winter season of the preceding year between Jubbulpore and Nagpore, for the purpose of conveying the annual military reliefs, was again organised during the winter of the year under report. This train will not be again required owing to the subsequent completion of railway communication between Bengal and Bombay. The cost of this train has, as in the preceding year, been charged to the Post Office Department, because, although required solely for military purposes, it was organised and worked by this Department.

38. In the Punjab Military Van Dâk considerable alterations were made, owing partly to railway extension and the consequent diversion of the establishment to other lines. The lines now served by the Punjab Military Van Dâk consist of a main line from Lahore to Peshawur with branches to Sealkote and Murree (during summer), of another line from Lahore to Ferozepore, and of another from Umritsur to Pathankote.

39. Passenger services were also maintained on other lines in connection with mail cart establishments.

40. In the Government Resolution of the 31st October 1868, No. 3021, reviewing my annual report for the year 1867-68, it was stated that the contracts entered into by Government with the British India Steam Navigation Company, although based to a large extent on grounds independent of postal considerations, should, as a matter of convenience, be brought under the supervision and control of the Post Office Department, and this was accordingly done from the commencement of the year under review. These lines of steam communication have already formed the subject of remark in a preceding paragraph (8).

41. The financial results of these non-postal branches will be exhibited in the following section side by side with the financial results of the purely Postal Department.

SECTION VII.—FINANCIAL RESULTS.

42. The financial results of the year under report are to my mind extremely satisfactory. To compare these results with those of preceding years, it is necessary to bear in mind that the discount on the sale of stamps (Rs. 1,38,429) has for the first time been deducted from the receipts shown in the accounts, thus showing an apparent decrease of revenue to that extent. The revenue (embracing that derived both from official and private correspondence) has decreased by only Rs. 44,710 (and would have increased by nearly a lakh, but for the above-mentioned deduction). If official postage be excluded, the revenue has fallen by Rs. 1,77,320 (and would have fallen to the extent of only Rs. 38,891 but for the above-mentioned deduction); but when it is remembered that the effect of doubling the limit of weight was originally estimated at a loss of six lakhs, the satisfactory character of this result will be obvious. Although of course the Department has lost its usual annual increment* of revenue, the Government will doubtless consider this loss as one fully compensated by the great boon resulting from the doubling of the limits of weight allowed for letters at the several rates of postage. I am confident that this boon has been fully appreciated by the public in this country, and I feel sure also that it will eventually promote even the financial interests of the Department itself.

43. The expenditure in the purely Postal Department during the year under report has increased by somewhat over two lakhs. I had anticipated a much larger increase, for, as stated in paragraph 63 of my previous report, the effect of various changes involving increased expenditure had only partially affected the returns of the year 1868-69, leaving a considerable portion of their effect to fall upon the year now under report. Besides this the expenses resulting from the severe famine of 1869 were necessarily heavy, increased pay having in many cases to be given to the runners as well as to the horse-owners on some of the principal mail cart lines. Further, the charge for haulage of railway sorting carriages, ordered by Government to be paid for the first time in the middle of the previous year, has of course been greater during the year under report, the amount being about one lakh for 1869-70 as compared with half a lakh for the previous year. This addition of half a lakh to the expenditure is of course more nominal than real, the interest payments to the guaranteed railways being correspondingly reduced. Yet, notwithstanding these circumstances, the increase of expenditure has been very moderate. It would have been much larger but for the strenuous efforts made during the year to curtail expenditure in every possible way. These efforts had a very appreciable effect upon the expenses of the year now under report, but many of the measures resulting from them had effect only from the latter part of the year, and I am happy to be able to assure the Government that the results of the current year will be even more satisfactory than those of the past year.

44. Indeed, I may confidently express the hope that the current year will form an exception to the long list of years in which the expenditure of this Department has increased, and will show, instead of an increase, a very considerable decrease. Financially, therefore, I regard the present prospects of the Post Office as better than they have ever been before, for while I confidently look to an increase of revenue, I look also with equal confidence to a decrease of expenditure.

45. If towards the end of this year I find that actual results confirm the anticipations above expressed, I purpose again bringing under the consideration of Government the question of a half-anna rate for newspapers and book packets, feeling sure that, under the expected favorable circumstances, the Government will feel disposed to introduce a measure which will certainly tend to increase the circulation of newspapers, both English and Vernacular, as well as of trade circulars, books, and other printed matter; and which,

* The following extract from my last report for 1868-69 gives a recapitulation of annual increments:—

"For the nine years from 1858-59 to 1867-68, the yearly increase in the revenue from private correspondence varied considerably, the average increase being 1¼ lakhs, and the largest increase (in 1862-63) Rs. 2,15,886. This year (1868-69) the increase is Rs. 3,31,097."

though it may give rise to some loss on first introduction, will probably after no long time bear fruit in the shape of considerably increased circulation and consequently increased revenue.

46. I now proceed to give the usual financial statistics both as respects the Post Office proper and the several non-postal branches of its administration. These are exhibited in detail in Appendices XI and XII, the general results being shown in the following abstract :—

	1868-69.	1869-70.
PURELY POSTAL SERVICE.	Rs. A. P.	Rs. A. P.
Receipts, including official postage and sale of service postage stamps	68,60,720 12 3	68,16,010 9 4
Receipts, excluding official postage and sale of service postage stamps	41,05,704 4 3	39,28,383 5 10
Disbursements	53,70,201 15 8	55,96,779 11 4
Net revenue, including official postage and sale of service postage stamps	14,90,518 12 7	12,19,230 14 0
Net deficit, if official postage and service postage stamps be excluded...	12,64,497 11 5	16,68,396 5 6
NON-POSTAL BRANCHES.		
Bullock Train.		
Receipts	10,13,570 7 3	10,48,249 8 1
Disbursements	8,88,939 12 2	10,16,618 13 11
	Excess of receipts. 1,24,630 11 1	Excess of receipts. 31,630 10 2
Punjab Military Van Dâk.		
Receipts	1,66,426 9 7	2,56,505 10 3
Disbursements	1,68,533 4 3	2,52,847 13 11
	Excess of disbursements. 2,106 10 8	Excess of receipts. 3,657 12 4
Passenger Services on Mail Cart Lines.		
Receipts	1,34,105 12 5	1,57,196 12 6
Disbursements	1,34,105 12 5	1,57,196 12 6
Military Transport Train.		
Disbursements	1,84,611 10 9	1,57,550 0 6
Contract Subsidies to Local Steamers engaged primarily for Non-Postal Services.		
Disbursements	*Nil.*	5,05,574 7 8

Briefly stated, these results show—

		Rs.	
(1).	A net revenue in the purely Postal Department of ...	12,19,230	if official postage be included.
(2).	A net deficit ditto ditto of ...	16,68,396	if official postage be excluded.
(3).	A net revenue in the Bullock Train of	31,630	
(4).	A net revenue in the Punjab Military Van Dâk ...	3,657	

47. As already stated, the receipts for the year now under report and the deduced amounts of net revenue have for the first time been reduced by deduction of the amount of discount on the sale proceeds of postage stamps, amounting to Rs. 1,38,429.

48. The comparatively small net revenue derived from the Bullock Train Department is due partly to the famine rates which had to be paid for the bullocks, and partly to the fact that during the year under report certain payments were made from this head in aid of the district dâks the management of which was transferred to this Department.

49. The increased famine rates for horses are also the cause of the small net revenue in the Punjab Military Van Dâk. Had it not been for these rates, there would have been a very handsome profit in this branch of the Department.

50. The "Passenger Service on Mail Cart lines" shows neither loss nor gain, the fact being, as explained in previous reports, that it is impossible to divide the expenses into those incurred for passengers and those incurred for the mails; and that the passenger receipts are consequently treated as a set-off against the cost of the mail service, only the net cost being debited to the Postal Department, and the remainder with the corresponding receipts being shown under the head of Non-Postal Branches.

51. As explained in my previous report, the Military Transport Train shows no receipts, being merely a troop carrying agency managed and paid for by the Post Office, but placed at the disposal of the military authorities. As already stated, the Military Transport Train was finally abolished on the recent completion of railway communication between Bengal and Bombay.

52. The contract subsidies to local steamers paid during the year amounted to only about five lakhs, being about two lakhs less than the amount due under the several contracts for a whole year. This is owing to the adjustment of payments being somewhat in arrear, the Department having undertaken their payment for the first time during the year under report.

53. As in previous reports, I give on the margin certain items not included in the regular accounts. This statement shows a much less total than in previous years, owing to the incorporation in the regular accounts of the greater portion of the charges previously shown under this head, *e. g.*, discount on sale of stamps, which has this year for the first time been deducted from the revenue, and subsidies for local steam services, which have this year been actually paid by the Post Office Department (instead of by local Governments), and have consequently appeared in the regular accounts previously given. The estimate given in respect of English stores is the same as for the previous year, the Government having made no estimate on that account for the year under report, and this Department having been unable to obtain information as to the exact amount spent in England.

Railway free service (estimate)	...	1,50,000
English stores (estimate)	...	31,310
TOTAL	...	1,81,310

SECTION VIII.—GENERAL REVIEW OF PROGRESS SINCE 1854.

54. As usual, I annex a Return (Appendix XIII) showing the number of letters and newspapers received for delivery in each year since the introduction of the Post Office Act of 1854. An abstract comparison of the results is given on the margin, which shows the enormous extension of the operations of the Department during the last sixteen years.

Number of letters and newspapers received for delivery in the year under review as compared with the numbers received in the year prior to the introduction of the Post Office Act of 1854.

A year before the Act XVII of 1854 came into operation	...	19,082,676 = 100
1868-69	...	74,664,817 = 391
1869-70	...	83,032,957 = 435

55. Appendix XIV shows the progress of purely postal revenue from 1853-54 up to date. The abstract on the margin relates to the revenue from private correspondence, that of 1855-56 (the first complete year after the reduction of postage rates in 1854) being represented by 100, and the revenue of the last six years in like proportion. As previously explained, the reduction of revenue from private correspondence in the year under report is due to a very small extent only to actual decrease (caused bythe alteration of the scale of letter postage), the main difference being due to a change in account under which, in accordance

YEAR.	Percentage.
1853-54, last complete year of former rates	128
1855-56, first complete year	100
1864-65, tenth ditto	214
1865-66, eleventh ditto	223
1866-67, twelfth ditto	230
1866-67, (ditto exclusive of Straits Settlement)	227
1867-68, thirteenth ditto	237
1868-69, fourteenth ditto	258
1869-70, fifteenth ditto	246

with recent Government orders, the discount on the sale of stamps has been treated as a deduction from revenue.

SECTION IX.—NOTICES OF POST OFFICE OFFICIALS.

56. As directed in the Government Resolution of the 17th February last, I proceed to name a few Officers in the Department who have merited special mention. And in doing this I ought to explain that it is not my purpose to attempt to bring forward all those who have distinguished themselves by industry and efficiency. To do so in a large Department like this would be almost impossible; and I confine my notice therefore to the cases of those who, having been charged with special duties of importance, have discharged them in a particularly satisfactory manner. In the Bengal Circle, the Officers whom I would mention are Mr. John Dillon, Baboo Deno Bundhoo Mitter, and Baboo Soorjee Narayen Banerjee, all Inspecting Post Masters. The uniform industry and energy displayed by Mr. Dillon in the management of what is called the railway division led to his selection towards the close of the year under report for the difficult duty of organising at Allahabad a new system of railway frontier sorting rendered necessary by the large extensions of continuous railway transit; and, although the working of this system, as yet even in its infancy, will fall more appropriately for comment in the report of the current year, I am glad to be able to bear testimony to Mr. Dillon's exertions in the difficult task connected with its first organisation in the year under report. Baboo Deno Bundhoo Mitter has been mentioned with primary reference to the help which he afforded in the organisation of arrangements for controlling the district posts in the various districts of Bengal where the management of those dâks was made over to the Imperial Post Office. The success of these arrangements has already formed the subject of remark in a preceding section (district post), and I have pleasure in stating here that this success was in no small degree due to the interest and energy displayed by Baboo Deno Bundhoo Mitter. I have also mentioned Baboo Soorjee Narayen Banerjee, because during the year under report, as also in previous years, he displayed unusual energy and fertility of resource in improving the transit of mails in the very difficult Province of Assam. He has since been of great use on the mail cart and bullock train line on the Darjeeling Road, the efficiency of which had been seriously impaired by the maladministration of his predecessor whose connection with the Department has now ceased.

57. In the Madras Circle I would mention Messrs. Kellie and Bonafacio, who were charged with the duty of organising an entirely new route for the mails between Madras and Bombay through a most difficult portion of the country; both of these Officers suffered severely in health from long-continued exposure to which this duty subjected them, and deserve special notice for the success which attended their efforts.

58. In the Bombay Circle one of the principal features of the year was the successful working of the sea-sorting system which had been organised experimentally in the previous year. I think it right, therefore, to mention Mr. Stuart, Post Master of Bombay, whose untiring attention in the control of the sea-sorting establishment was most commendable, as well as Messrs. Barwise and Hutton who have proved themselves to be the best mail officers of the establishment.

59. In the Punjab Circle I would bring to notice the services of Mr. Faichnie, who, during a most trying year of famine, had special difficulties to contend with in the maintenance not merely of extensive lines of mail cart and bullock train, but also of the Punjab military van dâk, the lines of which underwent changes and extension in an unusual degree and at an unusually difficult time.

60. I may conclude this report by expressing my appreciation of the hearty and efficient co-operation received by me from all the Officers in charge of postal circles, including not merely the Post Masters General of Bombay (Major Battye), of Madras (Colonel Pears), of Bengal (Mr. Hogg), of the Punjab (Captain Lane), and of the North-Western Provinces (Mr. Hutchinson), but also the Chief Inspectors of British Burmah (Major Fanshawe), of Sind and the Persian Gulf (Mr. Beauvais), and of the Central Provinces (Mr. Douglas). Mr. Douglas, who acted as Chief Inspector of the Central Provinces during the year under report, was, towards the close of it, appointed to officiate as Compiler of Post Office Accounts, in which capacity also he has rendered eminently good service.

APPENDIX No. I.

Statement showing the number of Post Offices and Letter Boxes, which were opened during the years 1868-69 *and* 1869-70.

Names of Postal Circles.	Post Offices		Letter Boxes		Total	
	Opened in 1868-69.	Opened in 1869-70.	Opened in 1868-69.	Opened in 1869-70.	Opened in 1868-69.	Opened in 1869-70.
	Number.	Number.	Number.	Number.	Number.	Number.
Bengal	106	93	47	108	153	201
Madras	39	19	7	10	46	29
Bombay	113	22	80	153	193	175
North-Western Provinces	54	30	14	9	68	39
Punjab	62	70	13	172	75	242
British Burmah	1	1	.....	.....	1	1
Central Provinces	9	15	6	58	15	73
Sind	.....	12	.....	5	.....	17
Total ...	384	262	167	515	551	777

APPENDIX No. II.

Statement showing the distance over which Mails were conveyed throughout India by Railway, Mail Cart, Horses, Runners and Boats, during the years 1868-69 *and* 1869-70.

Names of Postal Circles.	Railway.		Mail Cart, Horse or Camel Dak, &c.		Runners or Boat Lines.		Sea.		Total.	
	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.
Bengal	787	787	308	440	7,909	8,203	2,837	2,837	11,841	12,267
Madras	862¾	892½	492⅝	371	6,549	6,655	...	...	7,904⅝	7,918⅝
Bombay	1,161	1,231	1,000	987	7,085	6,723	2,445	567	11,691	9,508
North-Western Provinces	578	548	1,494	1,452	6,286	6,400	...	...	8,358	8,400
Punjab	529	553	2,002	1,023	3,629	2,978	7	...	6,167	4,554
British Burmah	...	...	...	...	1,038	1,338	324	324	1,362	1,662
Central Provinces	317	317	164	164	2,477	2,477	...	...	2,958	2,958
Sind	...	105	...	896	...	724	...	1,885	...	3,610
Total ...	4,234¼	4,433¾	5,460⅛	5,333	34,973	35,498	5,613	5,613	50,281⅜	50,877¾

APPENDIX

COMPARATIVE STATEMENT showing the number of Letters, Newspapers, Parcels and Books received for delivery in the Post Offices under the Post Masters

NAMES OF POSTAL CIRCLES.		LETTERS.															
		Delivered at the window or sent out for delivery by Peons.				Retained at Office as Unclaimed or for Redirection, or for *District Post*.				Total number received.				Grand Total.	Delivered at the Window or sent out for delivery by Peons.		
		Paid.	Unpaid.	Service.	Registered.	Paid.	Unpaid.	Service.	Registered.	Paid.	Unpaid.	Service.	Registered.		Paid.	Unpaid.	Service.
Bengal ...	1868-69	7,166,418	4,012,178	111,873	421,219	675,221	1,565,381	15,023	53,890	7,841,639	5,577,559	126,896	475,109	14,021,203	1,007,480	78,414	2,667
	1869-70	8,181,023	4,484,239	211,426	463,381	792,495	1,874,293	27,844	69,407	8,973,518	6,358,532	239,270	532,788	16,104,108	1,112,710	87,068	6,984
Madras ...	1868-69	6,617,817	1,451,260	257,679	198,505	1,338,716	754,578	74,127	42,117	7,956,533	2,205,838	331,806	240,622	10,734,799	789,977	50,591	22,31[illegible]
	1869-70	7,384,355	1,424,249	221,933	204,547	1,534,977	792,233	62,372	44,265	8,919,332	2,216,482	284,305	248,812	11,668,931	838,088	43,958	17,118
Bombay ...	1868-69	6,862,439	3,918,386	2,216,915	222,358	688,709	1,439,768	454,862	31,505	7,551,148	5,358,154	2,671,777	253,863	15,834,942	1,042,675	54,916	20,687
	1869-70	7,590,822	4,012,061	2,625,301	235,331	892,946	1,856,923	538,356	39,496	8,483,768	5,868,984	3,183,657	274,829	17,811,238	1,010,606	52,888	28,734
N.-W. P. ...	1868-69	7,577,574	5,003,097	360,476	195,340	725,855	1,986,952	74,879	30,600	8,303,429	6,990,049	435,355	225,940	15,954,773	842,382	52,429	9,931
	1869-70	8,319,183	5,164,161	360,171	218,674	853,545	2,133,974	49,060	37,859	9,172,728	7,298,135	409,231	256,533	17,136,627	928,622	50,367	11,736
Punjab ...	1868-69	5,123,362	2,261,402	258,113	101,027	776,803	1,275,770	52,766	18,896	5,900,165	3,537,172	310,881	119,423	9,987,641	571,866	52,788	2,184
	1869-70	4,979,166	2,322,098	.....	87,819	915,846	1,131,150	...	15,192	5,895,012	3,453,248	...	103,011	9,451,271	567,240	111,144	...
[illegible] Burmah ...	1868-69	279,018	180,135	728	9,582	4,078	6,398	71	152	279,091	188,431	799	9,674	477,995	128,356	15,614	143
	1869-70	301,884	208,066	961	11,000	4,580	7,367	...	104	306,464	210,433	961	11,104	528,962	145,752	11,948	428
C. Provinces	1868-69	865,412	421,183	122,132	27,426	206,738	314,280	15,068	4,645	1,072,150	735,463	140,195	32,071	1,979,879	126,319	8,550	2,750
	1869-70	1,181,347	485,146	.....	28,313	208,133	318,944	...	3,507	1,389,480	804,090	...	31,820	2,225,390	155,092	7,295	...
Sind ...	1868-69	.....	.....	.....	.....	.....	...	...	...	.....	.....	...	...	.....	...	...	.....
	1869-70	1,373,649	276,603	.....	24,008	154,243	107,977	...	4,911	1,527,892	384,580	...	28,919	1,941,391	121,501	9,164	....
Grand Total	1868-69	34,488,040	17,267,641	3,327,916	1,175,397	4,416,115	7,345,025	680,709	181,305	38,904,155	24,612,666	4,017,709	1,356,703	68,891,233	4,508,057	303,302	62,080
	1869-70	39,311,429	18,371,628	3,419,792	1,273,078	5,356,765	8,222,861	697,662	214,743	44,668,194	26,594,484	4,117,424	1,487,816	76,867,918	4,879,553	323,242	64,845

No. III.

General of Bengal, Madras, Bombay, North-Western Provinces and Punjab and Chief Inspectors of Post Offices, British Burmah, Central Provinces and Sind.

NEWSPAPERS.							PARCELS.							BOOKS AND PATTERNS.		
Retained at Office as unclaimed or for Redirection, or for District Post.			Total Number received.			Grand Total.	Delivered at the Window or sent out for delivery by Peons.			Retained at Office as unclaimed or for Redirection, or for District Post.			Total Number received.			Grand Total.	Number of Steamer Books delivered.	Number of Indian Book Post Packets delivered.	Total.
Paid.	Unpaid.	Service.	Paid.	Unpaid.	Service.		Paid.	Unpaid.	Service.	Paid.	Unpaid.	Service.	Paid.	Unpaid.	Service.				
120,688	9,933	707	1,128,168	83,347	3,704	1,215,219	58,167	28,766	47,318	6,791	3,947	1,895	64,958	32,713	49,213	146,884	30,412	97,777	128,189
117,307	7,605	880	1,230,017	44,693	9,814	1,284,524	64,731	28,737	52,584	7,789	3,942	2,844	72,520	32,679	55,428	160,627	15,820	135,161	150,981
275,319	17,079	27,495	1,065,296	67,670	49,892	1,182,858	26,871	29,359	36,626	9,034	5,034	8,313	35,905	34,393	44,939	115,237	26,252	108,309	134,561
283,727	15,568	22,900	1,121,759	59,526	40,013	1,221,298	28,363	29,766	46,328	9,247	4,582	9,116	37,610	34,348	55,444	127,402	30,195	122,921	153,116
143,716	21,201	5,553	1,186,391	76,117	26,240	1,288,748	31,314	20,591	52,287	3,717	2,693	7,414	35,031	23,284	59,701	118,016	28,530	50,816	79,346
122,957	14,888	6,369	1,133,565	67,776	33,103	1,234,444	37,208	23,309	57,759	6,063	3,581	8,297	43,271	26,890	66,056	136,217	37,251	67,864	105,115
110,897	14,364	1,785	953,279	66,793	11,716	1,031,788	39,122	31,172	67,402	5,622	4,022	3,424	44,744	35,194	70,826	150,764	41,610	89,462	131,072
129,952	17,014	2,195	1,058,574	67,381	13,921	1,139,876	39,317	31,418	74,283	7,210	4,103	4,220	46,527	35,521	78,502	160,550	43,168	115,567	158,735
97,110	18,206	788	668,978	70,994	3,972	743,944	51,553	25,997	32,05[illegible]	10,084	4,679	4,053	61,637	30,676	36,109	128,422	35,273	77,339	112,612
87,061	20,718	...	654,301	131,862	...	786,163	72,654	24,531	...	14,464	4,722	...	87,118	29,253	...	116,371	36,197	77,236	113,433
2,972	1,707	9	131,828	17,321	152	148,801	2,713	2,810	8,12[illegible]	338	100	28	3,051	2,910	3,149	9,110	8,010	9,540	17,550
2,546	1,700	...	148,298	12,948	438	161,684	2,366	2,651	2,955	370	136	24	2,736	2,787	2,979	8,502	10,373	8,311	18,684
22,211	3,070	347	147,530	11,620	3,077	162,227	9,882	5,757	12,910	923	553	748	10,805	6,310	13,658	30,773	10,225	10,039	20,264
20,166	2,501	...	175,254	9,887	...	185,141	20,502	5,987	...	1,478	505	...	21,975	6,492	...	28,467	9,138	13,879	23,007
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18,868	2,376	...	140,369	11,540	...	151,909	20,588	2,712	...	2,852	623	..	23,440	3,335	...	26,775	5,898	7,741	13,639
772,913	85,560	36,684	5,280,970	393,862	98,753	5,773,585	219,622	144,452	251,720	36,509	21,028	25,875	256,131	165,480	277,595	699,206	180,312	443,282	623,594
782,584	82,370	32,344	5,662,137	405,613	97,289	6,165,039	285,729	149,111	238,908	49,468	22,194	24,501	335,197	171,305	258,409	764,911	188,030	548,680	736,710

APPENDIX No. IV.

Statement showing the number of unclaimed and refused letters received at, and disposed of by, the Dead Letter Offices at Calcutta, Madras, Bombay, Agra, and Lahore during the years 1868-69 *and* 1869-70.

CLASS OF LETTERS.	CALCUTTA.				MADRAS.				BOMBAY.				AGRA.				LAHORE.			
	Number of chargeable letters unclaimed or refused in		Proportion.		Number of chargeable letters unclaimed or refused in		Proportion.		Number of chargeable letters unclaimed or refused in		Proportion.		Number of chargeable letters unclaimed or refused in		Proportion.		Number of chargeable letters unclaimed or refused in		Proportion.	
	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.
The number of unclaimed paid letters returned to senders	40,916	44,106	59·55	57·73	12,287	14,291	39·27	37·87	32,148	40,198	59·93	73·83	11,330	28,261	69·37	66·92	20,499	23,578	88·49	89·77
Ditto that cannot be disposed of ...	27,788	32,285	40·44	42·26	18,998	23,440	60·72	62·12	21,492	1 ,241	40·06	26·16	5,002	13,965	30·62	33·07	2,659	2,684	11·50	10·22
TOTAL ...	68,704	76,391	99·99	99·99	31,285	37,731	99·99	99·99	53,640	54,442	99·99	99·99	16,332	42,226	99·99	99·99	23,158	26,262	99·99	99·99
The number of unclaimed bearing letters returned to senders	121,676	149,137	35·46	41·84	25,018	38,457	26·91	30·24	171,756	155,692	58·57	58·95	70,375	72,417	25·96	23·10	82,334	80,867	56·19	60·88
Ditto that cannot be disposed of ...	221,388	207,501	64·53	58·15	67,948	65,606	73·08	69·75	121,488	108,408	41·42	41·04	200,641	240,969	74·03	76·89	64,185	51,972	43·80	39·11
TOTAL ...	343,064	356,638	99·99	99·99	92,966	104,063	99·99	99·99	293,244	264,100	99·99	99·99	271,016	313,386	99·99	99·99	146,519	132,839	99·99	99·99
The number of refused paid letters returned to senders	965	787	70·90	72·06	167	127	12·62	9·34	2,688	4,313	85·17	91·55	1,140	1,026	74·21	75·77	373	253	85·15	75·29
Ditto that cannot be disposed of ...	396	305	29·09	27·93	1,156	1,231	87·37	90·65	468	398	14·82	8·44	396	328	25·78	24·22	65	83	14·84	24·70
TOTAL ...	1,361	1,092	99·99	99·99	1,323	1,358	99·99	99·99	3,156	4,711	99·99	99·99	1,536	1,354	99·99	99·99	438	336	99·99	99·99
The number of refused bearing letters returned to senders	65,956	82,179	34·09	39·54	14,296	19,218	21·49	28·56	94,392	93,549	55·61	55·11	64,513	72,061	30·84	31·21	48,104	50,888	61·23	60·07
Ditto that cannot be disposed of ...	127,504	125,643	65·90	60·45	52,222	48,041	78·50	71·43	75,336	76,174	44·38	44·88	144,619	158,813	69·15	68·78	30,450	33,830	38·76	39·92
TOTAL ...	193,460	207,822	99·99	99·99	66,518	67,259	99·99	99·99	169,728	169,723	99·99	99·99	209,132	230,874	99·99	99·99	78,554	84,718	99·99	99·99

ABSTRACT.

	1868-69.	1869-70.
The total number of all classes of letters returned to senders	880,933	971,405
Ditto that cannot be disposed of	1,184,201	1,205,920
GRAND TOTAL ...	2,065,134	2,177,325

APPENDIX No. V.

Statement showing the number of Ordinary Postage Labels of each denomination sold in each of the Presidencies and Provinces, with gross value and discount thereof, during the years 1868-69 *and* 1869-70.

Names of Presidencies and Provinces.	½ Pie Labels.	¾ Anna Envelopes.	½ Anna Note Paper.	1 Anna Envelopes.	½ Anna Labels.	1 Anna Labels.	2 Anna Labels.	4 Anna Labels.	6 Anna Labels.	6 Anna and 8 Pie Labels.	8 Anna Labels.	Gross Value.	Discount.
	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Rs. A. P.	Rs. A. P.
Bengal	294,911	16,926	95,038	9,882	5,690,202	2,067,433	618,246	623,340	51	48,710	366,438	7,60,226 4 5	31,867 3 0½
Madras	181,594	14,464	200,754	3,459	7,046,786	1,062,994	297,223	370,588	...	17,259	104,248	4,90,388 5 8	26,295 10 2
Bombay	309,206	13,512	123,431	3,184	7,744,421	1,402,109	502,767	385,017	...	35,282	352,256	6,97,063 1 9	30,122 4 8
North-Western Provinces	155,018	62,379	126,847	7,761	5,044,877	1,245,728	198,114	332,687	5	20,770	99,583	4,15,246 15 1	23,389 7 7
Punjab	108,677	17,443	153,300	6,391	3,146,351	500,744	121,018	209,175	...	17,621	78,159	2,53,869 3 9	14,472 5 2
British Burmah	54,154	624	1,666	1,200	236,653	180,184	94,288	60,004	32	16,573	51,997	80,768 0 10	4,647 4 11
Central Provinces	29,142	5,380	32,059	1,529	695,825	146,515	45,739	64,282	...	2,783	15,236	63,990 0 1	3,487 5 10½
Sind	29,562	2,192	23,616	1,408	991,040	119,438	44,882	38,410	...	3,394	20,458	67,434 10 8	4,117 8 9
Total of 1869-70 ...	1,162,264	132,920	756,711	†34,814	30,596,155	6,725,445	1,922,277	2,083,503	88	162,392	1,088,375	28,28,986 10 3	1,38,429 2 2
Total of 1868-69 ...	1,128,362	170,412	*1,356,082	76,602	27,137,889	8,068,222	2,302,171	2,174,464	845	204,949	973,680	28,59,801 13 10	1,38,628 11 4

* 307,594 Half Anna Note Paper sold at the rate of 10 annas per packet of 16.
† 7,508 One Anna Envelopes sold at 1 Rupee 1 Anna per packet.

APPENDIX No. VI.

Statement exhibiting the number of Service Postage Labels of each denomination sold in each Presidency and Province, and the gross value thereof, during the years 1868-69 *and* 1869-70.

NAMES OF PRESIDENCIES AND PROVINCES.	½ Anna Labels.	1 Anna Labels.	2 Anna Labels.	4 Anna Labels.	8 Anna Labels.	Gross Value.
	Number.	Number.	Number.	Number.	Number.	Rs. A. P.
Bengal	126,194	211,272	78,976	22,686	4,734	35,058 9 0
Madras	143,729	98,707	32,404	11,671	2,914	19,085 15 6
Bombay	172,210	174,458	67,974	27,425	9,525	36,400 11 0
North-Western Provinces	272,104	274,753	93,935	40,645	9,375	52,265 15 0
Punjab	118,437	182,301	83,744	30,891	6,745	36,658 3 6
British Burmah	10,222	15,200	4,274	1,728	738	2,604 11 0
Central Provinces	42,895	53,917	23,196	10,089	1,504	10,884 0 6
Sind	35,248	24,073	8,844	3,086	680	4,823 1 0
Total of 1869-70 ...	921,039	1,034,681	393,347	148,221	36,215	1,97,781 2 6
Total of 1868-69 ...	579,792	1,207,301	676,025	265,906	82,181	2,85,644 15 0

APPENDIX No. VII.

Statement showing the correspondence sent to and received from the District Post by the General Post in each Postal Circle during the year 1869-70.

NAMES OF PRESIDENCIES AND PROVINCES.	Total Number sent to District Post.			Number received back from District Post.			Received for despatch from District Post.		
	Letters.	Newspapers.	Parcels.	Letters.	Newspapers.	Parcels.	Letters.	Newspapers.	Parcels.
Bengal	846,767	35,732	5,246	99,156	572	52	562,338	2,621	980
Madras	977,186	126,224	19,176	71,111	1,432	1,176	698,441	18,603	7,635
Bombay	990,202	30,310	3,404	80,468	671	85	322,751	1,960	466
North-Western Provinces	967,963	34,643	3,526	171,004	933	114	719,076	2,918	888
Punjab	381,563	9,193	2,107	59,692	974	286	177,099	3,754	605
Central Provinces	128,186	2,755	527	6,389	16	6	140,056	213	201
Sind	176,287	10,242	2,994	11,624	104	35	150,034	474	649
Total ...	4,468,154	249,099	36,980	499,444	4,702	1,754	2,769,795	30,543	11,424

APPENDIX No. VIII.

Statement showing the number of Complaints of various descriptions made by the public in the years 1868-69 *and* 1869-70.

Names of Postal Circles.	Ascertained to be well Founded.		Ascertained to be Groundless.		Enquiry unsuccessful.		Under Enquiry.		Total.	
	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.
Bengal	250	263	210	312	330	258	18	6	838	839
Madras	266	292	194	275	179	169	22	13	661	749
Bombay	*...	282	...	176	...	201	...	30	*...	689
North-Western Provinces	89	68	24	81	66	43	6	14	185	206
Punjab	48	86	48	43	18	15	1	0	115	144
British Burmah	18	21	13	17	9	12	2	1	42	51
Central Provinces	7	12	8	1	8	6	1	1	24	20
Sind	...	16	...	22	...	7	...	1	...	46
Total ...	678	1,040	527	927	610	711	50	66	1,865	2,744

* Information not available owing to the destruction by fire of the Bombay Post Office in March 1869.

APPENDIX No. IX.

Statement showing the Offences committed by Post Office Officials during the year 1869-70.

Names of Presidencies and Provinces.	Number of Ascertained cases of Dishonesty on the Part of Post Office Officials.		Total.
	Number of legal Convictions.	Number of cases Departmentally Punished.	
Bengal	6	25	31
Madras	2	5	7
Bombay	20	34	54
North-Western Provinces	20	0	20
Punjab	4	6	10
British Burmah	1	0	1
Central Provinces	5	6	11
Sind	1	1	2
Total ...	59	77	136

APPENDIX No. X.

Statement showing the Staff of Officers, Clerks, and others of the Post Office Department in India on the 31*st March* 1870.

Designation.	Bengal.		Madras.		Bombay.		N. W. Provinces.		Punjab.		British Burmah.		Central Provinces.		Sind.		Total.	
	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.	1868-69.	1869-70.
Director General of the Post Office of India ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...		...	1	1
Deputy Director General	1	1	...	...	...	...	...	...	...	...	...	...	...	...		...	1	1
Personal Assistant to the Director General and Compiler of Post Office Accounts ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...		...	1	1
Post Master General and Chief Inspectors exercising the powers of a Post Master General	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Formed into a separate circle since 1st April 1869.	1	7	8
Inspecting Post Masters, including Supernumerary and Sub-Inspectors	15*	15*	15	15	14	14	33	35	20†	17	...	...	2	2		3	99	101
Post Masters and Deputy Post Masters ...	458	557	284	312	411	449	389	448	282	264	7	8	72	88		46	1,903	2,172
Clerks (English and Vernacular)	456	496	277	280	307	345	296	295	276	239	23	26	49	49		31	1,684	1,761
Post Men and other Servants	1,037	1,401	717	768	944	1,047	1,105	1,216	511	448	36	40	162	208		120	4,512	5,248
Road Establishment consisting of Superintendents, Overseers, Mootsuddies, Runners, Bearers, Coachmen, Syces, Boatmen, and others	3,312	3,256	3,288	3,758	2,445	2,304	2,471	2,653	2,260	1,906	152	144	1,131	1,120		396	15,059	15,537
Total ...	5,282	5,729	4,582	5,134	4,122	4,160	4,295	4,648	3,350	2,875	219	219	1,417	1,468		597	23,267	24,830

* Including one Inspector attached to the Compiler's Office.
† Including Chief Inspector of Sind.

APPENDIX No. XI.

Comparative Statement shewing the Receipts of the Post Office Department for the year 1868-69 *and* 1869-70.

Head of Receipts.	1868-69.	1869-70.	Increase.	Decrease.
Postal Service.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Postage on Letters.				
Bengal	3,06,888 7 4	3,10,673 11 0	3,785 3 8	...
Madras	1,42,297 9 10	1,31,723 15 8	...	10,573 10 2
Bombay	2,89,062 3 8	2,89,752 7 7	690 3 11	...
N. W. Provinces	3,92,475 4 3	3,85,903 8 8	...	6,571 11 7
Punjab	1,94,010 3 9	1,72,950 2 2	...	21,060 1 7
British Burmah	16,178 5 0	15,417 7 7	...	760 13 5
Central Provinces	34,861 14 3	38,371 15 3	3,510 1 0	...
Sind	...	20,503 8 2	20,503 8 2	...
Total	13,75,774 0 1	13,65,296 12 1	28,489 0 9	38,966 4 9
Postage on Banghy Parcels.				
Bengal	46,658 14 10	46,668 9 11	9 11 1	...
Madras	44,999 11 5	45,257 7 8	257 12 3	...
Bombay	36,597 14 2	40,382 12 0	3,784 13 10	...
N. W. Provinces	63,733 12 7	58,740 15 11	...	4,992 12 8
Punjab	41,166 3 1	36,321 10 0	...	4,844 9 1
British Burmah	3,966 7 8	5,421 12 8	1,455 5 0	...
Central Provinces	13,079 4 0	11,629 6 8	...	1,449 13 4
Sind	...	3,664 6 10	3,664 6 10	...
Total	2,50,202 3 9	2,48,087 1 8	9,172 1 0	11,287 3 1
Sale of Ordinary Postage Stamps.				
Bengal	7,53,530 6 7	7,60,226 4 5	6,695 13 10	...
Madras	4,93,402 15 11	4,90,388 5 8	...	3,014 10 3
Bombay	7,21,744 5 5	6,97,063 1 9	...	24,681 3 8
N. W. Provinces	4,16,061 15 3	4,15,246 15 1	...	815 0 2
Punjab	3,29,479 2 7	2,53,869 3 9	...	75,609 14 10
British Burmah	82,079 0 8	80,768 0 10	...	1,310 15 10
Central Provinces	63,503 15 5	63,990 0 1	486 0 8	...
Sind	...	67,434 10 8	67,434 10 8	...
Total	*28,59,801 13 10	28,28,986 10 3	74,616 9 2	1,05,431 12 9
Deduct discount on sale	...	1,38,429 2 2		
Net Amount	...	26,90,557 8 1		
Sale of Service Postage Stamps.				
Bengal	61,213 10 6	35,058 9 0	...	26,155 1 6
Madras	28,152 5 6	19,085 15 6	...	9,066 6 0
Bombay	48,465 15 6	36,400 11 0	...	12,065 4 6
N. W. Provinces	75,180 4 6	52,265 15 0	...	22,914 5 6
Punjab	56,331 3 0	36,658 3 6	...	19,672 15 6
British Burmah	3,123 14 0	2,604 11 0	...	519 3 0
Central Provinces	13,177 10 0	10,884 0 6	...	2,293 9 6
Sind	...	4,823 1 0	4,823 1 0	...
Total	2,85,644 15 0	1,97,781 2 6	4,823 1 0	92,686 13 6
Official Postage.				
Bengal	5,57,952 11 0	6,11,119 1 0	53,166 6 0	...
Madras	3,69,514 8 0	4,27,925 2 0	58,410 10 0	...
Bombay	5,69,975 8 0	7,11,895 3 0	1,41,919 11 0	...
N. W. Provinces	3,66,690 8 0	3,33,991 11 0	...	32,698 13 0
Punjab	4,70,413 7 0	4,69,153 5 0	...	1,260 2 0
British Burmah	22,404 2 0	26,189 4 0	3,785 2 0	...
Central Provinces	1,12,420 13 0	77,234 11 0	...	35,186 2 0
Sind	...	32,337 12 0	32,337 12 0	...
Total	24,69,371 9 0	26,89,846 1 0	2,89,619 9 0	69,145 1 0

* The discount in 1868-69 was Rs. 1,38,628-11-4. The actual deduction of discount from the receipts commences from 1869-70 under Government order of 17th February 1870.

APPENDIX No. XI,—*continued.*

Head of Receipts.	1868-69.	1869-70.	Increase.	Decrease.
Postal Service—*concluded.*				
Steam Postage due by the London Post Office.				
Bengal	7,272 3 0	6,740 1 0	...	532 2 0
Madras	2,708 2 6	2,328 0 6	...	380 2 0
Bombay	2,04,603 3 4	2,30,102 12 8	25,499 9 4	...
Total	2,14,583 8 10	2,39,170 14 2	25,499 9 4	912 4 0
Miscellaneous.				
Bengal	6,987 0 2	*e* 1,151 10 0 8,436 13 2	2,601 7 0	...
Madras	8,874 5 5	*e* 915 8 0 8,700 4 11	741 7 6	...
Bombay	* 144 0 0 *a* 17,108 4 1	*e* 796 8 0 *c* 21,464 14 4	5,009 2 3	...
N. W. Provinces	4,866 6 5	*e* 1,248 12 0 9,133 0 2	5,515 5 9	...
Punjab	3,194 9 9	*e* 947 14 0 8,619 12 6	6,373 0 9	...
British Burmah	*b* 776 13 5	*e* 198 8 0 *d* 2,499 1 11	1,920 12 6	...
Central Provinces	2,272 13 0	*e* 160 0 0 2,078 10 0	...	34 3 0
Sind	...	*e* 259 0 0 939 11 4	1,198 11 4	...
Total	44,224 4 3	67,550 0 4	23,359 15 1	34 3 0
Total of Postal Service.				
Bengal	17,40,503 5 5	17,80,074 11 6	39,571 6 1	...
Madras	10,89,949 10 7	11,26,324 11 11	36,375 1 4	...
Bombay	18,87,701 6 3	20,27,868 6 4	1,40,167 0 2	...
N. W. Provinces	13,19,008 3 0	12,56,580 13 10	...	62,477 5 2
Punjab	10,94,594 13 2	9,78,520 2 11	...	1,16,074 10 3
British Burmah	1,28,528 10 9	1,33,098 14 0	4,570 3 3	...
Central Provinces	2,39,316 5 8	2,04,348 11 6	...	34,967 10 2
Sind	...	1,29,962 2 0	1,29,962 2 0	...
Total	74,99,602 6 9	76,36,718 10 0	3,50,635 12 10	2,13,519 9 7
Deduct Discount on sale of Postage Stamps	...	1,38,429 2 2		
Net Amount	...	74,98,289 7 10		
Deduct amount due to the London Post Office.				
Bengal	2,07,112 8 10	2,19,219 2 2	12,106 9 4	...
Madras	37,838 1 8	40,862 12 0	3,024 10 4	...
Bombay	3,93,931 0 0	4,22,197 0 4	28,266 0 4	...
Total	6,38,881 10 6	6,82,278 14 6	43,397 4 0	...
Net Amount.				
Bengal	15,33,390 12 7	15,60,855 9 4	27,464 12 9	...
Madras	10,52,111 8 11	10,85,461 15 11	33,350 7 0	...
Bombay	14,93,770 6 2	16,05,661 6 0	1,11,929 10 2	...
N. W. Provinces	13,19,008 3 0	12,56,530 13 10	...	62,477 5 2
Punjab	10,94,594 13 2	9,78,520 2 11	...	1,16,074 10 3
British Burmah	1,28,528 10 9	1,33,098 14 0	4,531 8 11	...
Central Provinces	2,39,316 5 8	2,04,348 11 6	...	34,967 10 2
Sind	...	1,29,962 2 0	1,29,962 2 0	...
Grand Total	68,60,720 12 3	69,54,439 11 6	3,07,238 8 10	2,13,519 9 7
Deduct Discount on sale of Postage Stamps	...	1,38,429 2 2		
Net Amount	...	68,16,010 9 4		

* Contributions from Native States.

(*a.*) Including Rs. 6,403 2 0 on account of passage money in Dâk Boats.
(*b.*) Ditto 128 0 0 Ditto Ditto.
(*c.*) Ditto 5,578 4 0 Ditto Ditto.
(*d.*) Ditto 124 0 0 Ditto Ditto.
(*e.*) Sale proceeds of the Indian Postal Guide.

APPENDIX No. XI,—*continued.*

Head of Receipts.	1868-69.	1869-70.	Increase.	Decrease.
Non-Postal Branches.				
Bullock Train.				
Bengal	{a 12,711 0 0 2,77,598 2 6	m 31,154 2 0 2,09,168 8 11	...	49,986 7 7
N. W. Provinces	{a 5,594 0 0 2,66,181 9 1	m 14,017 5 8 2,88,783 9 3	31,025 5 10	...
Punjab	{a 15,337 0 0 4,36,148 11 8	m 36,110 0 6 4,44,907 8 9	29,531 13 7	...
British Burmah	...	400 0 0	400 0 0	...
Central Provinces	...	m 946 10 0 22,761 11 0	23,708 5 0	...
Total ...	10,13,570 7 3	10,48,249 8 1	84,665 8 5	49,986 7 7
Military Van Dâk.				
Punjab	1,66,426 9 7	2,56,505 10 3	90,079 0 8	...
Passenger Service.				
Bengal	24,561 3 6	29,893 11 6	5,332 8 0	...
Madras	1,569 2 0	911 9 6	...	657 8 6
Bombay	11,352 1 6	12,174 3 0	822 1 6	...
N. W. Provinces	23,341 10 2	20,418 10 6	...	2,922 15 8
Punjab	36,435 4 0	15,167 11 0	...	21,267 9 0
Central Provinces	36,846 7 3	78,630 15 0	41,784 7 9	...
Total ...	1,34,105 12 5	1,57,196 12 6	47,939 1 3	24,848 1 2
Total of Non-Postal Branches.				
Bengal	3,14,870 6 0	2,70,216 6 5	...	44,653 15 7
Madras	1,569 2 0	911 9 6	...	657 8 6
Bombay	11,352 1 6	12,174 3 0	822 1 6	...
N. W. Provinces	2,95,117 3 3	3,23,219 9 5	28,102 6 2	...
Punjab	6,54,347 9 3	7,52,690 14 6	98,343 5 3	...
British Burmah	...	400 0 0	400 0 0	...
Central Provinces	36,846 7 3	1,02,339 4 0	65,492 12 9	...
Grand Total ...	13,14,102 13 3	14,61,951 14 10	1,93,160 9 8	45,311 8 1

* † On account of Service Packages due from the Military Department at the close of March 1869. Receipts to the like extent deducted from the collections in 1869-70.
* Ditto Ditto Ditto at the close of March 1870.

APPENDIX No. XI,—*continued.*

Comparative Statement showing the Charges of the Post Office Department for the years 1868 69 *and* 1869-70.

Head of Charges.	1868-69.	1869-70	Increase.	Decrease.
Postal Service.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Salaries and Establishment.				
Director General of Post Office	53,012 4 9	68,962 15 6	15,950 10 9	...
Compiler of Post Office Accounts	54,977 10 5	56,215 14 2	1,238 3 9	...
Bengal	6,83,780 15 2	7,99,518 14 3	1,15,737 15 1	...
Madras	5,81,659 3 11	6,26,096 6 9	44,437 2 10	...
Bombay	6,91,662 11 10	7,58,595 10 2	66,932 14 4	...
N. W. Provinces	5,67,242 9 1	6,19,049 3 4	51,806 10 3	...
Punjab	3,25,880 0 2	3,26,108 3 5	228 3 3	...
British Burmah	74,984 6 6	77,245 6 8	2,261 0 2	...
Central Provinces	1,28,821 4 7	1,47,681 2 2	18,859 13 7	...
Sind	...	70,543 8 2	70,543 8 2	...
Total ...	31,62,021 2 5	35,50,017 4 7	3,87,996 2 2	...
Miscellaneous and Contingent Charges.				
Director General of Post Office	6,133 5 4	6,843 7 8	710 2 4	...
Compiler of Post Office Accounts	4,095 8 1	1,408 2 5	...	2,687 5 8
Bengal	*301 4 10 †1,74,415 3 3	*261 7 2 (c)2,19,195 11 9	44,740 10 10	...
Madras	*9 6 8 ‡95,151 14 0	*2 6 8 79,229 1 1	...	15,929 12 11
Bombay	*28 2 0 (a)3,03,110 15 8	(d)2,21,701 7 5	...	81,437 10 3
N. W. Provinces	*12 0 0 74,090 4 8	*117 11 0 62,832 10 4	...	11,151 15 4
Punjab	55,342 7 3	*2 14 5 54,262 2 11	...	1,077 5 11
British Burmah	5,745 8 8	7,443 4 7	1,697 11 11	...
Central Provinces	(b)67,915 9 6	(e)26,265 15 1	...	41,649 10 5
Sind	...	9,944 7 8	9,944 7 8	...
Total ...	7,86,351 9 11	6,89,510 14 2	57,093 0 9	1,53,933 12 6
Mail Cart (after deducting charges for Passenger Service).				
Bengal	45,719 1 5	47,927 12 8	2,208 11 3	...
Madras	1,58,618 6 11	1,62,773 0 5	4,154 9 6	...
Bombay	2,85,802 7 9	2,79,454 5 9	...	6,348 2 0
N. W. Provinces	4,31,491 10 4	2,90,320 10 2	...	1,41,171 0 2
Punjab	2,67,083 9 5	1,63,963 8 8	...	1,03,120 0 9
British Burmah	...	...	...	...
Central Provinces	2,01,256 4 0	2,74,394 9 9	73,138 5 9	...
Sind	...	1,06,538 10 5	1,06,538 10 5	...
Total ...	13,89,971 7 10	13,25,372 9 10	1,86,040 4 11	2,50,639 2 11
Bounty Money.				
Bengal	999 7 0	71 2 0	...	928 5 0
Madras	502 1 0	516 11 0	14 10 0	...
Bombay	474 9 0	1,337 4 0	862 11 0	...
British Burmah	1,437 11 0	1,328 1 0	...	109 10 0
Sind	...	31 5 0	31 5 0	...
Total ...	3,413 12 0	3,284 7 0	908 10 0	1,037 15 0
Construction and Repairs of Buildings.				
Bengal	16,925 0 2	13,896 12 8	...	3,028 3 6
Madras	2,781 15 3	5,948 1 11	3,166 2 8	...
Bombay	696 2 1	592 8 6	...	103 9 7
N. W. Provinces	5,147 11 6	6,389 11 6	1,242 0 0	...
Punjab	1,126 5 6	147 13 3	...	978 8 3
Central Provinces	1,766 13 0	1,302 12 3	...	464 0 9
Sind	...	316 11 8	316 11 8	...
Total ...	28,443 15 6	28,594 7 9	4,724 14 4	4,574 6 1

* On account of Law charges. † Including Rs. 116 on account of steamer hire from Kooshtea to Dacca.
‡ Rs. 3,770-4-10 on account of sums embezzled by the Cashier of the Madras Post Office written off under orders of Government in the Financial Department, No. 3553, dated 28th January 1868.
(a) Rs. 1,25,829-7-6 on account of special trains. (b) Rs. 37,461-14-0 on account of express trains.
(c) Including Rs. 1,00,464-12-0 on account of haulage for sorting carriages, and Rs. 3 being postage collections of the Goh Post Office stolen by robbers and written off to Profit and Loss under orders of Government No. 3137, dated 23rd October 1868.
(d) Including Rs. 7,157-10-6 on account of special trains. (e) Including Rs. 651-12-0 on account of special trains.

APPENDIX No. XI,—*concluded.*

Head of Charges.	1868-69.	1869-70.	Increase.	Decrease.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Total of Postal Service.				
Director General of Post Office	59,145 10 1	75,806 7 2	16,660 13 1	...
Compiler of Post Office Accounts	59,073 2 6	57,624 0 7	...	1,449 1 11
Bengal	9,22,140 15 10	10,80,871 12 6	1,58,730 12 8	...
Madras	8,38,722 15 9	8,74,565 11 10	35,842 12 1	...
Bombay	12,81,775 0 4	12,61,681 3 10	...	20,093 12 6
N. W. Provinces	10,77,984 3 7	9,78,709 14 4	...	99,274 5 3
Punjab	6,49,432 6 4	5,44,484 10 8	...	1,04,947 11 8
British Burmah	82,167 10 2	86,016 12 3	3,849 2 1	...
Central Provinces	3,99,759 15 1	4,49,644 7 3	49,884 8 2	...
Sind	...	1,87,374 10 11	1,87,374 10 11	...
Grand Total ...	53,70,201 15 8	55,96,779 11 4	4,52,342 11 0	2,25,764 15 4
Non-Postal Branches.				
Bullock Train.				
Bengal	3,66,819 8 6	3,93,642 13 7	26,823 5 1	...
N. W. Provinces	2,79,210 13 8	3,02,482 1 10	23,271 4 2	...
Punjab	2,42,909 6 0	3,11,161 5 0	68,251 15 0	...
Central Provinces	...	6,914 4 0	6,914 4 0	...
British Burmah	...	2,418 5 6	2,418 5 6	...
Total ..	8,88,939 12 2	10,16,618 13 11	1,27,679 1 9	...
Military Transport Train.				
Central Provinces	1,84,611 10 9	1,57,550 0 6	...	27,061 10 3
Military Van Dâk.				
Punjab	1,68,533 4 3	2,52,847 13 11	84,314 9 8	...
Passenger Service.				
Bengal	24,561 3 6	29,893 11 6	5,332 8 0	...
Madras	1,569 2 0	911 9 6	...	657 8 6
Bombay	11,352 1 6	12,174 3 0	822 1 6	...
N. W. Provinces	23,341 10 2	20,418 10 6	...	2,922 15 8
Punjab	36,435 4 0	15,167 11 0	...	21,267 9 0
Central Provinces	36,846 7 3	78,630 15 0	41,784 7 9	...
Total ...	1,34,105 12 5	1,57,196 12 6	47,939 1 3	24,848 1 2
Subsidy Payments to B. I. S. N. Company.				
Bengal	...	5,05,574 7 8	5,05,574 7 8	...
Total of Non-Postal Branches.				
Bengal	3,91,380 12 0	9,29,111 0 9	5,37,730 4 9	...
Madras	1,569 2 0	911 9 6	...	657 8 6
Bombay	11,352 1 6	12,174 3 0	822 1 6	...
N. W. Provinces	3,02,552 7 10	3,22,900 12 4	20,348 4 6	...
Punjab	4,47,877 14 3	5,79,176 13 11	1,31,298 15 8	...
Central Provinces	2,21,458 2 0	2,43,095 3 6	21,637 1 6	...
British Burmah	...	2,418 5 6	2,418 5 6	...
Grand Total ...	13,76,190 7 7	20,89,788 0 6	7,14,255 1 5	657 8 6

* Exclusive of Rs. 51,700, being an estimate of printing charges during 1869-70, as shown below:—

Director General of Post Office	Rs.	8,700
Compiler of Post Office Accounts	„	3,000
Bengal	„	40,000
Total ...	„	51,700

APPENDIX No. XII.

Comparative Abstract of Receipts and Charges during the years 1868-69 *and* 1869-70.

Head of Receipts.	1868-69.	1869-70.
	Rs. A. P.	Rs. A. P.
I.—Postal Service.		
Cash Receipts	16,25,976 3 10	16,13,383 13 9
Sale of Ordinary Postage Stamps	28,59,801 13 10	*26,90,557 8 1
Sale of Service Postage Stamps	2,85,644 15 0	1,97,781 2 6
Official Postage...	24,69,371 9 0	26,89,846 1 0
Due by the London Post Office	2,14,583 8 10	2,39,170 14 2
Miscellaneous, *i. e.*, Sale of Waste Paper, Fines, Savings, &c. ...	44,224 4 3	67,550 0 4
Total ...	74,99,602 6 9	74,98,289 7 10
Deduct amount due to the London Post Office ...	6,38,881 10 6	6,82,278 14 6
Net Amount ...	68,60,720 12 3	68,16,010 9 4
II.—Non-Postal Branches.		
Bullock Train	10,13,570 7 3	10,48,249 8 1
Military Van Dâk, Punjab	1,66,426 9 7	2,56,505 10 3
Mail Cart and Parcel Van Passenger Service ...	1,34,105 12 5	1,57,196 12 6
Total ...	13,14,102 13 3	14,61,951 14 10

Head of Charges.	1868-69.	1869-70.
	Rs. A. P.	Rs. A. P.
I.—Postal Service.		
Salaries and Establishment	31,62,021 2 5	35,50,017 4 7
Miscellaneous and Contingent Charges	7,86,351 9 11	6,89,510 14 2
Mail Cart (after deducting Charges for Passenger Service) ...	13,89,971 7 10	13,25,372 9 10
Bounty Money due to Ship Captains for the conveyance of Mails	3,413 12 0	3,284 7 0
Construction and Repairs of Buildings... ...	28,443 15 6	28,594 7 9
Total ...	53,70,201 15 8	55,96,779 11 4
II.—Non-Postal Branches.		
Bullock Train	8,88,939 12 2	10,16,618 13 11
Military Transport Train	1,84,611 10 9	1,57,550 0 6
Military Van Dâk, Punjab	1,68,533 4 3	2,52,847 13 11
Mail Cart and Parcel Van Passenger Service	1,34,105 12 5	1,57,196 12 6
Subsidiary Payments to B. I. S. N. Co.	.....	5,05,574 7 8
Total ...	13,76,190 7 7	20,89,788 0 6

* From the sale proceeds of ordinary postage stamps for 1869-70 has been deducted for the first time the discount allowed to purchasers, *viz.*, Rs. 1,39,828-11-4.

APPENDIX No. XIII.

Statement showing the estimated number of Letters and Newspapers received for delivery in the Post Office of India during the years 1854-55 *to* 1869-70.

Names of Presidencies and Provinces.	1854-55.	1855-56.	1856-57.	1857-58.	1858-59.	1859-60.	1860-61.	1861-62.	1862-63.	1863-64.	1864-65.	1865-66.	1866-67.	1866-67, exclusive of Eastern Settlements.	1867-68.	1868-69.	1869-70.
Bengal	5,890,380	6,816,144	7,538,496	8,423,448	9,300,504	9,177,492	9,054,810	9,357,518	9,729,618	9,734,709	11,167,741	12,614,453	13,036,977	12,920,607	13,822,252	15,236,422	17,388,632
Madras	5,466,672	5,707,464	7,129,044	7,773,720	8,108,191	8,264,857	8,937,428	8,732,297	8,680,578	88,36,562	9,172,172	9,732,145	10,471,156	10,471,156	10,829,753	11,917,657	12,890,229
Bombay	6,304,260	7,101,768	8,709,828	11 607,168	15,145,272	12,978,684	12,275,431	10,645,100	11,442,461	12,982,291	14,138,763	14,395,039	13,654,313	13,654,313	15,165,672	17,123,690	19,045,682
N. W. Provinces ...	11,136,288	12,676,584	13,883,052	14,503,644	18,424,068	17,367,072	16,709,741	12,094,231	12,390,673	13,065,577	14,148,361	15,333,524	15,520,837	15,520,837	15,652,848	16,986,561	18,276,503
Punjab	...	...	...	...	...	...	...	5,348,387	6,126,964	6,456,594	6,882,907	7,368,105	9,268,617	9,268,617	10,001,172	10,631,585	10,237,434
British Burmah ...	...	...	...	...	...	...	...	388,355	434,360	480,771	476,702	488,638	502,711	502,711	515,593	626,796	690,646
Central Provinces ...	...	...	...	...	...	...	...	...	...	...	...	...	1,780,746	1,780,746	1,991,075	2,142,106	2,410.531
Sind	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2,093,300
TOTAL ...	28,797,600	32,301,960	37,260,420	42,307,980	50,978,035	47,788,105	46,977,410	46,565,888	48,804,654	51,556,504	55,986,646	59,931,904	64,235,357	64,118,987	67,978,365	74,664,817	83,032,957

APPENDIX No. XIV.

ACCOUNT showing the Gross Revenue, Cost of Management and Net Revenue of the Post Office Department in India from 1853-54 *to* 1869-70.

YEARS.	Receipts, exclusive of fares from Passengers by Mail Cart and Parcel Vans.	Official Postage.	TOTAL.	Disbursements, exclusive of Bullock Train, Military Transport Train, and charges connected with the conveyance of Passengers.	Excess of Receipts.	Deficit, if Official Postage be not taken into account.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1853-54	20,48,454 4 9	24,71,168 15 1	45,19.623 3 10	24,37,209 15 4	20,82,413 4 6	3,88,755 10 7
1854-55	19,86,912 1 1	13,00,000 0 0	32,86,912 1 1	27,39,376 0 4	5,47,536 0 9	7,52,463 15 3
1855-56	15,90,524 5 5	16,20,662 6 9	32,11,186 12 2	29,44,501 1 10	2,66,685 10 4	13,53,976 12 5
1856-57	18,50,844 3 9	18,62,006 13 6	37,12,851 1 3	29,03,289 5 2	8,09,561 12 1	10,52,445 1 5
1857-58	17,49,814 1 9	18,53,210 15 5	36,03,025 1 2	35,92,848 8 0	10,176 9 2	18,43,034 6 3
1858-59	24,14,952 9 7	25,25,189 2 0	49,40 141 11 7	35,20,092 4 9	14,20,049 6 10	11,05,139 11 2
1859-60	25,92,233 5 10	27,47,012 11 0	53,39,246 0 10	37,37,911 15 3	16,01,334 1 7	11,45,678 9 5
1860-61	27,34,279 7 6	23,84,734 8 8	51,19,014 0 2	38,60,798 12 7	12,58,215 3 7	11,26,519 5 1
1861-62	28,04,846 11 10	28,68,833 3 2	56,73,679 15 0	37,99,755 10 8	18,73,924 4 4	9,94,908 14 10
1862-63	30,20,682 14 8	31,92,983 12 8	62,13,666 11 4	37,37,535 12 7	24,76,130 14 9	7,16,852 13 11
1863-64	32,07,045 2 2	35,58,546 13 0	67,65,591 15 2	38,76,162 15 6	28,89,428 15 8	6,69,117 13 4
1864-65	34,16,579 6 6	40,20,822 10 9	74,37,402 1 3	39,30,579 4 2	35,06,822 13 1	5,13,999 13 8
1865-66	35,59,268 9 3	50,08,003 7 3	85,67,272 0 6	41,88,625 11 7	43,78,646 4 11	6,29,357 2 4
1866-67 (11 months)	33,65,613 9 4	*26,56,260 6 11	60,21,874 0 3	40,29,481 9 7	†19,92,392 6 8	6,63,868 0 3
1866-67 (12 months), calculated on the average of 11 months, including Eastern Settlements	36,71,578 7 4	*28,97,738 10 5	65,69,317 1 9	43,95,798 1 7	†21,73,519 0 2	7,24,219 10 3
1866-67 (12 months), calculated on the average of 11 months, excluding Eastern Settlements	36,11,245 5 10	*28,89,758 0 7	65,01,003 6 5	43,75,067 11 10	†21,25,935 10 7	7,63,822 6 0
1867-68	37,74,607 4 6	*23,09,839 12 0	60,84,447 0 6	47,54,940 6 5	†13,29,506 10 1	9,80,333 1 11
1868-69	41,05,704 4 3	*27,55,016 8 0	68,60,720 12 3	53,70,201 15 8	†14,90,518 12 7	12,64,497 11 5
1869-70	‡39,28,383 5 10	*28,87,627 3 6	‡68,16,010 9 4	55,96,779 11 4	†12,19,230 14 0‡	16,68,396 5 6

* Including sale of Service Postage Stamps.
† The apparent reduction is to a large extent nominal, owing to the introduction of a new system of accounting for Official Postage, under which a portion of the official correspondence between Government Officers in the same District is not brought to account.
‡ These amounts are less by Rs. 1,38,429-2-3 than they would have been under the former mode of calculation, owing to the deduction for the first time in 1869-70 of the discount on sale of stamps.

No. 2951, dated 11th November 1870.

RESOLUTION.—By the Government of India, FINANCIAL DEPT.

Read—

The annual report on the operations of the Post Office of India for the year 1869-70.

RESOLUTION.—The following improvements were effected during 1869-70 in respect to communication by the Post Office with foreign countries:—

(1). The charge for carrying packets of books and patterns to the United Kingdom below 2 oz. in weight was largely reduced.

(2). Opportunity was given for sending letters to Europe *viâ* Brindisi.

(3). The rates of postage to several foreign countries were lowered.

On the other hand, certain privileges little used were withdrawn from officers in the Army in respect to letters sent to the United Kingdom.

2. There has not been much increase in the employment of steam vessels for the carriage of the internal correspondence of India, nor is much development to be expected in this respect.

The Director General of the Post Office should report whether the service between Bussorah and Bagdad is required by the Indian Post Office. The Foreign Department should be also invited to state, after consulting, if it be thought proper, the Government of Bombay, whether the maintenance of the line is required for the political interests of India.

3. The increase in the limit of weight conceded from the 1st April 1869 appears to have produced excellent results in every respect: the financial loss being very much less than was expected, and a large growth in the number of letters carried being attributed to the measure.

4. The increased charge for carrying pattern parcels was quite legitimate. There appears no reason to think that it has led to any reduction in the number of parcels despatched.

The introduction of a liberal scale of uniform rates for banghy parcels will probably lead to a large increase of such parcels.

5. The measures adopted by the Director General for improving the railway sorting arrangements and for utilising the development of the railway system for the requirements of the Post Office generally, are approved.

6. It is satisfactory to find that notwithstanding the financial pressure of the year and the economy enforced in the management of the Department, so many as 262 Post Offices and 515 letter boxes were added to those previously existing. The progress made in Bengal, Bombay, and the Punjab is notable, and compares favorably with the statistics of the other provinces. British Burmah appears to be especially backward, only two Post Offices and no letter boxes having been added in the two years. This is the more remarkable as the knowledge of reading and writing is believed to be more wide spread there than in India. But the number of letters carried in Burmah appears to be remarkably less than in India—scarcely exceeding half a million in the year. Letter boxes appear to be little used also in the Madras Presidency and in the North-Western Provinces. In future, the total number of Post Offices and letter boxes open at the end of the year in each province should be brought forward in Appendix No. I.

7. There has been no great increase in the mileage traversed by the mails during the year. It should be stated whether Appendix II contains the district lines as well as the imperial line.

8. The statistics of the purely postal work of the Department during the year are highly satisfactory, exhibiting, as they do, an increase of 11½ per cent. in the number of letters and 11¼ per cent. in articles of every kind. An examination of Appendix III shows that this increase is very general in every province in India. The apparent decrease in the Punjab is due to the separation of the Sindh Division. Apart from this, the only observable decrease of the least importance is in the number of newspapers carried in the Bombay Presidency, which fell from 1,288,748 in 1868-69 to 1,234,444 in 1869-70. But this also is probably due to the transfer of the Turkish Arabia mails to the Sindh Circle and of the Berars to the Central Provinces. The Governor General in Council is satisfied with the growth of correspondence which has responded to the liberal policy in respect to weight already referred to.

It would be interesting if in future reports the Director General could give himself or reproduce from the report of the British Post Office separate comparative statistics of the correspondence with the United Kingdom.

9. The Governor General in Council, while admitting the peculiar difficulties attending the operations of the Dead Letter Office in India, agrees with the Director General that there is room for much improvement in this Department, and hopes that particular attention will be given to it. Appendix IV should give the *totals* for each Office.

10. It is to be regretted that statistics cannot conveniently be given of mis-sent articles, as it is difficult, without such statistics, to form a complete opinion upon the working of the Post Office. Inaccurate figures are, of course, worse than useless; but the Governor General in Council is desirous that the attempt to secure an accurate account of the facts in this respect should not be given up.

11. The returns of labels sold show, as was to be expected, a great decrease in the use of 1, 2, and 4-anna labels. The fact will doubtless be borne in mind in indenting for supplies from England.

12. The success which has attended the management of the District Post by the Imperial Department is gratifying, and the Government of India hopes that the system will be everywhere extended without delay. The special attention of the several local Governments will be invited to the section of the report which treats of the District Post, and to these remarks. The future progress of the Post Office must largely depend upon the good administration of the District Post, which is very unlikely to be effected by the District Officers, who have their hands full of other work. The appointment of a Chief Inspector in Oudh has been sanctioned separately. The proportion of letters returned undelivered in the North-Western Provinces and the Punjab is especially unsatisfactory.

13. The Governor General in Council agrees with the Director General in doubting the value of the return (No. VIII) of complaints made, and it may be discontinued; but the subject should always be referred to, and specially numerous complaints in any circle reported.

The return of offences committed in the Department shows that, as a body, the officers have behaved well.

14. The special attention of the Foreign Department will be invited to the large number of highway robberies of mails in foreign territories as detailed in paragraph 34 of the report. It is probable that the scarcity in Rajpootana may account for some of these outrages.

15. The administration of the bullock train, the military van dâk, and the passenger service, appears to have been efficient, though the profits have been curtailed by the costliness of forage arising from the scarcity. The profits of the bullock train should always be stated in full, any portion of them expended on other branches of the Department being shown against the branches debitable.

16. The Government agrees with the Director General in considering the financial results of the year's operations generally satisfactory. Some loss of net revenue was, of course, to be expected as the result of doubling the limit of weight of letters. Moreover, there have been many adverse circumstances

affecting the Postal Department during the year, besides the charge of discount for the first time. That the loss should be so little (only Rs. 2,71,288) must be attributed to the success of the measure for increasing the limits of weight being greater and more prompt than was expected, and to the careful economy exercised by the Director General of the Post Office. The charges in England should always be shown as an actual charge of the Department before bringing out the net revenue or deficit.

Some explanation should be given of the considerable increase in the charge for official postage. The increase of Rs. 1,41,920 in the Bombay Presidency is especially remarkable.

17. It is gratifying to learn that the finances of the present year are so flourishing that the Director General hopes to be in a position to propose further concessions to the public. The Government will always be glad to consider any such proposals in a liberal spirit, provided, at any rate, that they involve no encroachment on the general revenues.

18. The progress of the Department since 1854 as exhibited in paras. 54 and 55 shows unmistakeably that the principles which have succeeded in Europe have also succeeded in India beyond the most sanguine expectations. The Government does not doubt that this progress will continue.

19. The Governor General in Council has read with much pleasure the favorable report made of the officers named in the margin, and he desires that the commendation of the Government may be conveyed to them.

Major Battye.	Major Fanshawe.	Mr. Kellie.
Colonel Pears.	Mr. Beauvais.	Mr. Bonafacio.
Mr. F. R. Hogg.	Mr. Douglas.	Mr. Stuart.
Captain Lane.	Mr. John Dillon.	Mr. Barwise.
Mr. Hutchinson.	Baboo Dinno Bundhu Mitter.	Mr. Hutton.
	Baboo Surjee Narain Bannerjee.	Mr. Faichnie.

20. The thanks of the Government of India are again due to Mr. A. McL. Monteath for his zealous, able, and economical administration of the important Department over which he presides.

ORDERED, that the foregoing Resolution be communicated to the Director General of the Post Office of India for information and guidance, and to the Comptroller General of Accounts.

Ordered also, that a copy be forwarded to the Foreign Department for information and further orders.

Ordered further, that a copy of the Report and Resolution be sent to the Home Department for publication in the Supplement to the *Gazette of India*.

Printed and published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 45 of 1870.

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, NOVEMBER 19, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 11th November 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding.*
His Honour the Lieutenant Governor of Bengal.
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble B. H. Ellis.
Major-General the Hon'ble H. W. Norman, C. B.
The Hon'ble D. Cowie.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
The Hon'ble F. R. Cockerell.

PRISONERS' BILL.

The Hon'ble MR. COCKERELL moved that the Bill to consolidate the law relating to Prisoners committed by a Court be referred to a Select Committee with instructions to report in a month. He said that the nature and object of the legislation of which this Bill formed a part, had been so frequently dwelt upon by his hon'ble and learned friend who had especial charge of the Legislative Department (Mr. Stephen) that it was unnecessary for him to advert to

them here. The great advantage to be derived from a complete consolidation of the statutes must be universally acknowledged; and the substitution of one Act for seven could hardly be ranked amongst the measures obnoxious to the charge of over-legislation.

The adoption of such amendments of the existing law as were shewn to be required was of course an important element in the work of consolidation.

As regards the present Bill, the proposed alterations were confined to improvements in wording and arrangement.

The seven Parts of the Bill contained the substance of seven out of the nine enactments cited in the schedule; the provisions of the other two were enacted for a temporary purpose and were now obsolete.

The enactments so consolidated, embraced so much of the entire law (except the recently passed Prisons' Act) relating to prisoners as could not be effected by the action of the local Legislatures.

The Motion was put and agreed to.

CATTLE TRESPASS BILL.

The Hon'ble MR. COCKERELL also moved that the Bill to consolidate the law relating to Cattle Trespass be referred to a Select Committee with instructions to report in a month. He said that this also was a consolidation measure, incorporating with the original Cattle Trespass Act (III of 1857), the substance of the subsequent amending enactments.

When introducing the Bill, he (MR. COCKERELL) explained the grounds of the then proposed alterations. Since the Bill had been drawn, it had been brought to notice that the restriction contained in section 13, in regard to the appropriation of surplus funds accruing from fines and other receipts, worked inconveniently, and that it was desirable to extend the area of the objects on which such funds might be expended.

It had also been suggested that the provisions of section 15 should be enlarged so as to strengthen the hands of the officers employed in the conservation of forests, in the prevention of injury caused by the trespass of cattle.

The Motion was put and agreed to.

BENGAL REGULATIONS REPEAL BILL.

The Hon'ble MR. COCKERELL then moved that the Hon'ble Messrs. Strachey and Chapman be added to the Select Committee on the Bill to repeal certain obsolete Regulations of the Bengal Code.

The Motion was put and agreed to.

The following Select Committees were named:—

On the Bill to consolidate the law relating to Prisoners committed by a Court——The Hon'ble Messrs. Stephen and Chapman and the mover.

On the Bill to consolidate the law relating to Cattle Trespass——The Hon'ble Messrs. Stephen and Chapman and the mover.

The Council adjourned to Friday, the 18th November 1870.

CALCUTTA,
The 11th November 1870.

WHITLEY STOKES,
Secy. to the Govt. of India.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

IRRIGATION OPERATIONS OF FUSL KHURREEF, 1870-71, IN THE N. W. PROVINCES, UP TO 31ST AUGUST.

WATER DISTRIBUTED DURING AUGUST 1870.

CANAL DIVISIONS.	Depth in Canal at Regulating Gauge. Full supply. feet.	Depth in Canal at Regulating Gauge. Actual throughout. feet.	Gross Consumption, cubic feet, per second. Estimated full Discharge.	Gross Consumption, cubic feet, per second. Actual Average throughout.	Nature of Traffic.	Up. No.	Up. Mds.	Down. No.	Down. Mds.	Total Up and Down. Mds.
Northern	9·00	1·70		214	GRAINS:—					
Meerut	6·80	0·99		164	Gram		100			100
Futtehgurh	6·50	Closed		34	Wheat		100			100
Boolundshuhur	Not known	0·61	5,585	163	Barley		...			150
Allygurh	6·00	0·86		49	TOTAL		200			350
Etawah	4·80	0·09		*Nil.*	Cotton		...			...
Cawnpore	6·00	0·73		*Nil.*	Oil-seeds		...			...
			TOTAL	624	Salt		...			...
Eastern Jumna Canal	...	4·71	...	1,154	Metals		...			...
Doon Canals	...	...	...	143	Building Materials		296			296
Rohilkhund Canals	...	...	...	400	Miscellaneous		...			...
					Goods		...			...
					Firewood		...			...
					Bamboos		...			...
					Bullees, or Poles, unsquared timber		...			...
					Kurrees, squared timber		...			...
					Logs		...			...
					Miscellaneous Timbers		...			...
					Passengers		...			...
GRAND TOTAL...	...	...	...	2,321	GRAND TOTAL	...	496	50	946	450

NAVIGATION RETURN, GANGES CANAL.

LAND IRRIGATED (APPROXIMATE). Zillah.	Acres.	RAIN-FALL. Total from 1st April to 31st August 1870.	RAIN-FALL. Average of ten previous years for the same period.	REMARKS.
Saharunpore ...	33,202	26·2	29·3	The mean volume of the Ganges Canal passing the Roorkee gauge was 861 cubic feet.
Moozuffernuggur ...	54,843	27·1	21·9	Volumes discharged were:—
Meerut ...	73,246	33·8	19·5	Tail and Escapes } Etawah Branch, 70 c. ft. per sec.
Boolundshuhur...	31,016	25·0	14·7	Tail and Escapes } Cawnpore " 193 " "
Allygurh ...	37,089	21·8	20·4	263 c. ft. per sec.
Muttra ...	5,714	23·9	20·0	The Cawnpore and Etawah Branches have
Agra ...	500	21·7	19·1	alternate weeks of high and low supply.
Etah ...	9,164	19·1	21·7	The rain-readings show the mean of
Mynpoory ...	9,356	26·3	23·0	the month.
Futtehgurh ...	4,246	31·4	22·7	The annual closure of the Ganges Canal
Etawah ...	12,773	32·4	21·8	lasted till the evening of the 17th instant. The canal opened to a very small
Cawnpore ...	21,549	24·8	22·9	demand, as only 870 acres were irrigated
Debra Doon ...	5,076	70·7	57·2	for the first time on the Ganges Canal
Bijnour ...	552	32·6	22·8	during the month of August. This irrigation took place in the Meerut, Futtehgurh, and Etawah Divisions of the Canal.
Terai ...	2,571	54·0	30·5*	On the Eastern Jumna Canal the demand was principally for rice. The demand fell considerably towards the end of the month, owing to heavy rain.
Bareilly ...	13,357	43·8	27·8	On the Doon Canals, also the rain towards the end of the month was very heavy, and the consequent floods did considerable damage to the headworks of some of these small canals. There was during the month a fair demand for rice.
Jhansie ...	108	24·3	27·9	
Humeerpore ...	200	33·6	24·1	
TOTAL ...	314,562	...	...	

* Average for the past six years. Rain-fall previous to 1864 not given.

W. G. ROSS, *Lieut., R.E.,*
Asst. to Chief Engr., Irrigation Works, N. W. P.

ALLAHABAD;
The 19th September 1870.

IRRIGATION OPERATIONS OF FUSL KHURREEF, 1870-71, IN THE N. W. PROVINCES, UP TO 30th SEPTEMBER.

* CANAL DIVISIONS.	WATER DISTRIBUTED DURING SEPTEMBER 1870. Depth in Canal at Regulating Gauge. Full Supply, feet.	Depth in Canal at Regulating Gauge. Actual throughout, feet.	Gross Consumption, cubic feet, per second. Estimated full Discharge.	Gross Consumption, cubic feet, per second. Actual Average throughout.
Ganges Canal. Northern ...	9·00	5·43		545
Meerut ...	6·80	3·43		95
Futtehghur ...	6·50	Closed		34
Boolundshuhur ...	Not known	...	5,585	79
Allyghur ...	6·00	4·26		43
Etawah ...	4·80	0·87		11
Cawnpore ...	6·00	5·30		1,359
			Total	2,166
Eastern Jumna Canal ...	...	3·24	...	716
Doon Canals ...	...	...	...	170
Rohilkhund Canals ...	...	...	...	1,050
Grand Total...	...	...	...	4,102

NAVIGATION RETURN, GANGES CANAL. Nature of Traffic.	Up. Mds.	Up. No.	Down. Mds.	Down. No.	Total Up and Down. Mds.	Total Up and Down. No.
Grains :—						
Oorud ...	...	..	875	...	875	...
Wheat ...	695	...	204	...	899	...
Gram ...	200	...	...	...	200	...
Urhur ...	523	...	...	...	523	...
Rice ...	58	...	...	...	58	...
Barley ...	...	..	100	...	100	...
Paddy ...	...	...	86	...	86	...
Total ...	1,476	...	1,265	...	2,741	...
Cotton ...	...	...	93	...	93	...
Oil-seeds ...	...	...	391	...	391	...
Salt ...	200	...	...	...	200	...
Metals ...	7,853	...	...	...	7,853	...
Building Materials	6	...	4,500	...	4,506	...
Miscel. Goods ...	2,098	...	680	...	2,778	...
Firewood ...	750	...	2,400	...	3,150	...
Bamboos ...	...	...	...	32,360	...	32,360
Bullees, or Poles, unsquared timber	...	...	...	398	...	398
Kurrees, squared timber ...	...	1279	...	483	...	1,762
Logs ...	...	1	...	...	...	1
Miscel. Timbers ..	...	68	...	...	...	68
Passengers or Live Stock ...	...	...	...	50	...	50
Grand Total...	12,383	1348	9,329	33,291	21,712	34,629

LAND IRRIGATED (APPROXIMATE). Zillah.	Acres.
Seharunpore ...	42,653
Moozuffernuggur	55,780
Meerut ...	75,918
Boolundshuhur...	31,016
Allygurh ...	37,089
Muttra ...	5,714
Agra ...	500
Etah ...	9,164
Mynpoory ...	9,356
Futtehgurh ...	5,306
Etawah ...	12,890
Cawnpore ...	22,267
Dehra Doon ...	5,076
Bijnour ...	552
Terai ..	2,571
Bareilly ...	14,454
Jhansie ...	113
Humeerpore ..	200
Total ...	330,619

RAIN-FALL. Total from 1st April to 30th September 1870.	Average of ten previous years for the same period.
33·0	33·9
34·3	25·6
38·0	22·5
29·7	17·5
23·9	24·4
26·7	23·4
22·1	23·4
23·5	27·4
9,356	29·6
37·2	29·4
41·2	29·4
46·1	27·2
35·9	28·4
82·2	66·5
39·7	27·7
57·9	38·7*
49·0	36·1
29·9	33·6
40·1	30·8
...	...

REMARKS.

The mean volume of the Ganges Canal passing the Roorkee guage was 2,839 cubic feet per second.

Volumes discharged were :—

Tail, Etawah Branch 23 c. ft. per sec.
Escapes „ „ 438 „ „
Tail. Cawnpore „ 212 „ „
Escapes „ „ No returns.

673 c. ft. per sec.

The Cawnpore and Etawah Branches have alternate weeks of high and low supply. The guage-readings show the mean of the month.

Futtehgurh Branch main channel was closed during the month.

The demand for water on the Ganges Canal was very slight.

On the Eastern Jumna Canal the highest flood *in the river since* August 1867, was registered on the 3rd instant; the height on the river-gauge was 12·50. The canal was closed from 8th to 12th, both days inclusive, to pass off surplus drainage-water, there being no demand for irrigation. The river fell rapidly and steadily from the 11th till the end of the month. Demand for water, chiefly for *irrigation of rice*, re-commenced on the 13th instant.

On the Doon Canals water was in fair demand for rice.

* Average for the past six years. Rain-fall previous to 1864 not given.

Allahabad;
The 20th October 1870.

W. G. ROSS, *Lieut., R. E.,*
Asst. to Chief Engr., Irrigation Works, N. W. P.

IRRIGATION OPERATIONS OF FUSL-KHURREEF OF 1870-71 IN THE PUNJAB, UP TO 31st AUGUST 1870.

CANAL DIVISION.	WATER DISTRIBUTED DURING AUGUST 1870. Depth in Canal at Regulating Gauge. Full Supply.	Depth in Canal at Regulating Gauge. Actual throughout August.	Gross Consumption C. Ft. per Second. Estimated Full Supply.	Gross Consumption C. Ft. per Second. Actual Average throughout August.
Baree Doab Canal. 1st Division ...	4·9	3·62	...	734·99
2d Divn. Main Branch, Lower	4·6	2·92	...	744·17
2d Divn. Lahore Branch ...	3·3	3·1	...	567·61
			3073·6	
Total B. D. Canal	...	...	...	2046·77
Western Jumna Canals. Kurnaul Division ...	4·33	3·42	...	155·28
Delhi „ ...	4·4	1·73	...	287·30
Hansi „ ...	8·8	8·0	2546·	756·
Do. Bulla Head ...	8·4	6·4	...	214·
Total W. J. Canals	...	...	...	1412·58
Inundation Canals. Upper Sutlej Division ...	...	...	..	...
Lower Sutlej and Chenab	..	...	...	...
Indus Canals ...	...	...	...	...
Total Inundation Canals ...	...	...	...	...
Total D. and G. Works ...	...	...	...	...
GRAND TOTAL ...	...	...	...	...

NAVIGATION RETURN CANAL. Principal Items of Traffic. Up.	Down.
...	...
...	...
...	...
Nil	*Nil*
...	...
...	157,819 Bullies, Kurrees, &c.
...	157,819
...	...
...	...
...	...
...	...

LAND IRRIGATED (APPROXIMATE). Zillah.	Acres.
Goordaspoor	11,740
Umritsur ...	24,017
Lahore ...	31,830
...	67,587
Umballa ...	2,692
Kurnaul ...	33,618
Delhi ...	36,126
Rohtuck ...	34,798
Hissar ...	21,670
Jheend ...	10,399
Bikaneer ...	69
...	139,372
Lahore ...	5,000
Montgomery	55,000
Mooltan ...	155,942
Dera Ghazee Khan ...	124,000
...	339,942
...	*Nil*
...	546,901

RAINFALL. Average.	During month.
7·75	13·12
7·26	3·30
...	...
...	..
10·124	8·49
6·452	4·51
...	...
...	8·70
...	0·60
...	...
...	...
not known	3·18
1·073	1·0
...	...
...	...
...	...

Name.	Area in Acres.
Cotton ...	8,118
Rice ...	20,964
Sugarcane..	6,456
Others ...	32,049
...	67,587
...	...
Cotton ...	72,461
Rice ...	25,174
Sugarcane..	33,787
Others ...	7,950
...	139,372
Detail not obtainable for want of establishment	...
...	339,942
...	...
...	546,901

REMARKS.

396·62 cubic feet per second passed down escapes, being in excess of the requirements for irrigation.

430·68 cubic feet per second discharged by the Boodha Khera escape.

In comparison with the statement of irrigation up to a similar date of last year, we find the approximate decrease on the Baree Doab Canal 14,106 acres, and on the Western Jumna Canal 4,034 acres.

The reasons for the decrease in the Baree Doab Canal were given in June's statement.

It is satisfactory to observe that the decrease is reduced during August by about 10,500 acres.

Lahore,
The 31st October 1870.

W. BROADFOOT, *Lieut., R.E.,*
Asst. Secy. to Govt., Punjab, P. W. D., Irrign. Branch.

No. 46 of 1870.

SUPPLEMENT TO

The Gazette of India.

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GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 18th November 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding.*
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble B. H. Ellis.
Major General the Hon'ble H. W. Norman, C. B.
The Hon'ble D. Cowie.
The Hon'ble Francis Steuart Chapman.
The Hon'ble F. R. Cockerell.

INDIAN PENAL CODE AMENDMENT BILL.

The Hon'ble MR. STEPHEN presented the final report of the Select Committee on the Bill to amend the Indian Penal Code. This Bill had been much discussed. He hoped to explain at a very early opportunity the policy of the Government in respect to it.

LIMITATION OF SUITS BILL.

The Hon'ble MR. STEPHEN, in moving for leave to introduce a Bill to consolidate and amend the law relating to the limitation of suits, said that this

Bill was one with regard to which it would be improper to occupy the attention of the Council at any length, inasmuch as it was a Bill of a most technical character, although he hoped it would prove to be one of great utility. The present law regarding the limitation of suits, as contained in Act XIV of 1859, contained twenty-four sections, and he was very sorry to say that those twenty-four sections had given rise to nearly 1,100 decisions, so that the law had got into a state which could be easily imagined by those accustomed to reading law-books, and which it would be difficult to describe to others.

It was enough to say that since the Act came into force, there had been more than 125 decisions a year upon it. These decisions had been collected with great care, and discriminated with much learning and intelligence, by Mr. Ninian Thomson, a Judge of the Small Cause Court of Calcutta, in a work which he had lately published on the subject. The work was creditable to Mr. Thomson, but the necessity for it was discreditable to the law. MR. STEPHEN thought it was the duty of the legislature, as soon as it could, to reduce this enormous mass of decisions to a certain number of plain enactments. The general principle on which statutes of limitation were framed was plain and notorious. The practical difficulty of framing them lay in the circumstance that it had been customary to provide that actions should be brought within a certain time "after the cause of action arose." To say when the cause of action arose in particular cases was often very difficult. The Bill proposed to deal with the difficulty by setting forth in a schedule every sort of suit, and stating specifically, in the case of each suit, the precise moment at which the period of limitation began to run. The schedule thus prepared contained 157 different items, and was furnished with a copious index, which would enable anybody to find with ease the law relating to the suit in which he was interested. That was the great feature of the Bill.

Besides that feature, there was another of considerable importance in point of simplification. The Bill repealed different portions of no less than 25 enactments. He need not say much about the substance of the provisions of the Bill itself: they did not greatly alter the substantive law, except in introducing provisions which would enable persons to acquire a title by prescription. This would alter rather the theory than the practice of the law. The schedule was long, but he believed it would be found to embody the substance of the whole of that enormous mass of decisions in which the present law was contained, and that it would very much abridge and simplify the existing law.

The Motion was put and agreed to.

INDIAN REGISTRATION BILL.

The Hon'ble MR. COCKERELL asked leave to postpone his motion to introduce the Bill for the Registration of Assurances.

Leave was granted.

CIVIL COURTS (BENGAL) BILL.

The Hon'ble MR. COCKERELL introduced the Bill to consolidate and amend the law relating to the District and Subordinate Civil Courts in Bengal, and moved that it be referred to a Select Committee with instructions to report in six weeks. He said that the Bill had been published in the *Gazette of India* under Rule 19. It purported to consolidate the law relating to the constitution and jurisdiction of all the Civil Courts (except the Small Cause Courts) subordinate to the High Courts in Lower Bengal and the North-Western Provinces.

There was, he thought, no part of the Statutes which stood in greater need of consolidation than that which related to the subject of this Bill, for the

course of legislation had brought the law regarding the Bengal Courts into such a disjointed state that it was no easy matter at the present time to ascertain the precise legal jurisdiction and functions of a District Judge.

The original legislation on this subject, contained in the Regulations of 1793, and the corresponding Regulations of 1795, 1803 and 1805, which virtually extended the provisions of the former Regulation to Benares and the territories which were then known as the Ceded and Conquered Provinces, combined directions as to the application of substantive law and rules of procedure, and applied only to the Zila or District Courts.

The Courts of Munsifs and Sadr Amíns were first established on their present footing by Regulation XXIII of 1814, and those of Principal Sadr Amíns by Regulation V of 1831. These Regulations specifically prescribed certain rules of procedure for the above Courts, and in general terms extended to them the provisions of the older enactments, which regulated the application of substantive law in the adjudication of litigated matters by the Zila Courts.

The Civil Procedure Code superseded the rules of procedure prescribed by the Regulations, and it thereafter became necessary to set aside the latter by express repeal; but, as in the manner just described, rules as to the application of substantive law and of procedure had become so interwoven, especially as regards the inferior Civil Courts, that the repealing process was inadvertently carried too far, and operative rules were extinguished in conjunction with those which had become obsolete.

Thus it happened that, although nearly all litigation was, at least in its primary stages, carried on in the Civil Courts subordinate to the District Courts, the former were not under any law at present in force bound by the very important rule contained in section 18 of the Bill.

The provision of section 17 also was, in the present state of the law, legally applicable only to the Zila or District Courts.

Section 19 contained a new and useful provision, taken from the law in force in the Madras Presidency.

In Part V (section 28) there was a new provision for dealing with charges of grave misconduct on the part of Munsifs. As those officers were removable from office without the sanction of the Government, Act XXXVII of 1850 would not *per se* be directly applicable to such cases.

The existing law on the subject of Part VI was, as regards the District Courts, held to leave the extent of the power conferred on those Courts for the removal of their ministerial subordinates open to some doubt. The High Court claimed to have, and did in fact, he believed, exercise, a power of interference in such cases.

As the Bill now stood this power was disallowed, and it would be a question for the consideration of the Select Committee to which this Bill might be referred, whether the reservation to the superior Court of a power of interference was expedient.

If the High Court was to have the power of removing the ministerial officers of the District Courts from one District Court to another, he thought it should only be exercised at the instance of a District Judge.

It seemed to be essential to the maintenance of a proper control over his office establishment, and the consequent efficient conduct of the routine business both of the District and Subordinate Courts, that the authority of the Judge for the punishment of misconduct on the part of his ministerial officers should not be impaired by the existence of a power of interference *proprio*

motu vested in a remotely located superior Court; and it would surely be contrary to sound policy to fetter the discretion of so high a functionary as the Judge of a District Court in the government of his office establishment, for whose efficiency he was solely responsible.

In other respects the Bill attempted no more than the reproduction of the substance of the existing law in more concise language, and with a clearer and more intelligible arrangement of its subject-matter.

The Motion was put and agreed to.

INSOLVENCY BILL.

The Hon'ble MR. STEPHEN introduced the Bill to amend the Law of Insolvency, and moved that it be referred to a Select Committee with instructions to report in two months. He said that since he had moved for leave to introduce this Bill, it had been printed and published for public information. He had stated on a former occasion what the principles of the Bill were, and pointed out the manner in which it had been framed on the English law lately passed. The Bill was published while the Council was at Simla, in order to afford to the mercantile community, and especially to the mercantile Members of the Council, the opportunity of forming an opinion on the subject. It would be considered during the winter; but he (MR. STEPHEN) might observe, with reference to a remark he had seen made, that it was a mistake to infer, from the first of January next having been fixed as the date for the commencement of the Act, that there would be any particular hurry about passing the Bill. Such dates were always inserted subject to alteration.

In the mean time he hoped to receive the opinions of the mercantile community, and especially the opinions of the three Chambers of Commerce, on the provisions of the Bill. It had been already approved by the Official Assignee at Calcutta, who had made some valuable observations as to the mode by which frauds might be prevented; and MR. STEPHEN hoped that, before the end of the session, the Bill would be passed into law.

The Motion was put and agreed to.

EVIDENCE AND CORONERS' BILLS.

The Hon'ble MR. STEPHEN also moved that the Hon'ble Mr. Chapman be added to the Select Committees on the Bills to define and amend the Law of Evidence, and to consolidate the laws relating to Coroners.

The Motion was put and agreed to.

The following Select Committees were named:—

On the Bill to consolidate and amend the Law relating to the District and Subordinate Civil Courts in Bengal——The Hon'ble Messrs. Stephen and Chapman and the mover.

On the Bill to amend the Law of Insolvency——The Hon'ble Messrs. Cowie, Chapman, Bullen Smith and Cockerell and the mover.

The Council adjourned to Friday, the 25th November 1870.

CALCUTTA,
The 18th November 1870.

WHITLEY STOKES,
Secy. to the Govt. of India.

GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

TRADE IN LADAKH FOR SEPTEMBER 1870.

TABLE I.

EXPORTS from Ladakh during September 1870.

ARTICLES.	Quantity in Maunds of 80 Lbs. by										Rate in Lé.		Value.
	Kullu.		Rampúr.		Kashmir.		Chanthang.		Yarkand.		Total.				
	Mds.	S.	Mds.	S.	Mds.	S.	Mds.	S.	Mds.	S.	Mds.	S.	Rs. per Md.		Rs.
Bhang	225	8	...		140	25	...		...		365	33	50	0 0	18,291
Pashm, Wool	9	0	...		17	8	...		...		26	8	60	0 0	1,572
Silk	3	0	...		1	16	...		...		4	16	240	0 0	1,056
Gillar Patar(*a*) ...	3	0	...		...		...		...		3	0	260	0 0	780
Tea	...		...		(*b*)2	4	(*b*)64	0	(*c*)94	8	160	12	160	0 0	25,648
Phulli	...		...		23	0	...		...		23	0	1	4 0	30
Spices	...		...		...		...		30	16	30	16	40	0 0	1,216
Sugar	...		...		...		...		84	0	84	0	40	0 0	3,360
Skins, Lakhi	...		...		...		...		86	16	86	16	62	8 0	5,400
Piece Goods, Bazzazi ...	...		...		...		...		113	16	113	16	175	0 0	19,845
Preserves	...		...		...		...		15	0	15	0	40	0 0	600
Honey	...		...		...		...		3	32	3	32	25	0 0	94
Drugs	...		...		...		...		4	20	4	20	40	0 0	180
Haberdashery(*d*) ...	...		...		...		...		7	32	7	32	150	0 0	1,170
Quicksilver	...		...		...		...		2	26	2	26	200	0 0	520
Jack Stones	..		...		1	20	...		...		1	20	...		500
Otter Skins	...		...		...		...		2,740 No.		2,740 No.		4 each.		10,960
Brocades	...		...		...		...		66 pieces		66 pieces		100 „		6,600
Satin	...		...		...		...		56 „		56 „		50 „		2,800
Velvet	...		...		...		...		8 „		8 „		100 „		800
Shawls	...		...		...		...		35 pairs.		35 pairs.		100 „		3,500
Koran, copies of (*e*) ...	...		...		...		...		100 No.		100 No.		2 „		200
Guns, English ...	...		...		...		...		68 „		68 „		100 „		6,800
Pistols	...		...		...		...		6 „		6 „		50 „		300
Gunpowder	...		...		...		...		20 cases.		20 cases.		4 per case.		80
Gun Caps	...		...		...		...		1,27,500 No.		127,500 No.		8 per mille.		1,020
Cartridges	...		...		...		...		3,000 „		3,000 „		50 „		150
Felt rugs	50	No.	...		31	No.	...		...		81 „		2 each.		162
Carpets	40	„	...		1	„	...		...		40 „		...		250
Yaks' tails	50	„	...		52	„	...		...		102 „		1	8 0	153
Posteen fur robes (*f*) ...	...		...		3	„	...		...		3 „		12	0 0	36
TOTAL ...	240	8	...		185	33	64	0	412	4	932	5	...		1,14,072

(*a*.) Sea weed from China.
(*b*.) Brick tea taken back to Lhassa.
(*c*.) Kangra tea.
(*d*.) Including knives, scissors, needles, &c., &c.
(*e*.) From Punjab.
(*f*.) From Ladakh.

TABLE II.

IMPORTS into Ladakh during September 1870.

ARTICLES.	Quantity in Maunds of 80 Lbs. by										Rate in Ladakh.	Value.
	Kullu.		Rampúr.		Kashmir.		Chanthang.	Yarkand.		Total.		
	Mds.	S.	Mds.	S.	Mds.	S.	Mds. S.	Mds.	S.	Mds. S.	Rs. per Md.	Rs.
Bazzazi Piece Goods ...	31	8	5	8	41	32	...	...		78 8	175 0 0	13,685
Coarse Cloth	...		...		...		...	46	16	46 16	87 8 0	4,060
Sugar	40	0	2	0	...		...	...		42 0	40 0 0	1,680
Kiriana Spices ...	9	0	10	8	...		...	...		19 8	40 0 0	768
Lakhi Goat Skins ...	10	16	...		3	0	...	...		13 16	62 8 0	838
Tea, Kangra(*a*) ...	105	8	...		...		...	...		105 8	160 0 0	16,832
Senna	6	0	4	0	...		...	...		10 0	20 0 0	200
Tamarind, preserved ...	3	0	3	0	...		...	...		6 0	40 0 0	240
Drugs, &c.	...		4	0	...		...	...		4 0	40 0 0	160
Opium	...		3	0	...		...	...		3 0	600 0 0	1,800
Bhang	...		...		...		...	1,450	0	1,450 0	50 0 0	72,500
Pashm, Wool	...		...		...		...	84	8	84 8	60 0 0	5,052
Silk	...		...		...		...	11	20	11 20	240 0 0	2,760
Gillar Patar(*b*) ...	...		...		...		...	6	0	6 0	260 0 0	1,560
Otter Skins	348 No.		23 No.		...		...	...		371 No.	4 each	1,484
Kimkhab brocades ...	45 thans		...		...		...	...		45 thans	100 „	4,500
Broadcloth, velvet ...	...		3 thans		14thans		...	...		17 „	100 „	1,700
Tawar Satin	...		...		63 „		...	...		63 „	50 „	3,150
Shawls, Kashmir & Amritsar	6 pairs		...		630 pairs		...	...		636 pairs	...	63,060
Heron plumes ...	25 No.		50 No.		...		...	...		75 No.	1 for three	25
Koran, copies of (*c*) ...	25 „		...		10 No.		...	...		35 „	...	450
Dyes, Aniline	...		7 boxes.		...		...	...		7 boxes	10 each	70
Guns, English ...	...		1 No.		59 No.		...	...		60 No.	100 „	6,000
Pistols	...		...		3 „		...	...		3 „	50 „	150
Gun Caps	...		...		50,000 „		...	...		50,000 „	8 per mille	400
Felt rugs	...		...		...		...	4,095 No.		4,095 „	2 each	8,190
Carpets	...		...		...		...	398 „		398 „	...	2,870
Kunsan, colored leather ...	...		...		...		...	400 pieces		90 pieces	20 per cent.	80
Yaks' tails	...		...		...		...	202 No.		202 No.	1-8 each	303
Kurus Silver Ingots ...	...		...		...		...	95 „		95 „	170 „	16,150
Gold-dust	...		...		...		...	469 tolas		469 tolas	14 „	6,566
Mushru Silk and Cotton Fabrics	...		...		...		...	50 thans		50 thans	4 „	200
Bulgar large skins(*d*) ...	...		...		...		...	2 „		2 „	15 „	30
Posteen fur robes ...	...		...		...		...	3 „		3 „	70 „	210
TOTAL ...	204	32	31	16	44	32	...	1,598	4	1,879 4	...	2,37,728

(*a*.) Chiefly green. (*b*.) Sea weed used as medicine. (*c*.) Manuscript much valued. (*d*.) From Russia.

H. CAYLEY.

GOVERNMENT OF INDIA.

FOREIGN DEPARTMENT.

DEVELOPMENT OF COMMERCIAL RELATIONS BETWEEN RUSSIA AND INDIA THROUGH THE SUEZ CANAL.

Memorandum on the probable effect of the opening of the Suez Canal on the trade of Russia with the East Indies, &c., drawn up by MR. THOMAS MICHELL *from statements published in a report to the Society for the Promotion of Russian Trade by Mr. Skalkoffsky, who represented the Society at the opening of the Suez Canal.*

The Society for the Promotion of Russian Trade and Industry having requested Mr. Skalkoffsky, one of their members, to assist at the opening of the Suez Canal, that gentleman has recently presented the Society with a printed report, of which the following is to a great extent merely an abstract:—

Distances.—Mr. Skalkoffsky points to Odessa as the port to which the trade of Russia with China, India, &c., will ultimately be attracted by the great advantages of the canal route. Odessa is seldom frozen in winter, and will soon be connected by rail with the west of Europe. He expects that the merchandise of the Far East will be transported thence to Moldavia, Wallachia, Galacia, East Prussia, Sweden, and other countries. The advantages of Odessa in respect to distance are shown as follows:—

	From Odessa Nearer than from Southampton round the Cape.	
	via Suez.	
	Nautical Miles.	
To Bombay	8,948	6,792
„ Ceylon	4,548	5,912
„ Calcutta	5,688	5,912
„ Singapore	6,078	5,702
„ Hong-Kong	7,508	5,672

Odessa is nearer to Bombay than the following European ports, *viz.*,—

Trieste	by	152	nautical miles.
Liverpool	„	2,060	„ „
London	„	2,076	„ „
Bremen	„	2,462	„ „
Cronstadt	„	3,412	„ „

Steamers can make the voyage from Odessa to Bombay in the following time, *viz.*,—

	Miles.	*Days.*
Odessa to Constantinople, with stoppage there... ...	352	
Constantinople to Port Said	780	
	1,132	7
Passage of canal with stoppage	...	3
Suez to Aden	1,310	8
Aden to Bombay	1,510	8
TOTAL DAYS ...		26

A steamer will therefore take seven days less in performing the voyage between Odessa and Bombay than between Bombay and Southampton. At

the same rate, the time that a steamer will take between Odessa and the more distant parts in India and China will be as follows :—

	N. Miles.	*Days.*
Odessa to Point de Galle	4,588	29
„ Calcutta	5,688	35
„ Singapore	6,078	37
„ Hong-Kong	7,508	43

East Indian cotton shipped at Bombay in sailing vessels reaches Moscow in the following number of days :—

	Days.
Bombay to London	110
London to St. Petersburg in steamer	14*
St. Petersburg to Moscow	4
TOTAL ...	128

whereas if shipped to Odessa *viâ* Suez in a steamer, the time occupied would only be 33 days, thus :

	Days.
Bombay to Odessa	27
Odessa to Moscow	6
TOTAL ..	33

or a gain of 95 days.

The following are the distances between Odessa and Moscow and St. Petersburg by rail now opened :—

	Versts.	*Stat. Miles.*
Odessa to Moscow	1,567½	1,045
„ St. Petersburg	2,171	1,447

Cost of carriage.—The present mean cost of carrying Indian produce to St. Petersburg *viâ* the Cape of Good Hope and England is shown in the following Table :—

Table A.

Goods.	Freight		Total mean freight to St. Petersburg *viâ* the Cape.
	To London.	London to St. Petersburg.	
	Per Ton.	*Per Ton.*	*Per Ton.*
Cotton (from Bombay)	30*s.* to 35*s.*	26*s.* 6*d.*	59*s.*
Tea („ Calcutta)	60*s.*	20*s.*	80*s.*
Indigo („ „)	75*s.*	40*s.*	115*s.*
Coffee („ Bombay)	35*s.*	27*s.* 6*d.*	62*s.*
Pepper („ „)	20*s.*	20*s*	40*s.*
Dye-wood („ „)	20*s.*	30*s*	50*s.*
Oil („ Calcutta)	45*s.* to 50*s.*	30*s.*	77*s.* 6*d.*
Tin („ Singapore)	40*s.* 6*d.*	22*s.*	62*s.* 6*d.*

In autumn the freights from London to St. Petersburg sometimes rise to 45*s.* a ton.

The carriage of the above goods to Moscow, the centre of the internal trade of Russia, is calculated to cost 55*s.* to 83*s.*-4*d.* per ton (33 copecks to 50 copecks per pood†.)

* Inclusive of transhipment at Cronstadt, clearance at Custom House, &c.

† The rouble has throughout been converted at the exchange of 32*d.* The present rate of exchange is 29*d.* to the rouble.

Mr. Skalkoffsky shows that goods of a value of not less than £9-9-0 per ton will alone bear the present cost of carriage by the canal, and that the greater part of the goods carried between India and Europe come under that category, excepting linseed, raw sugar, rice, jute, wood, iron, &c.

The present rate of freight from Bombay to Trieste by the Suez Canal is about £5 per ton, but it will necessarily fall when greater competition comes into play. Although Trieste is further from Bombay than Odessa, yet the freight per steamer to the latter port remains higher on account of the transit dues in the Bosphorus and the greater dearness of coal at Odessa. At the same time, it will always be more difficult to find a return cargo at Odessa than at Trieste.

The following is a complete list of the goods which Russia at present obtains from Egypt, Africa, East Indies, China, Japan, the Indian Archipelago, and Australia :—

Aniseed.
Arrowroot.
Asafœtida.
Camphor.
Cardamoms.
Cassia.
Catechu.
Caoutchouc.
Cigars, Manilla.
Cinnamon.
Cloves.
Clove-heads.
Cochineal.
Cocoa.
Coffee, Mocha.
„ Java.
„ Malabar.
„ Ceylon.
Cotton, Egyptian.
„ Bombay.
Australian copper.
Cubebs.
Dye-woods.
Dates.
Ebony-wood.
Ginger.
Gutta-percha.
Gums, various.
Indigo.
Ivory.
Mace.
Mother-o'-pearl.
Nitre.
Nutmegs.
Nux vomica.
Oil, aniseed.
Oil, cassia.
„ castor.
„ cinnamon.
„ clove.
„ cocoanut.
„ palm.
Pepper.
Plumbago (Ceylon).
Porcelain (Japan and China).
Rice.
Rum.
Rhubarb.
Sago.
Sapan.
Safflower (Bengal).
„ (Bombay).
Sulphur.
Silk, raw.
„ spun.
„ waste.
„ manufactured.
Salammoniac.
Senna leaves.
Spices, various.
Shellac.
Teak.
Tamarinds.
Turmeric (Bengal).
„ (Java).
Tortoise-shell.
Tobacco.
Tea, Canton.
„ Japan.
„ East Indies.
Wool.

The greater part of the goods enumerated in the foregoing list are imported in very small quantities. The principal importations have been under the following heads since 1867 :—

Imported into Russia in 1867, *in* 1868, *in* 1869.

	Poods.*		
Cotton (over the European frontier) ...	2,535,991 ...	2,310,229 ...	2,973,634
Indigo	47,341 ...	47,087 ...	47,030

* The Russian Pood is equal to 36·08lbs. avoir.

	Poods.*		
Silk, raw	5,593 ..	6,035 }	14,807
„ spun...	9,697 ...	8,090 }	
Rice	347,683 ...	385,541 ...	442,835
Sago	1,224 ...	1,944 ...	...
Coffee	407,193 ...	368,177 ...	466,665
Gum	78,541 ...	78,543 }	70,579
Caoutchouc	18,248 ...	30,364 }	
Tin	49,762 ...	50,407 ...	119,073
Pepper	80,155 ...	69,508 }	105,947
Ginger, clove-heads, mace	25,364 ...	16,193 }	
Cloves, cinnamon, nutmegs	12,290 ...	9,238 ...	9,488
Tea over European frontier	465,587 ...	584,785 ...	573,989
Copper	129,819 ...	179,733 ...	181,368
Dye-woods	470,474 ...	404,056 ...	523,322
Nitre	123,397 ...	52,517 }	Included
Gum benzoin	20,845 ...	19,965 }	under
Gall-nuts	16,004 ...	16,006 }	other
Plumbago...	45,785 ...	14,945 }	heads.

On the assumption that one-third of the cotton shown above is Indian, and half of the coffee from Java, &c., and without including some of the minor items, the total weight of Asiatic goods imported into Russia through Custom House on the European frontier is about 40,000 tons, of which a tenth part is brought to ports in the south of Russia.

The trade of those ports, and of Odessa in particular, will, however, be considerably improved by the railway communication now established with Moscow and St. Petersburg.

Mr. Skalkoffsky makes the following interesting observations respecting the goods of Asiatic origin consumed in Russia:—

1. *Cotton.*—Cotton is the most important article of trade between India and Russia. The quantity annually imported on the European frontier of Russia is nearly three million poods (48,000 tons). In 1868 a supply of two and a half millions was drawn from the following countries, *viz.*,—

From England	1,096,130	Poods.
„ Prussia	1,030,206	„
„ Hanseatic towns	52,859	„
„ Austria	12,737	„
„ Turkey	2,916	„
„ United States	1,15,253	„
„ Roumania	128	„

The cotton spinners of Russia purchase the raw material in Liverpool and London through their agents at those ports, but the bulk of the cotton used in Russia, and particularly at Moscow, is imported by the Bremen House of L. Knoop, who have agents at Bombay and New York.

It is chiefly imported at St. Petersburg (1,228,405 poods), but a considerable quantity (848,545 poods in 1868) is brought over the land frontier from Königsberg.

East Indian and Egyptian cotton is now being brought direct to Russia by the Suez Canal route.

The use of Egyptian cotton is very limited in Russia, owing to its price, and particularly from its high quality.

It is used for spinning numbers above 60, whereas the Russian mills chiefly produced the numbers between 6 and 42. It is, however, being more and more used in spinning fine yarns for mixed woollen goods.

* The Russian Pood is equal to 36 08lbs. avoir.

The present price of Egyptian cotton at Moscow is R. 16 to R. 17 per pood (about £6-16-7 per cwt.), or between 1*s.* and 1*s.* 2*d.* per lb.

According to the returns of the British Board of Trade, the cotton imported into Russia in 1867 had been derived from the following countries, *viz.*,—

United States	205,435	cwts.
Brazil	80,920	„
Egypt	3,629	„
East Indies	127,606	„
Other countries	9,880	„
Total ...	427,470	cwts.*

Mr. Skalkoffsky states that the total quantity of Indian or Surat cotton now brought to Russia is 20,000 tons per annum. It is imported from Bremen as well as from Liverpool, and a small quantity comes in by way of Trieste, since the Railway tariff between that port and St. Petersburg has been reduced to 70 copecks per pood (5*s.* 9*d.* per cwt.)

The use of Surat cotton in Russia is constantly on the increase, and keeps pace with the increase in the consumption of all cotton goods that are used by the masses of the people.

The yearly increase in the consumption of raw cotton in Russia is estimated by the manufacturers of Moscow at 3 per cent. It is now an article of prime necessity in Russia, and the slightest fall in its price has the most favourable effect on its consumption.

In 1869 the prices of East Indian cotton at St. Petersburg fluctuated between R. 12¼ and R. 14½ per pood (£5-1-4 and £6-0-0 per cwt.)

In Moscow the prices are generally 50 copecks per pood (4*s.* 2*d.* per cwt.) higher.

The present cost of carrying East Indian cotton to Moscow is about 85 copecks per pood (7*s.* per cwt.), thus:—

To Liverpool *vid* the Cape	30*s.*	to 50*s.*	per ton.
„ „ Suez	60*s.*	to 80*s.*	„
Liverpool to St. Petersburg, 20c. to 25c. per pood ...	33*s.* 4*d.*	to 41*s.* 8*d.*	„
St. Petersburg to Moscow, 35c. per pood ...		58*s.* 4*d.*	„

Taking the freight of cotton from Bombay to Odessa by the Suez Canal at £3 to £4 per ton, and by rail from Odessa to St. Petersburg at 60 to 70 copecks per pood (5*s.* to 5*s.* 9*d.* per cwt.), the cost of carriage by way of Suez will be slightly greater than *vid* the Cape, Liverpool, and St. Petersburg, but the gain in time by the former route will fully make up for the extra cost of carriage. Mr. Knoop, the great importer of cotton, is of opinion that 3,000 to 4,000 bales might at once be imported into Russia each month from Bombay by way of the Suez Canal and Trieste or Odessa, and that as much as a million poods (16,500 tons) per annum will, in all probability, be imported into Russia by that route.†

The East Indian cotton that best suits the Russian market is the saw-ginned Dharwar, both the "fair" and "good" qualities.

There is no duty on the importation of raw cotton into Russia.

* This estimate is probably based on the Russian returns, with which it agrees.

† A great increase has taken place within the last year in the importation of cotton from Central Asia, which is supposed to be capable of producing 3 million poods annually (48,000 tons), *viz.*, Bokhara 2 million poods, Khiva ½ million, independent Khanats ½ million, and Kokan 300,000 poods. The price of raw cotton at Tashkend has this year been R. 5-50 per pood (45*s.* 8*d.* per cwt. at 32*d.*)

2. *Indigo*—Russia makes use of 47,087 poods (757 tons) of indigo each year. It is imported from the following countries :—

England	19,561	Poods.
Prussia	19,933	„
Italy	128	„
Holland	4,476	„
Greece	506	„
France	1,821	„
Austria	668	„

St. Petersburg is the centre of the indigo trade of Russia, as more than 35,000 poods are annually brought to that port.

The prices of indigo were as follows in 1869 :—

AT ST. PETERSBURG—

Bengal	... R.	145	to R.	160	per pood	(£60	to £66-4-0	per cwt.)
Java	... „	135	„	180	„	(£55-17-0	to £74-9-0	„)
Name illegible in original.	„	115	„	125	„	(£47-11-7	to £51-14-5	„)

AT MOSCOW—

Bengal	... R.	138	to R.	170	per pood	(£57-1-9	to £70-8-9	per cwt.)

The Russian import duty on indigo is R. 3 per pood (29*s* 6*d*. (at the par exchange) per cwt.)*

3. *Rice.*—The consumption of rice in Russia is comparatively insignificant (*vide* Table A). The prices were as follows towards the end of 1869 :—

AT ST. PETERSBURG—

Bengal	... R.	2-40	to R.	3-20	per pood	(19*s*. 10*d*.	to 26*s*. 5*d*.	per cwt.)
American	... „	2-25	„	3-50	„	(18*s*. 7*d*.	to 29*s*.	„)

AT ODESSA—

American	... R.	2-20	to R.	2-40	per pood	(18*s*. 4*d*.	to 19*s*. 10*d*.	per cwt.)
Italian	... „	2-60				(21*s*. 6*d*.		„)

The Russian Customs duty on rice is 50c. per pood, or 4*s*. 11*d*. per cwt.†

4. *Coffee.*—Were it not for the competition of tea, coffee might become an article of great importance in a direct trade with the East. Nearly one-half of the coffee consumed in Russia is imported from England.

Notwithstanding a very considerable reduction of the duty on coffee (which is, since 1869, R. 1-50 per pood, or 14*s*. 8*d*. per cwt. at par), its importance is but slightly on the increase. It is mostly used by the German and Finnish population of Russia and by the higher classes. It is also extensively mixed with chiccory.

The prices of coffee were as follows in 1869 :—

AT ST. PETERSBURG—

Best	... R.	13-75	to R.	17	per pood	(113*s*. 8*d*.	to 140*s*. 9*d*.	per cwt.)
Middling	... „	12-75	„	13-75	„	(105*s*. 5*d*.	to 113*s*. 8*d*.	„)
Ordinary	... „	11-50	„	12-75	„	(90*s*. 2*d*.	to 105*s*. 5*d*.	„)

AT MOSCOW—

Round	... R.	14	to R.	15-15	per pood	(115*s*. 10*d*.	to 120*s*.	per cwt.)
Inferior	... „	12-50	„	13-70	„	(93*s*. 5*d*.	to 113*s*. 7*d*.	„)

AT ODESSA—

Ceylon	... R.	10-75	to R.	11	per pood	(89*s*.	to 91*s*.	per cwt.)
Inferior	... „	8	„	9	„	(66*s*. 2*d*.	to 74*s*. 6*d*.	„)

* The present rate of exchange is 29*d*. per rouble or mark, 24 per cent. below par. The above English quotations of the Customs duty should be reduced accordingly.

† Now 24 per cent. less.

Ceylon coffee, of which the excellent quality is well known in Russia, will probably come into Russia in large quantities by the Suez route.

5. *Sago.*—Sago is but little used in Russia. Its average price in Russia is R. 8-30 per pood (68*s*. 8*d*. per cwt.). The import duty is 1 R. per pood (9*s*. 9*d*. per cwt. at par).

6. *Spices.*—The most important of these in the Russian trade are pepper, cloves, cinnamon, cardamoms, nutmegs, mace, ginger, &c. (*Vide* Table A. for quantities imported.) The prices were as follows in 1869 :—

AT ST. PETERSBURG—

Pepper, black	... R.	7	to R.	7-60	per pood	(58*s*.	to 63*s*.	per cwt.)
Cardamoms	... „	120	„	130	„	(£49-13	to £53-15	„)
Cloves	... „	7			„	(58*s*.		„)
Clove-heads	.. „	6	„	7	„	(49*s*. 8*d*.	to 58*s*.	„)
Nutmegs	... „	28			„	(£11-11-8		„)
Mace	... „	26				(182*s*.		„)

AT ODESSA—

Pepper	... R.	7-20	to R.	7-30	per pood	(59*s*. 8*d*.	to 60*s*. 6*d*.	per cwt.)
Clove-heads	... „	5				(41*s*. 5*d*.		„)
Cinnamon	... „	22				(182*s*.		„)

The duties charged on this importation into Russia are as follows :—

Cardamoms, mace, nutmegs, and cinnamon	R.	2-50	per pood	(24*s*. 7*d*. per cwt.)*
Cloves, pepper, ginger, &c.	„	1-50	„	(14*s*. 8*d*. „)

7. *Silk.*—Russia imports only the higher qualities of raw and spun silk. She draws the bulk of her supplies of raw silk from the Caucasus and from Central Asia. Its importation from China and Japan is not expected to increase much. Mr. Skalkoffsky considers that about 6,000 poods (1,980 cwt.) may be annually brought to Russia by the Suez Canal at a cost of £20 per ton. The prices of Chinese silk were as follows at Moscow :—

Floss ...	R.	290	to R.	360	per pood	(£120 to £149 per cwt.)
Organzine	„	450	„	570	„	(£186 „ £236 „)

The import duties in Russia on silk are as follows :—

Silk, raw and waste	50c.	per pood	(4*s*. 11*d*.	per cwt.)†
„ twist, tram, and organzine	R. 5	„	(49*s*. 1*d*.	„)
„ yarn of silk waste ...	„ 4-50	„	(44*s*. 1*d*.	„)

8. *Tin.*—The quantity of tin imported into Russia is small. England supplies almost half the quantity. The prices of tin in 1869 were as follows :—

AT ST. PETERSBURG—

Tin in blocks	... R.	18	to R.	19	per pood	(£7-9-0	to £8-17-0	per cwt.)
„ bars (rods)	„	16	„	17-50	„	(£6-12-5	„ £7-4-10	„)

AT ODESSA—

Tin in bars	... R.	20	to R.	21	per pood	(£8-5-6 to £8-13-9 per cwt.)

The price of tin is rising in Russia. The duty charged on importation is 20 copecks per pood, or 1*s*. 11½*d*. per cwt., at the par rate of exchange.

* At the par exchange; now 24 per cent. less.

† At par; now 24 per cent. lower.

9. The prices of gum and drugs in Russia in 1869 were as follows :—

AT ST. PETERSBURG—

Common incense storax	...	R.	8 to R.	14	per pood	(66*s.* 2*d.* to 115*s.* 10*d.*	per cwt.)
Gum benzoin	...	„	40 „	90	„	(£16-11-0 „ £37-4-9	„)
„ Ammoniac	...	„	8		„	(66*s.* 2*d.*	„)
„ Arabic	...	„	9 „	13	„	(74*s.* 5*d.* „ 107*s.* 6*d.*	„)
Gamboge	...	„	55 „	78	„	(£22-15-0 „ 32-5-0	„)
Copal	...	„	9 „	10	„	(74*s.* 5*d.* „ 82*s.* 9*d.*	„)
Shellac	...	„	12 „	15-50	„	(89*s.* 3*d.* „ 128*s.* 4*d.*	„)
Catechu	...	„	5-50		„	(45*s.* 7*d.*	„)
Kino	...	„	3		„	(24*s.* 9*d.*	„)
Gall-nuts	...	„	13-50 to R. 15		„	(111*s.* 8*d.* to 124*s.* 2*d.*	„)
Camphor	...	„	20-50 „ 23-50		„	(169*s.* 8*d.* „ 194*s.* 5*d.*	„)
Turmeric	...	„	4			(33*s.* 1*d.*	„)

The Import duties to which the above goods are liable are as follows :—

Gums, resins	...	30*c.*	per pood	(2*s.* 11½*d.*	per cwt.)*
Storax	...	R. 1	„	(9*s.* 9*d.*	„)
Gum benzoin	...	„ 4	„	(39*s.* 2*d.*	„)
Gamboge	...	„ 1-10	„	(10*s.* 9*d.*	„)
Gall-nuts	...	„ 5	„	(6*d.*	„)
Camphor	...	„ 30	„	(2*s.* 11½*d.*	„)
Turmeric	...	„ 5	„	(6*d.*	„)
Shellac	...	„ 30	„	(2*s.* 11½*d.*	„)
Catechu, Kino	free.				

10. *Tea.*—Mr. Skalkoffsky advises the merchants of Russia to send their tea to Odessa direct from Shanghai by way of the Suez Canal. By the overland route, through Mongolia, the tea of China takes 14 months to reach the fair of Nijni Novgorod, whereas by the Suez route it could come in 60 to 65 days from China. The sea-borne tea which at present enters Russia is principally shipped from London. Mr. Skalkoffsky does not think that much East Indian tea will enter Russia, where it is almost unknown.

The cost of carriage from Foochoo to Suez is about 95*c.* per pood (7*s.* 10*d.* per cwt.), and that from Suez to Odessa 30 copecks per pood (2*s.* 6*d* per cwt.)

The expense of carrying tea from Odessa to Moscow, inclusive of all charges for commissions, &c., is about R. 1-30 per pood (10*s.* 9*d.* per cwt.) Consequently, the cost of the tea shipped to Odessa from Shanghai is increased by R. 2-53 per pood (21*s.* per cwt.) On the other hand, the cost of carrying it to Moscow by way of Kiakhta is R. 8-80 to R. 12 per pood (£3-12-9 to £5 per cwt.), or 22 copecks to 30 copecks per Russian lb. (8½ to 10½*d.* per lb. avoir.) more than by Suez, independently of the great loss of time by the former route. By way of the Cape, the present cost of carrying tea is as follows :—

Freight, Shanghai to London, £6 to £8 per ton.
„ London to St. Petersburg, 30*s.* „ „
„ St. Petersburg to Moscow, 50*c.* per pood (83*s.* 4*d.* per ton.)†
Total cost, R. 2-40 per pood (£19-16-8 „)

The prices of tea were as follows in 1869 :—

AT ST. PETERSBURG—

Black Congou, 75*c.* to 100*c* per lb (2*s.* 2*d.* to 2*s.* 11½*d.* per lb. avoir.)
„ Souchong, 95*c.* to 100*c.* „ (2*s.* 10*d.* to 2*s.* 11½*d.* „)
Flowery Pekoe, 150*c.* to 200*c.* „ (4*s.* 5*d.* to 5*s.* 11*d.* „)

AT MOSCOW—

Canton (sea-borne) tea, 85*c.* to R. 1 per lb. (2*s.* 6*d.* to 2*s.* 11½*d.* per lb.)

* These duties are calculated at the par exchange. They are now 24 per cent. lower.

† This total does not agree in sterling with the previous items. Mr. Skalkoffsky has probably taken the par exchange in converting sterling into Russian money.

AT ODESSA—

Tea, 1st sort ... 160*c.* to 200*c.* per lb. (4*s.* 8½*d.* to 5*s.* 11*d.* per lb.)
„ 2nd „ ... 120*c.* „ (3*s.* 6½*d.* „)
„ 3rd „ ... 100*c.* „ (2*s.* 11½*d.* „)

The duty on tea, imported on the overland and maritime frontiers of Russia in Europe, is as follows :—

Flowery, green and yellow, R. 22 per pood, or £10-16-3 per cwt.*
Ordinary black and brick tea, R. 15·40 „ or £7-11-3 „ *

Exports.—After passing in review the various articles of commerce that may be brought to Russia by the Suez Canal route, Mr. Skalkoffsky shows that Russia has but few goods to export to the Far East wherewith to pay even for the indigo or coffee which she will import. Among the goods that might, perhaps, be to some extent exported, the following are mentioned :—

1. *Flour and biscuits.*—These find a market even now in Egypt and in the Red Sea. Flour might be exported to the East Indies, as well as maccaroni and vermicelli.

2. *Coals.*—The coal of the Don basin, when reduced in price, which is at present 14 copecks per pood (1*s.* 3*d.* per cwt. at Odessa), might be carried even to Bombay, and sold there at the rate of 55 copecks per pood (4*s.* 7*d.* per cwt.).

3. *Meat, tallow, salt beef, butter.*—All these, Mr. Skalkoffsky thinks, might be exported with profit to Egypt, and even to the East Indies.

4. *Cattle and Horses.*—There is a great demand for Russian cattle at Alexandria.

5. *Candles and Soap.*—Mr. Skalkoffsky thinks that Russian soap and candles might compete in Egypt with similar French and Australian goods.

6. *Ice.*—Large quantities might be shipped to Egypt, the Red Sea, and the East Indies from the Sea of Azoff.

7. *Cordage.*—Russian cordage reaches the East Indies by way of Hamburg and England. If depôts were established at Aden and Bombay, a large trade might be done.

8. *Timber.*—Much required in Egypt, Arabia, and on the shores of the Persian Gulf. Might be exported in large quantities in sailing vessels from Kherson, Taganrog, and the Eastern Coast of the Black Sea.

9. *Kerosine,* made in the south of Russia, might be exported to Egypt, where large quantities of American Kerosine are now consumed. It may become an important article of commerce in the East Indies.

10. *Salt* might be exported to Calcutta from the coast of the Black Sea.

11. *Spirits.*—There is a considerable demand for spirits in Egypt, and Russia can well compete with the spirits distilled in Austria and the United States.

12. *Boots* and *shoes,* cloths, &c., might be sent to Egypt, and particularly for the Army.

13. Brocades and embroidered leather, in great demand in Egypt, Arabia, and on the shores of the Red Sea.

14. Tar, canvas, tow, &c., will be in great demand for ships navigating the canal.

15. Hardware, &c., copperware, cheap fire-arms, stirrups, bits, cast-iron rots, knives, locks, brass coffee pots, dishes, &c., all cheaply made in Russia, would find a large market in the East.

16. *Textiles.*—Mr. Skalkoffsky thinks it possible to send good cotton prints, &c., up the Suez Canal. He quotes the *Times* to show that English

* At the par rate of exchange; now 24 per cent. lower.

cotton goods have acquired a bad reputation in the East, and urges his countrymen to study the Asiatic taste in those goods. He gives no facts or figures in support of his opinion that Russian cotton goods can be exported to India, &c., with profit.*

In summing up this part of his report, Mr. Skalkoffsky says that it would not as yet be safe to reckon upon more than 500,000 poods (about 8,000 tons) weight of Russian goods (irrespective of coal) that might be exported in return for cotton, indigo, &c.

Probable value of exports from Russia.

He thinks that at the utmost the value of the Russian exports by the Suez Canal would not amount to more than 1½ or 2 millions of Roubles (£188,000 or £250,000).

In conclusion, Mr. Skalkoffsky enquires into the position and prospects of the Russian Steam Navigation Company in the Black Sea. He thinks that the Company (being subsidized by the Government) should not be guided by commercial considerations alone, and that it should not, by running steamers, promote the trade of ports in which Russia could have no interest, such as Bussorah and Kurrachee.

It should not look so much to the quantity of goods which it carries as to the duty of extending Russian trade in Egypt on the shores of the Red Sea and in the East Indies.

Russian line of steamers to Bombay.

The Company, he urges, should maintain six steamers (and one in reserve) on the line between Odessa and Bombay. These steamers should not carry Manchester goods, which penetrate into Central Asia and compete with Russian cottons carried there at great cost, nor should they visit Bussorah and Kurrachee, which compete with Russian wools, linseed, &c.

Calcutta, Colombo, Penang, and Batavia are not as yet of sufficient importance to Russian trade and navigation to warrant any Government aid in the establishment of a line of Russian steamers.

Measures recommended for developing trade *vid* Suez and Odessa.

Mr. Skalkoffsky terminates his report by recommending the adoption of the following measures in addition to the establishment of a line of steamers to Bombay:—

1. The reduction of port charges and transit dues.

2. The improvement of the navigation of the Sea of Azoff, which is not, according to Mr. Skalkoffsky, included in the stipulations of the Treaty of Paris, and which should, therefore, he thinks, give shelter to Russian vessels-of-war.

3. The establishment of Bonded Warehouses at Kief and Kharkof.

4. Reforms in the excise laws, which would admit of Russian spirits being exported with greater advantage.

5. A re-arrangement of the rates of coinage, and the classification of goods on Russian railways.

6. The establishment of Russian Branch Banks at Bombay and Shanghai.

7. The laying of a Submarine Cable between Odessa and Constantinople.

8. The immediate appointment of a Russian Consul at Bombay. "He should be a sensible and energetic representative of the merchant class, or a Naval Officer."

9. A careful study of the trade of the Far East.

10. A reduction of Customs duties on goods brought direct from the Far East in Russian ships.

ST. PETERSBURG,
The 1st August 1870.

* In 1867 the number of cotton-spinning and weaving manufactories in the Russian Empire was 48 and 586 respectively, the number of hands employed in those factories being about 97,000.
The value of the cotton goods manufactured in Russia was at the same period about 12 millions sterling.

Printed and published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*

No. 47 of 1870.

SUPPLEMENT TO

The Gazette of India.

CALCUTTA, SATURDAY, DECEMBER 3, 1870.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE ACT OF PARLIAMENT 24 & 25 VIC., CAP. 67.

The Council met at Government House on Friday, the 25th November 1870.

PRESENT:

His Excellency the Viceroy and Governor General of India, K. P., G. C. S. I., *presiding.*
The Hon'ble John Strachey.
The Hon'ble Sir Richard Temple, K. C. S. I.
The Hon'ble J. Fitzjames Stephen, Q. C.
The Hon'ble B. H. Ellis.
Major-General the Hon'ble H. W. Norman, C. B.
The Hon'ble D. Cowie.
The Hon'ble Francis Steuart Chapman.
The Hon'ble J. R. Bullen Smith.
The Hon'ble F. R. Cockerell.

PENAL CODE AMENDMENT BILL.

The Hon'ble MR. STEPHEN moved that the final report of the Select Committee on the Bill to amend the Indian Penal Code be taken into consideration. He said that this Bill had excited, as they were all aware, very considerable discussion; and he proposed to fulfil his promise to enter into a full explanation of the policy of the Government in respect to the measure. He did, in fact, explain briefly the objects of the Bill, when it was introduced into the Council. But the subject appeared to require some further explanation, which he would now proceed to give. Complaints had been made that the Bill was to be passed hurriedly through the Council and at a distance from the centres

of public opinion and discussion. As the fact was that there was really no hurry in proceeding with the Bill, he had proposed that its passing should be deferred, and it had now been more than three months before the public. He did not know that any part of the Bill had attracted the particular attention of the community, with the exception of section five, which referred to the offence of exciting disaffection. He should therefore confine what he had to say to that particular section, but he would first take the opportunity of making one remark on the section immediately preceding it. This section rendered the offence of conspiring to deprive the Queen of the sovereignty of British India or to overawe the Government punishable with transportation for life or for any shorter term, or with imprisonment which might extend to ten years. He had to observe, with regard to that section, that the Committee had thought it right to make the offence of conspiring by criminal force or by the show of criminal force more severely penal than the offence of actually taking part in an unlawful assembly, having for its object the overawing of the Government. The reason was this, that persons who, by conspiring together to bring about such a result, set the whole matter in motion, seemed more criminal and far more deserving of punishment than those who were their mere tools and only took part in such an assembly.

He would now pass to the explanation of the fifth section, which related to the exciting of disaffection. He thought that section had been very severely criticized, or rather it had been severely blamed, for of really intelligent criticism there had been far less than he should have been glad to see. He proposed to state generally the purpose of the section, and how it effected that purpose. The object of the section was this. In connection with the preceding section it embodied, and, he hoped, improved and condensed, the existing English law on the subject to which it related. It might be said of the Indian Penal Code in general, that it was the English Criminal Law freed from the defects which from a variety of causes had affected it. By some means or other the Penal Code as it stood had entirely omitted that branch of the English Criminal Law which consisted of the Treason-Felony Act and the law relating to seditious words and libels. It contained no section by which you could punish conspiracies to wage war against the Queen or deprive her of the sovereignty of British India, unless the conspiracy proceeded so far as to be followed by open acts or actual preparations for rebellion. But besides this, the Code contained no provision whatever with respect to exciting disaffection by speaking or writing, and that, he said, although the contrary had been asserted, was a great defect, and one which ought not to be permitted to exist in any rational system of criminal law whatever. The only means by which offences of that kind could be punished under the Penal Code was by treating them as cases of abetment. It might be said that, if the speaking or writing went the length of advising persons to wage war against the Queen, it was abetment, and those who instigated the commission of the crime were abettors. In some cases it might be so; but in the vast majority of cases he had no doubt it would be otherwise: for the crime of rebellion, speaking broadly, was not a crime committed, like theft, murder, or house-breaking, by one single act, done at one single moment, and proceeding from some one motive. It was, on the contrary, the result of a great variety of feelings excited in various ways, and therefore, if rebellion itself was to be regarded as a crime (and it was needless to argue with those who thought it was not), it was necessary to punish acts which led or were intended to lead to it, even if they did not fall within those narrow limits within which abetment was comprised in common cases. It was necessary to have a wider definition of abetment in the case of rebellion than in the case, say, of murder or theft, because the causes which produced rebellion were wide, and the acts were numerous and were spread over a large space of time. It was on these grounds that he said there was a serious defect in the absence from the Penal Code of all provision for the punishment of offences of this kind.

He now came to the question, whence did this defect arise? When he addressed the Council on a former occasion, and also in the Statement of Objects and Reasons which was before the public, he said that the defect arose from oversight on the part of those who passed the Code. It might be that he ought to have produced at greater length the evidence on which he made that assertion. But he must confess that he felt somewhat aggrieved by the manner in which his assertion had been treated. That the Bill itself should be objected to was natural; that the clauses of the Bill should be the subject of criticism was just what he wished; but when a public man in this country committed himself to a definite statement, the least you could do was to contradict him; this had not been done in the present case. His deliberate statement had been passed over without the slightest notice, and its probability had been discussed upon abstract grounds, as if the fact that he had made it was of no importance whatever. He knew there was a disposition in this country to treat oral evidence with considerable indifference, but he thought an exception should be made in favour of a distinct assertion made by a member of the Government upon a matter regarding which he must be fully informed. It so happened that he had before him information which would convince the public that the assertion was true. It was a letter written so far back as the 7th June 1869 by Sir Barnes Peacock to Mr. Maine, and he would observe, in reference to that date, that, when the late unfounded rumour of disturbances at Allahabad reached England, an English newspaper, *The Spectator*, which was peculiarly well informed on Indian matters, observed, with reference to this Act, that he (MR. STEPHEN) had hastily drawn a Bill for the suppression of seditious language. It appeared from the letter in question that the Bill was under consideration in June 1869, and it was one of the earliest measures to which his attention was directed on his arrival in this country in December last. It had absolutely no connection whatever with the occurrences of the past summer and spring.

The letter of Sir Barnes Peacock to which MR. STEPHEN had referred was as follows. Sir Barnes Peacock said:—

"I have looked to my notes, and I think the omission of a section in lieu of section 113 of the original Penal Code must have occurred through mistake, though I have no distinct recollection of the subject. After the original Code had been carefully revised, the original Code and the revised Code were printed in double columns. I send herewith a copy of the section proposed in the revised Code to be substituted for section 113.

"We had many discussions as to section 113, and I recollect that I thought that the words 'attempts to excite feelings of disaffection to the Government,' &c., were objectionable, and were not much less vague and undefined than the charge in one of the counts in *Reg.* v. *O'Connell*, of 'conspiring to bring into hatred and contempt the tribunals of the country,' as to which, see the arguments in 11 Clarke & Finnelly 195. After the revised Code had been printed, I find that I proposed to amend the section to be substituted for section 113. I send you a copy of my proposed section, as it would have stood if the section in the revised Code had been amended.

"At the foot of that section I wrote 'explanation in margin as amended, *stet*,' that explanation being the explanation as it originally stood to section 113, substituting the words 'within the last clause,' for the word 'disaffection' in the original explanation.

"This leads me to think that, at that time, the clause substituted in the revised Code for section 113 must have been intended to stand, either as originally prepared, or as I proposed to alter it.

"I am strengthened in this view by finding that I have written against the section in the revised Code as I proposed to alter it, 'see new section as taken down by Mr. Morgan' (who was then Clerk to the Legislative Council).

"Looking at this note I feel almost confident that, upon my proposing to amend the substituted section in the revised Code, the Committee, after discussion, must have agreed upon a section to be substituted, and that it was taken down by the Clerk of the Council, and afterwards omitted by some mistake or oversight. I have also got a memorandum 'of publishing false news or reports to induce persons to mutiny or rebel—see Begum's Proclamation,' as a matter for consideration whether the section in the revised Code would meet such a case. I think when you consider section 113 and the explanation, you will find that the explanation very much narrows the definition, and that it will be better to define the offence more accurately than is done by section 113. You will find a good deal upon section 113 in the Second Report of the Indian Law Commissioners on the Indian Penal Code, published in 1847.

"You will also find that Mr. Bethune proposed to substitute, for section 113, two sections, 131 and 132 of his revised Code, upon which Sir Lawrence Peel expressed his views in a letter to the Government of India, dated September 11th, 1851.

"As the report of the Indian Law Commissioners and the letter of Sir Lawrence Peel (with which Sir Arthur Buller concurred generally) may not be at Simla, I have had copies made for you, which I send herewith. Sections 131, 132 of Mr. Bethune's revised Code are set out in Sir Lawrence Peel's remarks. You will bear in mind that 'banishment' is not one of the punishments included in the Penal Code.

"There may possibly be some memorandum in the Legislative Council Office, which may show the precise terms of the section taken down by Mr. Morgan. I am sorry that I cannot throw any further light upon the matter, as I have no note as to the adoption or rejection of that clause. I feel, however, that it was an oversight on the part of the Committee not to substitute some section for section 113."

That, he (MR. STEPHEN) thought, was as strong evidence as it was possible to obtain at the present time for the assertion made by him. He had sent Sir B. Peacock's letter to Sir Walter Morgan, now Chief Justice of the High Court of the North-Western Provinces. Sir Walter said that he had preserved no notes of what took place at the meetings of the Select Committee, and had no recollection of the subject. MR. STEPHEN therefore repeated the statement which he originally made, that there was a section to the present effect, which ought to have been submitted to the Council, and to have been passed, and that it was omitted through a mistake or oversight which it was difficult now to account for. He had referred to the debates which took place in the Council, but there was no reference in those debates to any such provision. The result seemed to him to be clear, that when the Bill was finally passed through the Committee, a section equivalent to the present section was omitted by some mistake. Be that how it might, he proposed to proceed with the subject.

In an event of this kind, what was the duty of the Government? He said that it was to repair the omission, whoever might have been to blame for it. Various objections had been taken to this course. One was that the country was now in so loyal and peaceable a state, and that all things were going on so pleasantly, that no such measure was required. He would answer that that appeared to be the very reason why we should repair the omission, which, upon that view of the case, could not give offence to anybody. Certainly, if no one had the slightest intention of exciting disaffection, no one would have any objection to punish those who at any future time might excite, or be disposed to excite, such disaffection. He must confess that objections of this kind never weighed with him. Any time was good for stopping a gap: stop it as soon as you find it out—in a quiet time if possible, and in troubled times if you must. If you had the opportunity of rectifying mistakes of this nature in a quiet time, it was surely better to do it when the matter could be quietly discussed, than to wait to do it till agitating and exciting circumstances suggested a measure of exceptional severity.

He now had to consider the exceptions taken to the clause. Sir Barnes Peacock had appended to his letter the section as he drew it, and which was proposed to be substituted for one which appeared in the original draft of the Code. A great deal of discussion had taken place on the section now proposed, and after that discussion the Commissioners by whom the Code was drawn adhered to their draft, assigning their reasons, and they had answered the objections, as he (MR. STEPHEN) thought, in a very satisfactory manner. Sir Barnes Peacock's proposed section was in its turn anxiously considered by the Committee whose final report the Council was now considering. The Committee, with all respect to Sir Barnes Peacock, came to the conclusion that it was not an improvement on the original draft of the Commissioners. For one thing, it was very much more severe: the section was as follows:—

"Whoever attempts to excite or to induce, or does anything which he knows to be likely to excite or to induce, the people, or any class or portion of the people, who live under the Government of India, to entertain such feelings of disaffection to that Government or to any

Government in India, as are likely to induce or cause them to resist or disobey the lawful authority of the Government of India or of such other Government, or to abet such resistance or disobedience, or by reason of such disaffection to break the peace or to violate the law, or to abet any such breach of the peace or violation of the law, shall be punished," &c.

The section now before the Council did not make it criminal to do things which people knew to be likely to excite disaffection. To punish the doing of an act which you knew to be likely to produce disaffection might be to punish a man for doing an act which he had a right to do, although it produced disaffection. He could imagine many things which a public man might have a right to do, even at the expense of exciting disaffection, but which, nevertheless, should not be punishable. Then, the section proceeded to describe the kinds of disaffection which it would be a crime to excite. These were such feelings of disaffection as were likely to induce any portion of the people, not only to resist, but to disobey the authority of the Government of India. That was carrying things a very long way, because the mere omission to do what you were told to do was disobedience. The mere non-payment of a tax was disobedience; and to punish a man for doing what was likely to induce people to disobey an unpopular law of any kind was far beyond what in his (MR. STEPHEN'S) judgment was desirable. In short, the Committee came to the conclusion that this clause was considerably more severe than the clause originally drawn by the Commissioners. That clause was greatly discussed at the time, and adhered to after careful discussion; and although he (MR. STEPHEN) was not prepared to say that it was the best that could have been adopted, the Committee unanimously came to the conclusion that the best course was to leave it as the Commissioners had settled it. The clause was somewhat lengthy, but its substance was sound good sense. It provided that anybody who attempted to excite disaffection might be punished; but it insisted on the distinction between disaffection and disapprobation. It expressly provided that people might express or excite disapprobation of any measure of the Government, that was compatible with a disposition to render obedience to the lawful authority of the Government; in other words, you might say what you liked about any Government measure or public man; you might publish or speak whatever you pleased, so long as what you said or wrote was consistent with a disposition to render obedience to the lawful authority of Government. Let it be shown that the matter complained of was not consistent with a disposition to obey the law; let it be shown that it was consistent only with a disposition to resist the law by force, and it did fall under this section. Otherwise not.

He now proceeded to assert that this law was substantially the same as the law of England at the present day, though it was much compressed, much more distinctly expressed, and freed from a great amount of obscurity and vagueness with which the law of England was hampered.

He would shortly refer to a comparison which had been drawn between the section in question and the law of England, in a memorial presented by the British Indian Association—in itself perfectly proper and well expressed, although he disagreed with many of its arguments. That memorial shewed that those who drew it up were under a very false impression as to what the law of England on this subject was. They said:—

"The experiences of England have always been a guide in matters of legislation in India, and it may fairly be asked whether there is any law in force in that country analogous to the one proposed for India? The Committee are aware of none."

They then proceeded to quote at length several passages from a work published by him (MR. STEPHEN) some years since under the title of 'A General View of the Criminal Law of England.' One passage quoted was in these words:—

"In the year 1795 an Act was passed (35 Geo. III, cap. 7) which considerably enlarged the definition of treason, embodying by express enactment, in the old definition, most of the constructions put upon it by Hale and Foster. The definition includes 'any person who shall, within the realm or without, compass, imagine, invent, devise, or intend death or destruction, maim or wounding, imprisonment or restraint of the person of the

sovereign, or to deprive or depose him from the style, honour, or kingly name of the imperial Crown, or to levy war against His Majesty, in order by force and constraint, to compel him to change his measures or counsels, or in order to put any force or constraint upon, or to intimidate, or overawe both Houses or either House of Parliament, or to move or stir any foreigner or stranger with force to invade this realm, or any other His Majesty's dominions, and such compassings, &c., shall express, utter, and declare, by publishing any printing or writing, or by any overt act or deed.' By an Act passed in 1848, on occasion of the violent language used in newspapers and elsewhere by the Irish agitators, this Act was repealed, except in so far as it related to offences against the person of the sovereign; but the other clauses were re-enacted, and their operation was extended to Ireland, though the quality of the offence was altered from treason to felony punishable by transportation."

Upon these passages, the memorial observes :—

"There is nothing in the above to shew the existence of a law similar to the one proposed for India. The Committee need hardly observe that there is considerable similitude between the political relation of India and Ireland to England, though happily the feeling of the people here is one of strong attachment to the British Government; but if the Imperial Parliament has not seen the necessity of restraining the right of speech and writing in Ireland, surely the Indian legislature has much less reason to do so. If the Treason-felony Act, cited by the Hon'ble Mr. Stephen in his book, is deemed sufficient for the safety of the State in Ireland, it may well be deemed equally sufficient for the same purpose in India. The only omission which there was in the Indian Penal Code on the subject has been supplied by section five of the Bill under notice, and the succeeding section is therefore quite superfluous."

The Association would seem not to have understood what they quoted, for the passage which he had read distinctly stated that, to express in writing any "compassing," &c., (which was equivalent to any intention or wish) to compel the Crown by force to alter its measures, or to do many other things, was what is called in England treason-felony, which was much the same as the offence created by the section under consideration.

He would now proceed to state how the law of England to which the Association appealed stood upon this subject. It consisted of three parts. There was, first, the Statute, commonly called the Treason-Felony Act (technically the 11 Vic., c. 12); secondly, the common law with regard to seditious libels; and thirdly, the law as to seditious words. He might observe, in regard to this law, that section 2 of the Penal Code enacted that every person shall be liable "to punishment under this Code and not otherwise for every act or omission contrary to the provisions thereof." Hence, the criminal law which prevailed before the passing of the Penal Code was still in force as to such offences as the Code did not punish. The result might very possibly surprise some gentlemen, especially those who were connected with the Press in the presidency towns, and he would draw attention to it. In the presidency towns, the criminal law of England was still in force, except in so far as it was superseded by the Penal Code. Any person who, within the Mahratta ditch or in Bombay or Madras, wrote anything which at common law would be a seditious libel, would be liable to the penalties which the law of England inflicted, which were fine and imprisonment at least, to say nothing of whipping and the pillory. No doubt the penalties last-mentioned would not now be enforced, but the law still existed, and he (MR. STEPHEN) wished to point out that, so far from enacting a severe law, we were, in truth, doing away to a considerable extent with severe laws. As for the Mofussil, it appeared that the Muhammadan criminal law prevailed so far as it was not superseded by the Penal Code. He had tried to ascertain what the Muhammadan law was. He had found nothing on the subject of seditious libel, but had found much on the subject of rebellion, which, however, was so vaguely expressed, that it might possibly justify the infliction of very strange penalties for sedition and libel.

The first part, then, of the English criminal law was the Treason-Felony, the third section of which was as follows :—

"And be it enacted, that if any person whatsoever after the passing of this Act shall, within the United Kingdom or without, compass, imagine, invent, devise, or intend to deprive or depose our most Gracious Lady the Queen, Her heirs or successors, from the style, honour, or royal name of the Imperial Crown of the United Kingdom, or of any other of Her Majesty's dominions and countries, or to levy war against Her Majesty, Her heirs or successors, within any part of the United Kingdom, in order by force or constraint to compel her or them to change her or their measures or counsels, or in order to put any force or constraint upon or in order to intimidate or overawe both Houses or either House of Parliament, or to move or stir any foreigner or stranger with force to invade the United Kingdom or any other Her Majesty's dominions or countries under the obeisance of Her Majesty, Her heirs or successors, and such compassings, imaginations, inventions, devices, or intentions, or any of them, shall express, utter, or declare, by publishing any printing or writing, or by open and advised speaking, or by any overt act or deed, every person so offending shall be guilty of felony, and being convicted thereof shall be liable, at the discretion of the Court, to be transported beyond the seas for the term of his or her natural life, or for any term not less than seven years, or to be imprisoned for any term not exceeding two years, with or without hard labour, as the Court shall direct."

That long string of words meant in plain English this. Any one who conceived in his heart any one of all these intentions, and who shewed that intention either by any act or any writing (for the provision as to words was temporary), was liable to transportation for life. That section was quoted by the British Indian Association to show that the section proposed was more severe than the law of England. It shewed, in fact, the very reverse, for it shewed that the law of England, though similar to the proposed section, was more severe. The proposed section says, if you excite feelings of disaffection, either by speaking or writing, you shall be liable to punishment; and the law of England says, in substance, that if you yourself feel disloyal towards the Queen and show that feeling by any writing, you shall be liable to punishment. The proposed section did not relate to a man's feelings or wishes, but simply to his writings or words, and the feelings which they were intended to produce in others. But the great peculiarity of the English law of treason was to regard every thought of the heart as a crime, which was to be punished as soon as it was manifested by any overt act. That was the English law as it stood according to the Treason-Felony Act.

He came now to the law of seditious libel; and in the book which was commonly quoted on all subjects connected with English criminal law (Russell on Crimes), there was a very long history about seditious libel compiled from various authorities. The law was very vaguely expressed, and he hoped that some one might soon reduce to a few short sentences the great mass of dicta on the subject.

The following was put forward as the test by which the seditious character of a publication on political subjects might be determined :—

"Has the communication a plain tendency to produce public mischief by perverting the mind of the subject and creating a general dissatisfaction towards Government?".

That was infinitely stronger than anything now proposed. It would make any publication a crime which excited any general dissatisfaction with Government, however reasonable that dissatisfaction might be. The proposed section did nothing of the kind. It said, in so many words, you may create disapprobation as much as you please, so long as it is consistent with a disposition to render obedience to the lawful authority of Government.

He would proceed to notice some of the other objections which had been raised to the proposed clause. He thought that, if those who urged those objections carried them out to their legitimate results, they would see that their objections really proved too much, for they proved, not that the particular section proposed was a bad one, but that there should be no legislation on the subject. It was said that the language of the section was vague; that disaffection was a vague word. He was perfectly willing to admit that that statement had some truth in it. But all human language was more or less vague. In a general way, everybody knew what disaffection was, but in that and every other word of the sort, there must be a good deal of vagueness from the imperfection of the human mind itself. Look, for instance, at such words as "negligence," "morally wrong," "malignantly," "possession," all of which occurred in the Penal Code. They were all more or less vague; but if the law was honestly

administered, it would be found that they really carried out the purposes which they were intended to effect.

The second objection, as to the severity of the punishment, deserved more attention. With respect to that, he had only to say that there were cases known to the law (in English law they were very common) in which persons brought themselves within the same definition with various degrees of criminality. If you looked at any section of the Penal Code and set yourself to conceive possible cases, you would find that, in numberless instances, most severe punishments could be inflicted for very small offences indeed. So strongly had that been felt by the legislature, and so strongly, too, by the framers of the Code themselves, that they had adopted the principle which he (MR. STEPHEN) had always regarded as an extremely sound one, of almost entirely excluding minimum punishments. In a few cases there was a minimum penalty; for instance in the punishments for murder and waging war; but he did not at present remember any other. With those exceptions, in every instance they had left it to the discretion of the person who tried a case to inflict the smallest punishment, imprisonment for a day, or a nominal fine. That was the case with regard to ordinary crimes, such as theft and murder, and other crimes against person and property, but surely there was no crime with regard to which it was so true as the crime of exciting disaffection. He could conceive instances in which a man who had done so was deserving of any punishment which the law could inflict. In 1857, for instance, a man who excited disaffection would have been guilty of a terrible offence. On the other hand, there might be cases where, from the strength of the Government, and the contemptible character of the crime, it might not be desirable to inflict more than a slight punishment. The punishment required did not vary according to the mode in which the disaffection was excited, but it varied according to the state of public affairs, and the position, character and circumstances of the criminal; and for that reason the widest latitude in the punishment for the offence was required. He would observe that, in criticising any provision of law, especially of the criminal law, credit ought always to be given to those who were to administer it for some degree of common sense and moderation. Let him call attention to a law which had originated with his illustrious predecessor—Lord Macaulay—the provisions of the Penal Code about defamation:—

Defamation.

499. Whoever, by words either spoken or intended to be read, or by signs or by visible representations, makes or publishes any imputation concerning any person, intending to harm or knowing or having reason to believe that such imputation will harm the reputation of such person, is said, except in the cases hereinafter excepted, to defame that person.

Section 499 and explanation 4 taken together defined defamation thus—'making any imputation concerning any person intending or knowing or having reason to believe that that imputation will lower the moral or intellectual character of that person.' There were, no doubt, many important exceptions, but that was the general rule, and by section 500 the offence of defamation might be punished by two years' imprisonment and fine.

He (MR. STEPHEN) would ask His Lordship, or any one of his colleagues, whether he could say that he had ever been to a dinner-table at Calcutta, or anywhere else, where that law was not broken; where something was not said by somebody which conveyed an imputation concerning somebody else likely to lower his moral or intellectual character. Why, he saw before him those who were great masters of their pencil, and who had a power of representing persons in a manner which certainly would, by a visible representation or design, lower their moral or intellectual character; and by the Indian Penal Code any person who did this was liable to simple imprisonment for a term which might extend to two years, or to a fine, or to both. In no society in which he had ever been, or which he had ever heard of, would any person escape

punishment if this law were carried out to its full extent, unless, indeed, he were the dullest of mankind. But severe as the law was, it was reasonably administered, and he did not think that either private conversation or public writing on general subjects was, in point of fact, under greater restrictions in India than elsewhere. He mentioned this in connection with the section now under the consideration of the Council, as showing that, in all cases, you must credit the persons who would administer the law with some degree of common sense.

There was another objection which had been urged by the British Indian Association, to which great weight was due. They said that, if legislation once took the shape proposed, there would be no end to malicious prosecutions. This, however, was completely answered by the provision, that no prosecution should be commenced under this section except under the authority of the Government. That shewed that this was a weapon to be used in no case except where the peace of the country was, in the opinion of those who were put at the head of the Government, seriously endangered, and that was a very effectual check to prevent the law being used in an oppressive manner.

Another objection was that the law punished intention, and we were told that the effect of it would be, that people whose intentions were innocent might be convicted. That merely amounted to saying that mistakes might be made; but that was the case with all laws. In the Penal Code, wherever you might refer to it, you would find that the intention made the crime. It was strange that that argument should be used, when it was considered that the Act which declared that the intention of the publisher of an alleged libel should be determined like other questions of fact, had always been regarded as one of the greatest triumphs of the popular cause in England.

There was one last objection to which he would refer in a more general way. It was the general phrase that this was an interference with the liberty of the Press.

Short phrases of this kind involved a surprising quantity of nonsense. He thought that that unfortunate phrase in particular had been made the subject of more fallacies than almost any other sentence. Liberty and law simply excluded each other: liberty extended to the point at which law stopped; liberty was what you might do, and law was what you might not do. To advocate the liberty of the Press absolutely, would be nothing else than to advocate the doctrine that everybody should be allowed to write what he liked. That was obviously absurd. Everybody admitted that personal slander ought not to be permitted: it confused the whole matter. Hence the phrase 'liberty of the Press' was mere rhetoric. It contained no definite meaning whatever. The question was not whether the Press ought or ought not to be free, but whether it ought to be free to excite rebellion. He did not believe that any sane man would say, in so many words, that all people ought to commit any crime whatever, so long as they did not commit overt acts themselves; but no degree of liberty short of this would justify a journalist or any one else in exciting people to commit rebellion. The British Indian Association said:—

"The Committee will be the last persons to believe that the noble Lord at the head of the Government, or his hon'ble and learned colleagues, themselves nurtured under the free institutions of their native land, and some of them, perhaps, once members of the great fourth estate, the claims of which the Committee now advocate, are inimical to a free Press in India; but they will not rule for ever, and it is difficult to say what they or their successors may do in times of political excitement, when passions may be excited by hostile criticisms, and personal feeling may usurp the place of judgment."

With regard to this last observation he had a few remarks to make. He perfectly understood what was meant by some of them "being members of the great fourth estate;" it seemed to say that when he (MR. STEPHEN) was in England he used to write for the newspapers. That was perfectly true,

and he was not ashamed of it. Journalism, when properly conducted, was as honourable a pursuit as any other. He made this personal remark to show that he took a special interest in journalism. He could not imagine a worse policy than to permit journalists to do what they would not permit other people to do. If we wished the Indian Press to be what it ought to be; if we wished it to be conducted honestly and to criticise the proceedings of Government fairly; we could not do worse than treat it like a spoiled child. It would be monstrous to say to any newspapers, Native or English, "We permit you to slander private persons and to excite the public at large to rebellion and massacre, because we want to nurse you up into something great." That was not the way to bring the Press or any other profession to good. We should protect them so long as they did not commit crime, and punish them if they did. It had been said that a few prosecutions would crush the Native Press, and that they were not strong enough to bear the possibility of being misunderstood and punished for expressing intentions which they had never entertained. Such apprehensions appeared to him contemptible. Men must be content to take the risks incidental to their profession. A journalist must run the risk of being misunderstood, and should take care to make his meaning plain. If his intentions really were loyal, there could be no difficulty in doing so. If not, he could not complain of being punished.

Let us consider, however, whether this terrible danger did really exist. He had already shewn what was the law of seditious libel in the presidency towns, and those were the towns in which the great majority of newspapers were published. One paper had said, "if this law passes, we shall never know what we might say and what we might not." If they wanted to see what they might say, all they had to do was to read the English newspapers, which were published under the same law, and they did not write very much as if they were under tyrannical rules. Their liberty included the following items at least. They might refute anything which had been put forward and abuse anybody for bringing it forward; and if they wanted to see more particularly what sort of things they were perfectly at liberty to say, they had only to refer to the files of the English newspapers printed during the last eight months, and read the articles on the Income-tax. Nobody ever said or thought that the authors of those articles were exciting disaffection. If a man was permitted to say everything that had been said about the members of the Government in general, and particularly about his hon'ble friend who was in charge of the Financial Department, and was not satisfied with such liberty, he (MR. STEPHEN) must say that that man had a most insatiable appetite for using strong language. So long as the English papers in this country published what they did publish, about every man, every measure, every principle which they thought it right to discuss, the Native papers need not be under the smallest apprehension that they would fall under the pale of the law. He would appeal to anybody who knew what English public life was, whether any Government which existed in this country was ever likely to bring a newspaper published in this town into Court on a charge of exciting sedition for mere discussion, however violent, personal, or unfair. It was absurd to suppose that anybody here wished to do it, or would dare to do it; it would be altogether repugnant, not only to the law, but to the habits in which English public men were trained up.

So much with regard to what people might say. He would now state what they might not say. They might not say anything of which the obvious intention was to produce rebellion. It might be difficult to frame a definition which would, by mere force of words, exactly include the liberty of saying all that you meant to allow to be said, and exclude the liberty of saying all that you did not mean to allow to be said. But although there was considerable difficulty in framing a definition of the kind, there was none whatever in drawing the line for yourself. Every man who was going to speak, every man who was going to write, ought to know

perfectly well whether he intended to produce disaffection. If he did, he had himself to thank for the consequences of his acts: if he did not, he (MR. STEPHEN) was quite sure of this, that no words which that man could write would convey to other people an intention that he did not intend to express. He (MR. STEPHEN) did not believe that any man who sincerely wished not to excite disaffection ever wrote anything which any other honest man believed to be intended to excite disaffection. You could no more mistake the severity of criticism, or the severity of discussion, for the writing of a person whose object was to produce rebellion or excite disaffection against the Government, than you could mistake the familiarity of friendship for the familiarity of insult. Try to define what it was that made a difference between that neglect of ceremony which you expect from a friend, and that neglect of ceremony which was intended for insult, and you would be unable to express it in words. But no one could mistake the two things, and it was the same with exciting political disaffection.

Finally, he wished to observe that, if any one thought that there was absolutely no occasion for any law of this kind, he ought to look back to incidents which happened not many weeks ago. A man was convicted and sentenced to transportation for life, substantially for committing the very offence at which this section was directed: it was preaching a *Jehád* or holy war against Christians in India. He (MR. STEPHEN) had carefully read the evidence, and supposing it to be true, it proved that this person was in the habit, for weeks and months and years, of going from village to village, and preaching in every place he came to that it was a sacred religious duty to make war against the Government of India. Is that to be permitted, or is it not? If any one really meant to say that it was no crime to go into villages and tell the people that a rebellion against the Government was a sacred duty, he could not argue with such a person. But if such conduct was admitted to be a crime, he would ask any person who objected to the proposed section to frame a better one. Besides the man to whom he had referred, there were eight other men under commitment at Patna, who were charged with very similar offences.

Having referred to this matter of the Wahábí conspiracy, he had just one more remark to make on the subject. We had all seen, in the newspapers published both in England and in India, accounts of the disaffection created by that conspiracy represented in a very formidable manner. It was his belief, however, that although the matter was one which ought not to escape the attention of the Government, and which certainly had been shewn to exist, yet it was the easiest thing in the world to exaggerate its importance and extent. He had read with great pain—and he was very glad to have an opportunity of disavowing and denying—an imputation made in some papers against the general loyalty of the Muhammadan population of India. These imputations were most unfounded and unjust, and he believed that the only class of persons who deserved them were one of those sects of fanatics who were to be found in every creed. Fanaticism was by no means peculiar to the Muhammadan religion. No one who had seen or read much of the world in which we lived, could find it in his heart to speak with disrespect of any of the great religions which had gained the affections of mankind; and he would not say one word against a religion which had preached, with unequalled efficiency, the great cardinal doctrine that lay at the root of all creeds. But it was a common misfortune of all creeds that in every religion there were those who would carry their theories to extreme results, to an extent inconsistent with peace and good order. His Lordship knew better than most of us, that there was no class of people in the world who had greater public virtues of every kind than the Roman Catholics, and there were no better men and women in private life. But there was a way of looking at the Roman Catholic creed which had been adopted by some persons, and which was inconsistent with real allegiance to the civil Government. And the same might be said with regard to the Protestant

religion, although it had been the very life of many European nations, and especially of our own. There had been Protestant fanatics who had been fully as dangerous as Roman Catholics. We had had those who believed that the Pope ought to be able to depose Kings, and we had also had those who preached that there was no King but Jesus, and that they, and they alone, were his representatives. There were some who entertained the opinion that peace between the Muhammadan population and their Christian rulers, however just, was a thing impossible, and that it was a religious duty to make war under such circumstances. He could only say on this subject, that if people would declare war against mankind, they must take the consequences.

It was not with regard to them that he wished to speak. He wished to speak more particularly of the degree in which that doctrine had been rejected by the great body of the Muhammadans. He could not of course enter upon technical questions as to the provisions of the Muhammadan law, but he wished to state as publicly as possible that the Government of this country had no suspicions of the Muhammadan community as such, and knew how to distinguish between the rash opinions of a small and obscure sect, and the sentiments of the vast Muhammadan population, as expressed in the papers he had before him on the subject. He had several letters, but he would only read one: it was the opinion of a large number of Maulavís upon the question of the lawfulness of a *Jehád* in British India, which he would read to the Council:—

"The Mussulmans here are protected by Christians, and there is no *Jehád* in a country where protection is afforded, as the absence of protection and liberty between Mussulmans and infidels is essential in a religious war, and that condition does not exist here. Besides, it is necessary that there should be a probability of victory to Mussulmans and a glory to the Islam. If there be no such probability the *Jehád* is unlawful."

The concluding sentences of the fatwá were to the effect that, if a Christian Government were oppressive and did not afford protection, a *Jehád* would be lawful if there was a probability of success. Upon this he need say nothing more than that it was much like the common European opinion, that when a Government is very bad, the question whether rebellion is justifiable is mainly a question of prudence. In the present case this question did not arise. The substance of the first part of the fatwá was that a *Jehád* was unlawful against a Government which afforded, and by people who had accepted, protection. Whether this opinion was really contained in the Korán and the traditions, was not for him to say; but this he would say most emphatically, that the common good sense and common good feeling of the whole human race would justify it. He should be sorry to believe that the religion of a large portion of mankind could teach the horrible doctrine that it was lawful for a man to pretend to live in peace and good terms with his rulers, to submit to them, to accept offices from them, and to nurse in his mind a fixed intention of breaking out into massacre and plunder against them on the first favourable opportunity. He was glad to believe that this was repudiated by orthodox Muhammadans. The doctrine which the gentlemen in question asserted to be the true doctrine of their religion was that, where protection was given and accepted, there arose a contract between the sovereign and the subject which it was forbidden by every law of God and man to break. If liberty and protection formed a contract, no subject ought to rebel against his sovereign so long as the sovereign discharged his part of the contract; and to break that contract was not only to commit a great crime, but also a most grievous sin. That was a doctrine which certainly commended itself to the reason of the whole human race. It rendered it possible and natural that loyalty should exist, and would, he trusted, continue from generation to generation to bind together the Queen of England, her representatives in this country, and the vast body of her loyal Muhammadan subjects.

The Motion was put and agreed to.

The Hon'ble MR. STEPHEN also moved that the Bill as amended be passed.

The Motion was put and agreed to.

INDIAN REGISTRATION BILL.

The Hon'ble MR. COCKERELL introduced the Bill for the Registration of Assurances, and moved that it be referred to a Select Committee with instructions to report in two months. He said that as, besides the Registration Act of 1866, there were two other enactments appertaining to registration on the Statute-book, the incorporation of the substance of these outlying enactments with the main law fell within the general consolidation scheme, and fresh legislation on the subject must have been undertaken for that purpose. Such legislation was further needed to provide for the exemption from compulsory registration of title-deeds granted by the Inám Commissioner in the Madras Presidency, and to extend the operation of the law to territories in which it was not at present in force.

Moreover, there were certain doubtful points in the existing law regarding which the Civil Courts had pronounced judicial decisions, and questions had arisen from time to time which had been noted as requiring the attention and consideration of the legislature when the occasion for reviewing and amending the law should arise.

The new system of registration had now been in operation, at least in the provinces into which it was first introduced, for the last five years, and the undoubted success of the measure emphatically testified to the wisdom and ability with which the law regulating that system was framed.

The steadily progressive increase, year by year, of the number of instruments registered, which the statistical returns of the Registration Department exhibited, marked the growing popularity of the system. The total number of registrations effected in the last year of report was upwards of 800,000, more than half of which occurred in lower Bengal and the North-Western Provinces. In those territories, the progressive rate of increase had been such, that the number of instruments registered during the latest year of report was considerably more than double that of the first year,—a result which was probably mainly due to the energy and ability of the officers directly charged with the supervision of the local administration of the Registration Department.

To give an idea of the magnitude of the transactions publicly recorded under the present system of registration, he might mention that the estimated value of the property affected by documents registered in 1869-70 was, in lower Bengal, about $8\frac{1}{2}$, and in Madras $7\frac{1}{2}$, crores of rupees.

The returns indicated a remarkable variation of the relative proportions of compulsory and optional registrations.

In the Panjáb notably, and also in the North-West and Central Provinces, the optional registrations largely preponderated, whilst in Madras and Bombay especially, and, in a less degree, in lower Bengal, Mysore and Coorg, the directly opposite result was obtained. This was, no doubt, partly due to the larger number of transactions, forming the subject of optional registration, which presumably took place in and about the great trading marts of Northern and Central India, but it was also, he thought, in some measure to be accounted for by the greater facilities afforded for registration through the lower minimum rate of registration-fee and, the more accessible registering agency which obtained in the provinces in which the excess number of optional registrations prevailed.

The rates of fees charged for registration under the different local administrations varied not only in amount, but also in regard to the principle on which the amount was fixed. In Bengal one *ad valorem* rate obtained for both classes of registrations, whilst in most of the other provinces, with the view of encouraging optional registration, a preferential rate was accorded to that class. He thought the equity of such an arrangement open to question.

Generally, too, it might be said that the average rate of fees was too high even in Bengal proper, where it was lower than in any other province, and some portion of the surplus which now annually accrued from the operations of the Registration Department should certainly be devoted to making registration cheaper, if its utmost practicable development was to be looked for in the future.

At present, the average fee for each registration ranged from one rupee and nine annas, in Bengal, to upwards of two rupees and eight annas, in Madras and Bombay.

Still more essential to the promotion of the successful working of the system was the easy accessibility of the registering officer, and there was doubtless much room for improvement in this respect.

He would not take up the time of the Council by going into any detail of the results of the working of a special registration-agency. It would be sufficient to say that it had everywhere been found eminently successful in inducing registration.

Experience had shown that the multiplication of registration-offices, the devotion of the *exclusive* services of Registrars and Sub-Registrars to the work of registration, and the maintenance of an active supervision had, wherever they had been in operation, been attended by a great increase in the number of registrations, both as regards instruments the registration of which was optional, and those which were by the law declared to be invalid unless registered. So, also, every temporary curtailment of registering agency,—he referred to the case of lower Bengal, where an attempt to place two or more registration-offices under one Sub-Registrar, on the plan of the Small Cause Court administration system, had been made, but was now abandoned—had been followed by a corresponding decrease in the number of registrations.

To promote the development of the registration-system, a larger expenditure was required, and it seemed to MR. COCKERELL that some legal provision was wanted to enforce this. At present, a large surplus accrued yearly to the general revenue. That surplus, reckoned from the commencement of the registration-scheme up to the current year, aggregated no less a sum than thirteen lákhs of rupees. It was never intended that the registration law should be worked so as to make it a source of public revenue. If the Department paid its expenses without any charge, or even with only a small charge, on the public revenue, the anticipations of the projectors of the system would, as regards its financial aspect, have been fully realized.

He was strongly of opinion that greater latitude must be given to the local administrations in the expenditure of the income of the Department for the purpose of increasing its working efficiency.

Much economy of labour might be effected by the relaxation of some of the stringent provisions of the existing law in regard to the forms and records to be prepared and kept in the different registration-offices.

In the interests of the public, it was important to refrain from imposing any legal obligation the public advantage to be derived from which was not commensurate with the expenditure of labour entailed by it, and viewed in this light, Part XI of the Bill certainly went too far.

The number of indexes required to be kept under the present law might be substantially reduced without the smallest sacrifice of public convenience. All that the law need make obligatory on registering officers was the keeping up indexes Nos. I and II. The choice of such subsidiary records as might serve to assist the search for registered documents and the identification of the property affected by them, might be advantageously left to the discretion of the Registrar General, subject to the general control of the Local Government.

The provisions of sections twenty-one, seventy-three and seventy-six, in regard to the transmission of copies, called for amendment. Much unnecessary labour was imposed on registering officers by the present requirements of the law in this matter.

Greater facility for registration would be afforded also by some relaxation of the provisions of section twenty-nine, in regard to the place where an instrument was to be presented for registration. It frequently happened that the convenience of all the parties who had to appear before a Sub-Registrar would be met by power to register at places where no portion of the property forming the subject of the deed requiring registration was situated within the local limits of that officer's jurisdiction. Instances had come to notice where, to meet the conditions of the law, a fictitious tree or strip of land had been inserted in the deed, to make it registrable at a particular office to which it best suited the convenience of the parties to the transaction to take the document for registration.

The Bill now before the Council provided for the consolidation of the existing law and its extension to British Burma. It also proposed—(1*st*) to exempt from compulsory registration Inám title-deeds granted by the Inám Commissioner in the Madras Presidency; (2*nd*) to render compulsory the registration of written authorities to adopt; (3*rd*) to extend to Sub-Registrars the power of registering wills, receiving sealed covers for deposit, and instituting, without reference to the District Registrar, criminal prosecutions; and it further contained amendments of the law on a very few points in regard to which it had not worked satisfactorily, and on others where a certain degree of ambiguity as to the intentions of the legislature had been suggested by the decisions of the High Courts.

One of the two main objects of the registration law was the prevention of fraud, in regard to the devolution and transfer of real property, theretofore so prevalent in this country.

There was no form of transfer of property which was attended with so much risk of fraudulent practices as that which arose out of the law of adoption. Where the authority to adopt was given verbally, there was no means of protecting the person injured by the falsely propounded authority, but the registration law did afford the means of reducing the risk of fraud where the authority was in writing.

It might be said that the written authority to adopt was in the nature of a testamentary document, and should not be treated differently from a will, the registration of which was allowed to remain optional.

But wills, in Bengal at least, where they were to be found in far greater numbers—as the registration statistical returns clearly proved—than in other parts of India, were, by the recent extension of the Indian Succession Act, already subject to the test of probate, and it might reasonably be expected that the testamentary portion of the Succession Act would before long be extended to all places in which the practice of will-making was shown to exist.

The extension of the power of registering wills, which by the existing law was vested in Registrars only, to Sub-Registrars, had been rendered especially necessary, to prevent inconvenience to the public from the creation of special District Registrars, and the consequent reduction of the number of District Registrars' offices. It might be doubted, however, whether the proposed permission to deposit sealed covers at the offices of Sub-Registrars would work well; for, having regard to the expense which such a provision would entail, it would be hardly feasible to supply fire-proof boxes for the safe custody of those covers to all registration offices, and there would be a difficulty in carrying out the provisions of section forty-five as to the identification of the persons by whom such covers had been originally deposited.

Section thirty-six of the Bill required the appearance of all the parties to an instrument presented for registration before the registering officer within the period allowed for the presentation of the instrument. The peculiarity of the existing law was, that it provided for the presentation of an instrument only within a certain period, and placed no limit on the time within which the registration, if admissible, must take place. The limitation as to presentation

might serve the purpose of guarding against fraud, but the completeness of the record of title was impaired by the want of some restriction as to the time within which the registration must be effected.

Connected with this subject was the alteration contemplated by section fifty-seven. The present practice was to enter a copy of any instrument presented for registration in the register at the time of such presentation. This system, obviously in the case of instruments not eventually admitted to registration, not only involved useless labour, but also had the effect of impairing the correctness of the record; and it was therefore proposed to substitute for it the provision of the Bill; unless, however, some limitation was applied to the completion of the registration of an instrument, the practice of transcribing it at the time of presentation could hardly be dispensed with.

Sections forty-one and forty-two of the Bill were framed to meet the present difficulty in securing the registration of all decrees of court affecting the title to immovable property, and in the realization of the fees due on such registrations: the amendments of the existing practice propounded in these sections were in accordance with the suggestions of the High Courts.

Many officers doubted the expediency of maintaining the requirements of the law in regard to such registrations.

It was found impracticable to provide for the registration of decrees and orders of revenue courts and officers, and the theory of working the registration law so as to maintain a complete record of title to real property in the archives of a single Department, was held to be incapable of attainment.

It became then an important question for the consideration of the Committee to which this Bill might be referred, whether the gain to the object of completeness of record was commensurate with the expenditure of time and labour which the maintenance of this class of registrations, numbering about 85,000 per annum, involved.

The case for the maintenance of the provisions of section forty-one was certainly stronger than it was as regards section forty-two, but he was of opinion that both sections might with advantage be omitted.

Of the amendments suggested by the rulings of the High Courts, the most important was to be found in sections forty-eight and forty-nine. Section forty-eight of Act XX of 1866 declared, broadly, that all instruments (excluding wills and authorities to adopt) duly registered, and relating to any property movable or immovable, should take effect against any oral agreement or declaration relating to the same property.

The High Court of Calcutta held, in the case of *Selam Sheikh* v. *Bydonath Ghatuk*, that this provision could not be intended to apply where the parol contract was supported by the transfer of possession, and could not be reasonably construed as entitling a registered deed of conveyance to prevail against a title founded on such possession.

An attempt was made in the Bill to settle this point, by drawing a distinction, such as was believed to be in accordance with the general policy of the registration law, between immovable and movable property, applying the words of the existing law in their widest signification to the case of the former class of property, and narrowing them to the Court's construction as regards movable property.

The question would require the careful consideration of the Select Committee. He was not prepared to say that he thought this provision of the Bill offered the best solution of the doubt. It seemed to him that, even in the case of immovable property, a registered deed could only be regarded as conferring a *primâ facie* paramount title, and that it could not ultimately prevail against possession, fortified by proof of adequate consideration having been given for such possession.

In section fifty-three, an amplification of the provisions of the corresponding clause of the Act of 1866 had been made, embodying the rulings of the Madras High Court in the cases of *Pudiyaporayil Mamy* v. *Madakarath Amman Kutti*, and of *Subbuviyan petitioner*, to the effect that the remedy allowed by the law on this subject could be enforced only by or against the actual parties to the specially registered contract.

To section seventy-five, a new proviso had been added in the sense of the ruling of the High Court of Bombay in the matter of the Will of *Nagin Dass*, authorizing the registering officer to surrender a sealed cover deposited under section forty-four, when such cover was called for by a Civil Court for the purpose of probate.

This, however, left the case of a Will deposited under a sealed cover in a registration office, and required to be produced in a Civil Court as evidence, unprovided for.

The Bill contained other amendments of the existing law on minor points, to which it was unnecessary to make any special reference at the present time; but there was one important alteration of the law, not included in the Bill as it now stood, which was strongly advocated in some quarters, and especially by the Government of the North-Western Provinces.

At present, the registration of deeds affecting title to immovable property not exceeding one hundred rupees in value was optional. This exception to the general rule regarding instruments affecting that class of property was probably intended to prevent the conditions of the law working harshly in the case of transactions of a petty character; but as, in this country, the mass of transactions did partake of that character, the effect of the exception was to check very materially one of the chief objects of the registration-system, the attainment of a complete record of title to immovable property.

The very large number of documents of this class which were now registered, though their registration was optional, pointed to the conclusion that to make such registrations compulsory would entail no hardship or serious inconvenience, whilst the gain to the completeness of the record of title to immovable property, which the registration-system was specially designed to afford, would be very great.

Some exception would of course have to be made in respect of leases for fixed periods not exceeding one year, or the cost of registration might be found to exceed the value of the occupancy; but if the registration-charges were reduced as they ought to be, and the facilities for registering increased by improved agency, in no other cases could the application of compulsory registration be reasonably objected to.

Since the Bill was drawn a proposal had come up to extend the operation of the law to Oudh.

In that province, a rough system of voluntary registration had been in force for the last ten years. In some respects that system had worked well, but the advanced requirements of the province were now thought to call for the more elaborate machinery which was elsewhere in operation, and as the local administrative officers were generally in favour of extending the law, which the Bill made applicable to all other parts of British India, the expediency of obtaining a general uniformity of system through such extension could hardly be questioned.

The Motion was put and agreed to.

PRISONS' ACT EXTENSION (COORG) BILL.

The Hon'ble MR. CHAPMAN moved for leave to introduce a Bill to extend the Prisons' Act, 1870, to Coorg. He said that there was no law in the province of Coorg to regulate prison-management and discipline. At the request of the

Chief Commissioner, it was proposed to introduce Act XXVI of 1870, which was the latest enactment on the subject.

The Motion was put and agreed to.

COMMITMENTS FROM ANDAMANS BILL.

The Hon'ble MR. CHAPMAN also moved for leave to introduce a Bill to authorize the committal of European British subjects by Courts in the Andamans to the High Court at Fort William. He said that European British subjects, who might commit offences at the Andamans not punishable with death and not within the jurisdiction of a Justice of the Peace, were, under Act XXI of 1863, section 41, committed to the Recorder at Maulmain. As there were now no regular means of communication between the Andamans and British Burma, it would be more convenient to have such offenders tried by the High Court at Calcutta.

The Motion was put and agreed to.

CHAUKIDARI ACT EXTENSION BILL.

The Hon'ble MR. CHAPMAN also moved for leave to introduce a Bill to authorize the extension of the Chaukídárí Act (XX of 1856) to places where there is no Jamadár of Police. He said that, at present, the Chaukídárí Act could only be introduced into towns and places where there was a Government Police-station under the charge of an officer of rank not lower than that of a Jamadár. It was proposed to remove this restriction and to empower the Local Governments to apply the Act to all towns. The exemption in favour of agricultural villages would remain unaltered. The proposal had originated with the Government of the North-Western Provinces, and had the approval of the Governments of Bengal and the Panjáb.

The Motion was put and agreed to.

The following Select Committee was named:—

On the Bill for the Registration of Assurances———The Hon'ble Messrs. Strachey, Stephen, Chapman and Bullen Smith and the Mover.

The Council adjourned to Friday, the 2nd December 1870.

CALCUTTA,
The 25th November 1870.

WHITLEY STOKES,
Secy. to the Govt. of India.

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.

STATEMENT OF IRRIGATION OPERATIONS OF FUSL KHURREEF IN THE PUNJAB UP TO 30th SEPTEMBER 1870.

Irrigation Operations of Fusl Khurreef of 1870-71 up to 30th September 1870.

CANAL.	WATER DISTRIBUTED DURING SEPTEMBER 1870. Depth in Canal at Regulating Gauge. Full Supply.	Actual throughout September.	Gross Consumption C. Ft. per Second. Estimated Full Supply c. ft. per square.	Actual average throughout September.	NAVIGATION REQUIRED CANAL. Principal Items of Traffic. Down.	Up.	LAND IRRIGATED (APPROXIMATE). Zillah.	Acres.	RAINFALL. During month	Average Inches.	CHIEF CROPS (APPROXIMATE). Name.	Area in Acres.	REMARKS.
Barrée Doab Canal. 1st Division Main Branch, Lower	4·9	2·84	...	695·38	...	...	Goordaspoor	12,064	4·54	1·89	Cotton ...	8,138	403·74 cubic feet per second passed down the escapes, being in excess of the requirements for irrigation.
1st Division Lahore Branch	4·6	1·90	...	427·38	...	...	Umritsur ...	26,368	5·94	3·337	Rice ...	21,277	
2d Divn.	3·3	2·50	3073·6	469·49	...	...	Lahore ...	33,980	...	...	Sugarcane..	6,521	265·16 cubic feet per second passed down the Boodha Khera escape.
							...	...	...	...	Others ...	36,476	
Total B. D. Canal	...	...	3073·6	1592·25	...	...	...	72,412	...	...	...	72,412	
Western Jumna Canals. Kurnaul Division	4·33	3·46	...	71·6	...	...	Umballa ...	2,785	2·79	4·36			
Delhi ...	4·4	3·00	...	545·3	...	...	Kurnaul ...	38,614	2·90	5·27	Cotton ...	76,993	In comparison with the statement of irrigation up to a similar date of last year, we find the approximate decrease on the Baree Doab Canal 13,992 acres, and on the Western Jumna Canal 3,491 acres. The reasons for the decrease were given in June's statement.
Hansi ...	8·8	8·1	...	782·0	...	...	Delhi ...	37,424	...	0·4	Rice ...	28,573	
Do. Bulla Head ...	8·4	7·5	2546	248·0	...	...	Rohtuck ...	37,857	...	0·6	Sugarcane..	33,787	
							Hissar ...	23,835	...	...	Others ...	12,420	
Total W. J. Canals	...	...	2546	1646·9	...	...	Jheend ...	11,168					
Inundation Canals. Upper Sutlej Division	...	...	...	...	...	...	Bikaneer ...	90					
Lower Sutlej and Chenab ...	...	...	...	...	...	...	...	151,773	...	...	Detail not obtainable for want of establishment.	151,773	
Indus Canals ...	...	...	...	...	...	...	Lahore ...	5,000	...	...			
Total Inundation Canals ...	...	...	...	...	...	...	Montgomery	55,000					
Delhi and Goorgaon Works ...	...	...	...	...	...	...	Mooltan ...	155,942					
GRAND TOTAL ...	...	...	...	...	...	...	Dera Ghazee Khan ...	175,000					
							...	390,942*	...	...	...	390,942*	*It is probable that a certain amount of *Kubbee* irrigation is included in these figures. This statement completes the returns of irrigation operations of the Province during the Khurreef, 1870-71.
							...	...	...	...	...	...	
							...	615,127	...	...	...	615,127	

CAMP LOODIANAH,
The 14th November 1870.

W. BROADFOOT, *Lieut., R.E.,*
Asst. Secy. to Govt., Punjab, P. W. D., Irrign. Branch.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

ACCIDENT TO STORE-ROOM OF GUN-CARRIAGE FACTORY IN COURSE OF CONSTRUCTION AT ALLAHABAD.

No. 1294-5 B. M.,—dated 30th November 1870.

RESOLUTION—By the Govt. of India, P. W. DEPT.

Read the following :—

Telegram to Colonel Alexander, dated 3rd June 1870.

From Superintending Engineers, 3rd Circle, North-Western Provinces, No. 1774, dated 1st July 1870. No. 1

" " " No. 1809, dated 5th July 1870.

Public Works Department Resolution Nos. 681—85 B.—M., dated 6th July 1870.

Telegram to Lieutenant Governor, dated 5th July 1870.

From Government, North-Western Provinces, No. 1998, dated 2nd July 1870 and enclosures.

Public Works Department Resolution No. 686 B.—M., dated 7th July 1870.

From Government, North-Western Provinces, No. 1618, dated 14th July 1870.

From Government, North-Western Provinces, No. 2403 A, dated 13th August 1870 and enclosures.

RESOLUTION.—At the end of June last, the attention of His Excellency the Governor General in Council was drawn to a report in the public papers that an accident, accompanied by loss of human life, had occurred to one of the buildings in course of construction at the Gun-carriage Factory at Allahabad.

2. His Honour the Lieutenant Governor being at the time absent from Allahabad, the Superintending Engineer at that place was called upon for an immediate report, which was shortly received. From this report it appeared that the accident was of so serious a nature, that the Governor General in Council considered it necessary to appoint a special Committee to investigate the matter fully. The Committee was composed as follows :—

PRESIDENT :

MAJOR-GENERAL TRAVERS, V. C.,
Commanding the Allahabad Division.

MEMBERS :

COLONEL J. C. ANDERSON, C. S. I., R. E,
Officiating Inspector General of Irrigation.

MR. R. M. BRERETON, *Chief Engineer, G. I. P. Railway, North-East Extension.*

The last named gentleman having consented to undertake the duty, his services were placed at the disposal of Government, for the purpose, through the courtesy of the Agent of the Railway.

3. The Committee were directed to report, through the Government of the North-Western Provinces, on the causes which had led to the catastrophe, and on the responsibility of the several Officers of the Public Works Department, Contractors, or others, in any way connected with the design or construction of the building.

4. The Committee were also instructed to examine all the other buildings of the new Factory, particularly those that would be subject to the vibration caused by machinery in motion, and to report on their state.

5. The Committee were further directed to inspect any buildings at Allahabad constructed lately, wholly or in part, by the same agency (whether Officers of the Public Works Department, or Contractors) as that employed on the building which had failed, and to examine and report separately on the general condition of the new soldiers' barracks.

6. The appointment of this Committee was communicated by telegraph to the Lieutenant Governor on the 5th July.

7. The Committee assembled at Allahabad on the 13th July, and submitted their report on the 22nd idem to the Lieutenant Governor, by whom it was sent to the Government of India, with a Minute by himself and a Note by the Chief Engineer.

8. The primary object of the appointment of the Committee will first be considered.

9. The building to which the accident occurred was intended for a store-room, and consisted of three compartments, each compartment being 170 feet long × 45 feet wide, the width being divided by a longitudinal arcaded wall down the centre, having piers 2½ feet square with arches of 14½ feet span and rise of 4 feet, the springing of the arches being at a height of 13 feet above the floor-level.

10. The walls, piers and arches were all of brick-work throughout, as were also the foundations.

11. The roof was flat and composed of sâl beams 13 inches × 9 inches placed 3⅗ feet apart from centre to centre, resting on the outer and centre walls, and supporting stone slabs 2 inches thick, which were covered by terracing 4 inches thick.

12. The Superintending Engineer estimated the weight of the roof covering, allowing for absorption and the weight of work-people employed, at about 120 lbs. per foot superficial.

13. At the time of the accident (the 23rd June) the west compartment had been roofed in; the centre compartment was about three-fourths covered; and the walls of the third compartment were finished, but the roofing of it had not been commenced. Twenty-two work-people were employed in terracing the centre compartment when the whole roof of this compartment gave way, owing, it is supposed, to the failure of the centre wall, and 18 out of the 22 work-people who had been on the roof fell with it, and had to be extricated from the ruins. Of these 18, four were reported to have died by the 1st July, and seven others to have sustained serious injuries.

14. The walls of this building were begun in February 1868 and finished in September of the same year, but were left unroofed

till February 1870, owing partly to delay in the supply of timber, and partly to the reduction made in the Public Works grant.

15. There appears, from the report of the Committee, to be no doubt that the failure of the centre wall was the cause of the accident. The Committee further report that the brick-work of this particular building in question, and, indeed, of all the other buildings of the Factory, so far as the quality of the bricks and their setting is concerned, is excellent; that the pointing of the joints is particularly good and clean, but that the mortar used is of the most inferior description, and that it is to the worthless character of this mortar that the failure of the wall is mainly to be attributed.

16. The weakness of the walls, due to their construction with bad mortar, was, in the opinion of the Committee, increased by the exposure of the walls to the rains of 1869, which, had the mortar been of good quality, would not have been in any way the cause of injury. As a minor cause, which might possibly have contributed, in some degree, to the catastrophe that occurred, the Committee mention that the terracing, being in progress from one side only of the compartment, might have exercised a side thrust on the central longitudinal wall.

17. The bad quality of the mortar was not confined to the one building, but was observable in all the other buildings of the Factory, including sheds for machinery to be driven by steam-power and a chimney-shaft 123½ feet high.

18. There was no sign of settlement in the foundations of any of the buildings, though the Committee turned their particular attention to this point; and as regards the designs, the Committee, referring to the Factory buildings generally, say they consider the whole to be very good; one or two points are mentioned in which improvement is considered by them to be possible, but their suggestions are unimportant, and refer chiefly to the machinery sheds.

19. As regards the mortar, it is reported that it was composed of kunkur burnt with oopla (cow-dung cakes) and soorkhee (pounded brick,) the specified proportions being one part of lime to one part of soorkhee. From evidence adduced, however, there can be no doubt that the lime, which was burnt by a Contractor near the site of the works, was delivered with a large admixture of wood-ashes and the refuse of soap-boiling operations, in both of which materials, it seems from the Committee's report (which has been fully confirmed by a subsequent enquiry made by the Magistrate in conjunction with the Superintending Engineer) a regular trade had long been carried on.

20. But in whatever way the deterioration of the lime was effected, it is clear that the mortar was quite unfit for the purpose for which it had been used, for an analysis made by Assistant Surgeon Hamilton, R. A., of specimens taken at random from one of the walls, showed that it contained only 6 per cent. of lime.

21. Subsequent analyses made by Dr. Murray Thomson also showed that the mortar contained a large proportion of alkaline salts, and that the percentage of lime was very small.

22. The analyses confirm what was evident from an inspection of the mortar, and the Governor General in Council is satisfied that the accident may be attributed almost entirely, if not altogether, to the bad quality of the mortar. It remains, therefore, to enquire in what degree the responsibility for the use of the bad mortar rests on each of the individuals concerned in the execution of the work, both in the building which fell, and in the other buildings of the Factory.

23. The person in immediate charge of the construction of the buildings in question was Supervisor Bartram, who is a Fitter by trade, and who passed out of the Roorkee College and entered the Public Works Department as Overseer in 1862. He appears to have been first employed on the Deccan Road, where a number of masonry bridges were erected under his superintendence, the experience gained on which should have rendered him thoroughly acquainted with the qualities of mortar.

24. In his evidence before the Committee, he stated that he did not consider a specimen of mortar which was shown to him to be good, and that he had, on various occasions, rejected mortar brought for use on the works. Still the fact remains that the building which failed, and many others in the Factory were built under his immediate superintendence with absolutely worthless mortar.

25. His length of service and practical experience on masonry works leave him no excuse for ignorance as to the quality of the mortar he saw daily used, on an extensive scale, on the works under his charge. The Committee and the Lieutenant Governor consider that he has proved himself thoroughly unfit for the place he holds.

26. The Governor General in Council is of opinion that Supervisor Bartram has failed in the proper discharge of one of the simplest, yet most important, of the duties assigned to members of the Upper Subordinate Establishment, and deems it necessary to remove him from the Public Works Department. His removal should be ordered by the Local Government.

27. The Executive Engineers in charge of the works were Major W. Jackson of the Bengal Staff Corps from the time the buildings of the Factory were commenced in March 1867, until the 5th February 1870, when he made over the charge to Mr. R. J. Clarke, the present Executive Engineer.

28. Under the former Officer, therefore, the whole of the work which has failed was carried out, and also the majority of the other buildings in which bad mortar was used.

29. Both the Committee and the Lieutenant Governor bear testimony to this Officer's diligence, to his almost daily attendance at the works, to the general good quality (with the one important exception of the mortar), of the brick work executed under his orders, to the pains and forethought evinced in his correspondence and specifications, and to his unquestionable anxiety to discharge his duties to the best of his ability.

30. The Lieutenant Governor, however, has stated that Major Jackson is wanting in the qualities essential to a successful service in the Department of Public Works, particularly in energy and power

of control, and that he trusted too much to his subordinates. It may be further noticed, that the unfitness of this Officer, for the important post of Executive Engineer, is borne out by the unskilful manner in which, as brought to light in the papers submitted, he designed an ordinary scarf for a beam; the error made was a very flagrant one evincing ignorance of the elementary principles of carpentry. His Excellency the Governor General in Council considers that the opinions expressed regarding Major Jackson are amply borne out by the evidence adduced, and that it is impossible to arrive at any conclusion but that this Officer should be removed from the Public Works Department. He will accordingly be replaced at the disposal of the Military Department.

31. Mr. Clarke is not in any way responsible for the work in the walls of the building that failed. The Committee however report that they saw no improvement in the quality of the mortar used in the Factory buildings during the four and a half months that Mr. Clarke had been in charge of the Division, but mention the fact that he had stopped certain of the Contractors' works elsewhere, in consequence of being dissatisfied with the mortar, which, the Committee add, was much superior to what was being used in the Gun-carriage Factory buildings. The Governor General in Council accepts the opinion of the Committee with reference to this Officer, to the extent that it might reasonably be presumed that he would not much longer have delayed effecting an improvement in the work at the Factory also; but it nevertheless appears to His Excellency in Council that Mr. Clarke is not free from blame, as he should have made a thorough inspection of all buildings in progress immediately after assuming charge of his Division, and that had this duty been properly discharged he ought not to have failed to discover the bad quality of the mortar at once. He should be warned that this instance of remissness will be recorded against him in the Promotion Rolls, and that any further shortcoming on his part that may be brought to the notice of the Government of India, will be dealt with severely.

32. The Superintending Engineers in charge of the Circle whilst the various buildings for the Factory were in progress, were—

Lieutenant-Colonel C. D. Newmarch, R. E. (since dead), from 6th January 1868, to 31st October 1868.

Major F. H. Cobbe, R. A., from 1st November 1868, to 13th April 1869.

Lieutenant-Colonel H. Rose, S. C., from 13th April 1869, to 2nd May 1870.

Lieutenant-Colonel F. Alexander, S. C., from 2nd May 1870, to the present time.

33. The work on the store-room, the failure of which led to the present enquiry, was all carried out during the incumbency of the first of these Officers. He joined the Circle in bad health, having shortly before met with a severe accident, and in consequence of this was permitted by the Local Government, when proceeding on inspection to Raneekhet in April 1868, to remain there for two months to arrange about the laying out of the new Station. In ordinary course, he would have returned to his Head-quarter Station in June of the same year, but

his Medical advisers would not permit this, and His Honor allowed him to continue to perform his duties at Nynee Tal on its being represented to him by Colonel Hodgson, the Chief Engineer, that he (Colonel Hodgson) would be present at Allahabad in case of any emergency arising. Colonel Newmarch's health did not improve, and he was unable to leave Nynee Tal till late in October 1868, when he was transferred to Oudh as Chief Engineer, and not long after was obliged to take leave on medical certificate, and died on his way home. He had previously proved himself to be an efficient Officer. On his case, it is unnecessary to make further comment.

34. Major Cobbe did not assume charge of the Circle until the wall which fell had been completed; but during the whole of the cold season of 1868-69 he held the post of Superintending Engineer, and failed to ensure any improvement, during that time, in the quality of work. An Inspection Report sent in by him in March 1869 makes no mention of any inferiority in the work. The opinion of the Committee that this Officer failed in his duty in not having detected the defects of the mortar used generally in the numerous buildings under construction during his incumbency, is fully concurred in by the Governor General in Council, and the Lieutenant Governor has recorded his opinion that "neglect of duty is more attributable to Major Cobbe, than to any other of the Controlling Officers."

35. It is submitted in extenuation, that he had for a long time been, as indeed he now is (having been obliged lately to take leave on medical certificate) in an infirm state of health; this fact may be admitted, but taken in connection with the reports in this case, and in that relating to bad work in certain buildings in the Cantonment (to be noticed in a separate Resolution), it is clear that it is not desirable to retain him in the Department Public Works. His services, therefore, will also be re-placed at the disposal of the Military Department.

36. Lieutenant Colonel Rose, who was the next Superintending Engineer, and who held charge of the Circle for a year, reports that he visited the works at the Factory four or five times, but that he never made what he calls a "formal inspection" of them, saying that he deferred doing so until he had visited the various other out-lying Divisions of his charge. The division, the inspection of which was thus left to the last, was, in regard to works in progress, the most important one in his circle, and the one in which he usually resided.

37. He, however, commenced the formal inspection of this particular Division; but before he had completed it, he heard of his probable transfer to another Province, and therefore thought it useless to go on with it. In his replies to the Committee he also says that, as he had not occasion to make a "formal inspection," he never thought it necessary to scrutinize the work very closely, and he never brought forward any cases in which he was dissatisfied with Major Jackson's work.

38. The Committee remark with regard to this Officer that, in their opinion, he had no authority for considering an inspection by a Superintending Engineer to be other than a formal one, and that he had ample opportunity for becoming acquainted with the defects of construction noticed. These remarks have the entire con-

currence of His Excellency in Council. A Superintending Engineer who inspects works under his charge without satisfying himself as to the quality of the materials used, omits one of the fundamental duties of his office, a duty the necessity for which must be at once apparent to any Officer who has a proper sense of the responsibility attaching to a Superintending Engineer, and which is, moreover, fully impressed upon Superintending Engineers in the Public Works Code.

39. In the course of a whole year Colonel Rose appears never, in the proper sense of the term, to have inspected the Factory, though many of the buildings then in progress were of an important nature, including a chimney shaft 123½ feet high, a structure requiring a very superior description of brick-work, and the most careful and constant supervision.

40. It appears, moreover, from his examination before the Committee, that Colonel Rose had never even taken an opportunity to make himself acquainted with the arrangements for lime-manufacture that were in force in the Allahabad Division; and the neglect of duty, to which he has confessed, in having avoided an important inspection because he was about to be removed to the Central Provinces, shows that he cannot have a proper appreciation of the interests of the Public Service. In fact, apart from the accident now under review, Colonel Rose must stand convicted on his own evidence of having signally failed to pay due regard to the responsibilities and duties of the important post of Superintending Engineer.

41. His Excellency in Council would have had doubts whether an Officer, who has shown such remissness as is apparent in this case, ought to be allowed to remain in the Public Works Department, but in consequence of Colonel Rose's long service would have been content with depriving him of his position as Superintending Engineer, had he given no other cause for dissatisfaction. Two other serious instances of failure in duty, while he was an Executive Engineer at Rawulpindee, have however been very lately brought to the notice of the Government of India, which, taken in connexion with the present case, have led his Excellency in Council to the conclusion that it would not be right to retain this Officer in the Department. His services will accordingly be re-placed at the disposal of the Government of India, in the Military Department.

42. Lieutenant-Colonel Alexander, the present Superintending Engineer, joined the Circle only two months before the accident occurred; his responsibility is therefore less than that of any of his predecessors. The Committee, however, report that no improvement was apparent in the mortar, used in the chimney-stack, since he assumed charge.

43. His Excellency in Council, moreover, cannot consider Colonel Alexander's own evidence to be satisfactory or worthy of an Officer of his standing and experience, for he too makes use of the term "formal inspection," and under the plea that his visits to the works were not of this nature, attempts to excuse himself for not having looked more closely into the quality of the mortar.

44. In the late re-arrangement of Superintending Engineers that was necessitated by the change in the number of grades, Colonel Alexander has, in consequence of his proceedings in this case, been placed in a grade lower than that in which he would otherwise have appeared.

45. Colonel Hodgson held the combined Offices of Chief Engineer and Secretary to the Government of the North-Western Provinces, in the Public Works Department, during the whole of the period under review; he resided frequently at Allahabad, and on one occasion undertook for a short period the duties of Colonel Newmarch, at that Station.

46. His very onerous duties are doubtless mainly administrative; still His Excellency in Council cannot admit that they are purely so, and is of opinion that in failing to visit frequently and to inspect carefully the work in progress on the very extensive and costly ranges of buildings which were being constructed close to his residence, he omitted an important part of his duty.

47. Colonel Hodgson is an Officer of long service and great experience, and had he made such inspections of these particular works as might fairly have been expected of him, the bad quality of the mortar that was being used could not have escaped his notice. It is also a serious reflection upon him that, as the local Head of the Engineering Staff, he failed to secure such efficient supervision of the work as would have prevented the discreditable failure that has led to this enquiry.

48. The responsibility attaching to him was, moreover, increased by his having undertaken to carry on Colonel Newmarch's duties at Allahabad during this Officer's absence on account of ill health.

49. His Excellency in Council further considers that it is a blot in the administration of the Public Works Department in the North-Western Provinces, for which the Chief Engineer must be held mainly responsible, that Officers who evidently were physically unfit for the proper discharge of their duties should have been allowed to retain their charges. This occurred with reference to both Colonel Newmarch and Major Cobbe.

50. The Governor General in Council sympathises fully with Officers who, after many years' good service, may be obliged through ill health to abandon valuable posts which they may have well-earned, and the loss of which may be to them a source of great hardship, but these are the severe conditions which attach themselves to all efficient service, and more especially to service in India; and His Excellency in Council deems it right here to record his opinion, that all Heads of Departments fail in their duty when, under any circumstances whatever, they sanction, directly or indirectly, the retention in active employment of any Officer who is physically or mentally unfit for the proper discharge of his duty.

51. The Governor General in Council quite appreciates the ability, zeal, method, untiring industry and devotion to his work which have characterized Colonel Hodgson's long service in the Public Works Department, and regrets that a sense of duty renders it necessary to animadvert thus strongly on his proceedings in this case; but His Excellency in Council feels it impossible, under the circumstances, to absolve the head of the Department from blame for a failure which has resulted in the severe punishment of so many of the Officers subordinate to him.

52. With regard to the lime Contractor, separate instructions will be issued for prosecuting him on a criminal charge, as there can be no doubt, from the evidence that has been adduced, that the lime delivered at the works was largely adulterated.

53. Separate instructions will also be issued in respect to the other buildings of the Factory that have been completed, or that are in progress, and the uses to which they should be eventually put. It appears from the Committee's report that, with a few exceptions, the whole of these buildings require considerable works of repair and renewal; and that in consequence of the bad quality of the mortar, the buildings in which it was intended to work the machinery will have to be turned to account for some other purpose.

54. In conclusion, His Excellency the Governor General in Council desires to record that he has reviewed with great sorrow this deplorable history of negligence, incapacity and corruption—negligence in the conduct of every superior Officer who was connected with the supervision of these buildings from the beginning,—incapacity to a greater or less extent of almost every subordinate concerned in the work of construction,—corruption, on the part of those who supplied the worthless materials,—and it is impossible to avoid the suspicion, that some of the inferior subordinates must also have been aware of the organized system in the adulteration of the lime which was practised throughout.

ORDER.—Ordered, that this Resolution be forwarded to the Government, North-Western Provinces, with request that a copy may be furnished to each of the Officers concerned now serving in the Department Public Works of the North-Western Provinces, also that a copy of the Resolution be sent to the Chief Commissioner, Central Provinces, for information and communication to Lieutenant-Colonel Rose.

Ordered also, that this Resolution, together with the connected papers, be sent to the Military Department for information, and for the issue of any orders that may be necessary in that Department.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

REPORT OF SPECIAL COMMITTEE UPON THE DEFECTS IN THE NEW BARRACKS AND OTHER BUILDINGS AT ALLAHABAD.

No. 1296-7 B—M, dated 30th November 1870.

RESOLUTION—By the Govt. of India, P. W. DEPT.

Read—

Public Works Department letter to the Government of the North-Western Provinces, in the Public Works Department, No. 686 B—M, dated 7th July 1870.

Public Works Department letter to the Government of the North-Western Provinces, in the Public Works Department, No. 705 B—M, dated 12th July 1870.

Endorsement from the Military Department, No. 356, dated 18th July 1870.

Public Works Department endorsement to the Chief Engineer, North-Western Provinces, No. 744 B—M, dated 18th July 1870.

Letter from the Government of the North-Western Provinces, in the Public Works Department, No. 2408 A, dated 13th August 1870, and enclosures.

Letter from the Government of the North-Western Provinces, in the Public Works Department, No. 2474 A, dated 18th August 1870, and enclosures.

RESOLUTION.—The Special Committee, appointed for the purpose of reporting upon the circumstances relating to the fall of the store-room in the Gun-carriage Factory at Allahabad, were requested to examine and report upon the condition of the soldiers' barracks lately erected in the new Cantonment, and after a careful inspection of the several buildings, have brought to notice defects in the following instances:—

1.—Insecurity of the planks of the ceiling of the barracks.

2.—Leaky condition of roofs, particularly the terraced ones of the upper-verandahs of barracks.

3.—Want of sufficient connection between the verandah and main walls of barracks.

4.—Variable quality of the mortar and plaster used in the construction of the buildings generally.

5.—Defective drainage of the ground in the neighbourhood of the barracks.

6.—Doubts as to the sufficiency of the foundations of the barracks.

7.—Inferior style of construction of Officers' quarters, particularly in respect to one of the double-storeyed buildings, which will probably have to be re-built.

As regards the barracks, the Committee only lay stress on point No. 3; they remark—"this is, in fact, almost the only point of any importance that has come under our notice," and the Local Government observes that, whilst there are many defects in the workmanship which are very discreditable to the Officers who have been connected with them, no radical defects of construction appear to exist, or only such as admit of being remedied at no very large outlay.

1. *Ceilings.*—The half-inch planks, of which the ceilings are formed, not having been properly fastened, have started under the influence of the alterations of temperature and moisture of the atmosphere. Very simple measures are necessary to make these quite secure; and the Committee express the opinion that "the defects might easily have been rectified

by the Executive Engineer, or at all events by the Superintending Engineer on his own responsibility." The Local Government remarks that "it was through error of judgment on the part of the Executive Engineer that what is required had not already been carried out." Measures have been taken by the Local Government for effecting the necessary repairs, and probably the work has been done by this time.

2. *Leakage of verandah roofs.*—This is partly due to cracks in the terrace-covering, which ought to have been long ago closed up by the Executive Engineer, but mainly to an insufficient number of pipes for the rapid discharge of the rain water. It is proposed to supply an additional number of pipes; but, in view to avoiding the risk of leakage into the walls, it is a matter for further consideration whether it will not be the best plan to dispense with pipes altogether, and to allow the water to pass freely over the eaves, or to discharge by numerous spouts.

3. *Insufficient connection between verandah and main walls.*—The arcaded verandah walls are slight, and the Committee think that they discovered signs of their having been thrust outward by the roof. The evidence is not very positive, but the Committee very properly recommend the precaution of improving the connection between the main and the tops of the vernadah walls by a few iron tie-rods. Orders, which are approved by the Governor General in Council, have been given by the Local Government to carry out this precautionary measure.

4. *Variable quality of mortar and plaster.*—The Committee consider that "the whole of the brick-work, as regards the quality of bricks and setting, is altogether unexceptionable; the bricks have been burnt in the Government yards, and are as good as any we have ever seen, and the joints of the work are remarkably close and true. We cannot, however, say that the mortar is generally of equally good quality. Both as regards the pointing and the plaster, we find that, in some places, the mortar is particularly good, and in others of inferior quality, and in many of the wards, particularly with regard to the plaster, decidedly bad." The security of the buildings does not appear in any way to be affected by the quality of the mortar; but the bad plaster will, of course, involve heavy expense in the annual repairs. The Committee would not permit the use of oopla-burnt kunkur lime; but such lime can be obtained of excellent quality if ordinary care be taken in its preparation, and on economical grounds it would be very undesirable to prohibit the use of lime thus burnt.

5. *Defective drainage.*—The Committee draw attention to this, and particularly urge that arrangements be made to prevent stagnation of water near the foundations of the buildings.

The Chief Engineer explains that projects for the complete drainage of the lines have been approved, and that, for the most part, the necessary drainage channels have been cut. The ground in the neighbourhood of the barracks has, however, been lately ploughed up in view to its being purified by cultivation; some of the surface drains have consequently been choked, and water lies about in various places. A few cuts would have disposed of this water, and the Executive Engineer is justly blamed for not having taken the necessary measures to ensure their being carried out. The report brings to light a want of forethought and consideration in this very simple matter, which it is painful to be obliged to notice, and His Excellency the Governor General in Council

desires that this question of drainage may continue to receive the most careful consideration of the Chief Engineer.

6. *Insufficiency of foundations.*—The attention of the Committee was drawn to this point in consequence of some slight cracks in the Infantry hospital walls. The Committee remark "though to all appearance they are quite insignificant, we feel bound to notice them, owing to the fact that whilst two of the men's hospital ranges were under construction, a portion of one of them fell twice, and an angle of the other three times, and were again re-built on the old foundations after they had been protected by a layer of concrete in front. The foundations are carried to a depth of only 2½ feet below the ground level."

Colonel Hodgson explains that the Committee have not been correctly informed about this point. No portions of the buildings ever fell. Cracks appeared in the corner arches, caused not by any yielding of foundations, but from want of sufficient strength in the supporting end-piers. These portions were taken down and re-built. A worse settlement occurred over a blind well; the injured portion of wall was taken down and re-built, and precautions were taken to secure the foundations.

The Committee would have preferred deeper foundations generally for all the buildings; but these buildings have been more or less completed for two or three years, and there are no manifest signs of settlement. The chief precaution to be taken is to prevent the lodgment of water near the foundations, and to this the Governor General in Council would enjoin the strictest attention.

7. *Officers' quarters.*—These were not commenced until the barracks were nearly ready for occupation. They were, therefore, run up hurriedly, so that they might be ready for the Officers when the men were moved into the barracks; but this is no valid excuse for the very bad quality of work that has been executed. All authorities admit that the construction of these quarters is far inferior to that of the barracks. One of the buildings has settled so seriously that it will probably have to be almost entirely re-built. The cause of settlement has not yet been ascertained, but it is being enquired into, and a further report is promised. This should be submitted with the least practicable delay.

His Excellency the Governor General in Council observes that most of the defects above noticed, and many others in connection with the minor buildings, were reported to the Government of India by the Quarter Master General in January last, and that the representations of the Military authorities were sent to the Government of the North-Western Provinces, on 9th February 1870, with instructions to furnish, on an early date, detailed explanation in regard to each of the defects brought to notice. Orders were also given to the effect that the remedial measures, that might seem urgently necessary in the opinion of the Lieutenant Governor, should at once be set in hand. The instructions of the Government of India appear to have been overlooked by the Local Government, for no report beyond that now under consideration has ever reached the Government of India. The comprehensive report called for should, however, be submitted without further delay, as it ought to embrace points not touched upon in these papers.

In respect to the blame to be attached to the Officers of the Department for the defects that have been brought to notice, there can be no doubt that Mr. Hennessey, one of the Executive Engineers, is

directly responsible for the bad work in the Officers' quarters, which were nearly all built by him. For this, and for other shortcomings, he has lately been reduced to the grade of Assistant Engineer.

The present Executive Engineer, Major Whish, had nothing to do with the construction of any of the buildings; but the Local Government holds him to blame for slackness of duty in respect to his failure to remedy the defective drainage, and to carry into execution the necessary repairs of the barracks. Had he attended properly to the condition of the ceilings and the roofs, many of the defects now complained of would have had no existence. It is said of him—"there has been a want of promptness of action which should not have occurred in an Officer of his long experience."

The remarks of the Lieutenant Governor on this Officer are fully concurred in by His Excellency the Governor General in Council, and he should be told that this instance of failure on his part will be recorded against him in the Promotion Rolls.

It is said of Major Cobbe, Superintending Engineer, that he was of little or no assistance to the Government at the time when work was being pressed forward, and that he failed altogether to notice and check the inferior work in the Officers' quarters. His case has been dealt with in the Resolution regarding the accident to the store-room in the Gun-carriage Factory.

Nothing has been said of Colonel Rose, Superintending Engineer; but he was in charge for 2½ months after the representations of the local Military authorities above alluded to had been pointed out to the Government, North-Western Provinces. The orders of the Government of India must have been passed on to him, and he ought to have paid particular attention to remedying many of the defects that had been so prominently brought to notice, and for which Major Whish has alone been held to blame by the Local Government.

Fort and Government House.—It does not seem necessary to record any remarks on this part of the Committee's proceedings. The suggestions of the Committee may be left to be dealt with by the Local Government.

His Excellency the Governor General in Council desires to record, in conclusion, that the strictures, conveyed in the Resolution Nos. 1294—5, dated 30th November 1870, on the fall of the store-room of the Gun-carriage Factory, in regard to the negligence and incapacity displayed by all the Officers concerned, are applicable, although perhaps in a somewhat less degree, to the case of the new barrack buildings.

ORDER.—Ordered, that this Resolution be sent to the Government of the North-Western Provinces, in the Public Works Department, with a special injunction that the measures (which have already been too long delayed) for placing the buildings in question in perfectly efficient condition may be speedily and thoroughly carried into effect.

Ordered also, that a copy of the Resolution be forwarded to the Military Department for information.

Printed and published for the GOVT. OF INDIA, *at the Office of* SUPDT. GOVT. PRINTING, 8, *Hastings Street, Calcutta.*