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Government of Madras.

Public Works DEPARTMENT.

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Proceedings of the Madras Government, Public Works Department, for the month of January 1860.

No. 16. Read the following letter from Lieutenant-Colonel J. H. BELL, Chief Engineer; to J. D. BOURDILLON, Esq., Secretary to Government, dated 31st August 1859, No. 4436.

I have the honor to submit for the information of Government, the annual report on the operations of the department of Public Works for the official year 1858-59.

2. The restriction upon public expenditure imposed in the year preceding was pretty fully maintained during that now under review, and consequently operations in new works have generally been of a limited nature. At the same time, however, in those districts, over which the monsoon burst in great fury and made sad havoc of all irrigation works and lines of communications within its influence, repairs to a very large extent have been executed.

Extract Minutes Consultation, No. 1372, 17th July 1857.

3. Under the budget of 1858-59, application was made for the expenditure of Rupees 71,77,575, including outlay at Hyderabad, (since disconnected* from this presidency), under the following heads :—

* Extract Minutes Consultation, No. 208, 21st January 1859.

	Rs.
On new works, as per statement No. 1	8,92,820
„ Do. do. „ 2	41,66,194
„ Repairs...	21,18,261

exclusive of the annual grant of four lacs to cover emergent works and supplemental estimates.

4. This sum was sanctioned by the Madras Government under the following conditions, viz., that the projects included in statement No. 1, should not be begun until the sanction of the Supreme Government had been obtained to them, and permission to commence operations given by the local Government; that, of those undertakings entered in statement No. 2, none should be proceeded with, except the military buildings specially ordered, emergent works sanctioned, or those to be executed out of the one lac fund, and others already, or that might thereafter be, exempted from restriction; while all repairs, except on irrigation works, should be limited as strictly as possible till further orders.

Extract Minutes Consultation, No. 93, 18th January 1858.

5. The Government of India, however, in consideration of the financial difficulties of the country, declined to affirm the resolution of the local Government, and authorized an outlay upon new works throughout this Presidency, including Hyderabad, of Rupees 14,59,256. Adding to this, the sum entered in the budget for repairs, Rupees 21,18,261, and what has been subsequently sanctioned, Rupees 10,13,714, a total of Rupees 45,91,231, available for expenditure in the year under review, is obtained. As Hyderabad, however, has been disconnected from Madras, and none of the outlay there is entered in the subsequent statements, the grants, therefore, aggregating Rupees 1,35,413, fall to be deducted, leaving a sum of Rupees 44,55,818, viz. Rupees 13,28,343 for new works, and Rupees 31,27,475 for repairs.

Despatch No. 4606, of date 23rd September 1858.
Communicated in E. M. C., Nos. 2214 and 2594, dated 21st October and 2nd Decr. 1858,
and Despatches Nos. 4645, do.
„ 4765.
Communicated in E. M. C., Nos. 2135 and 2274, dated 12th and 28th October 1858.

	14,59,256
	21,18,261
	10,13,714
	45,91,231
New works, Rupees	1,30,913
Repairs.... „	4,500
Rupees	1,35,413
	45,91,231
	1,35,413
	44,55,818

6. The entire expenditure, exclusive of Hyderadad, has been Rupees 45,08,433, thus exceeding the above sum by Rupees 52,615. In new works the expenditure went beyond the allowance to the extent of Rupees 1,87,668, while, in repairs, the outlay fell short of the sum applicable thereto by Rs. 1,35,053.

Rupees	45,08,433
„	44,55,818
	52,615

7. The excess in new works can be accounted for by the considerable number of projects from which restriction was removed in the course of the year, and by emergent works executed out of the four lac fund. The authorized amount for repairs not having been fully expended by the close of the year, is attributable to the large additional sanctions, amounting to fully five lacs, passed during the last quarter for the restoration of works, in the southern districts, damaged by the heavy floods.

8. Into the particulars of the outlay, I shall now enter as briefly as the subject warrants, referring to the tabular statements of the two branches of expenditure which will be found on succeeding pages for the separate items upon which money has been spent, and to remarks under each district for full particulars of the works in progress during the past year.

9. The total of each branch of the two grand divisions—new works and repairs, is shewn to be as follows :—

I. New works.

Irrigation works	Rs. 2,72,422
Communications	3,49,944
Buildings	8,93,645
Total......	15,16,011

II. Repairs.

Irrigation works	Rs. 19,22,764
Communications	7,97,735
Buildings	2,71,923
Total......	29,92,422.

10. The expenditure of 1858-59, will be found, upon comparison, to havee xceeded that of 1857-58, by Rupees 4,21,408, but the sums laid out on new works and repairs do not bear the same proportion as they did in the preceding year, when they were within Rupees 59,000 of each other. On the contrary, in the one now under review, the outlay upon repairs is, as shewn above, in the proportion nearly of two to one of that upon new works, that is, about ⅔rds of the entire expenditure last year were upon repairs.

Rupees.	
45,08,433	1858-59.
40,87,025	1857-58.
4,21,408	

11. In IRRIGATION WORKS the same districts as in the previous year absorbed the principal share of outlay under this head, and are

	New works.	*Repairs.*
Ganjam...		
Godavery	Rs. 17,683	Rs. 21,376
Kistnah...	49,379	2,70,938
Nellore	53,545	1,04,481
Cuddapah	56,344	2,37,913
Bellary	16,807	79,066
Chingleput	4,051	1,52,899
North Arcot	48	97,409
South Arcot	26,343	38,711
Tanjore	7,190	80,426
Trichinopoly	5,607	4,56,698
Madura...	24,731	1,69,145
Tinnevelly	....	41,336
Coimbatore...	904	51,454
Salem	4,345	31,168
	2,783	55,005

12. Conspicuous among a number of very large sums stands the item (of upwards of 4½ lacs) against Tanjore for repairs. The circumstances which led to this are fully detailed in the remarks under that district, and I shall only add that that amount is far in excess of what was expended in the Godavery division last year, when the repairs of its annicut proved an important and costly item.

13. Under the head of COMMUNICATIONS, are included the following works :—

	New works.	*Repairs.*
Roads and bridges...	Rs. 3,23,243	Rs. 7,60,462
Navigable canals......	7,813	28,057
Ports and harbours.	18,888	4,857
Ferry boats..	0	4,359
Total........	3,49,944	7,97,735

And the districts in which the major part of these sums has been expended are with reference

1. To roads and bridges.

	New works.	*Repairs.*
... ...	Rs 25,881	Rs. 24,971
Ganjam	19,040	35,127
Nellore..	11,352	36,909
Cuddapah..	1,217	53,985
Bellary..	26,262	1,08,995
Chingleput	47,472	57,569
North Arcot..	3,534	61,849
South Arcot	4,971	44,598
Tanjore.	6,788	53,684
Trichinopoly.	10,528	38,116
Coimbatore	11,530	33,602
Salem	15,824	57,406
Canara	53,170	31,446
Malabar.		

2. To navigable canals.

... ...	6,313	8,741
Godavery	0	11,953
Chingleput	0	5,344
Tanjore..		

3. To ports and harbours.

... ...	4,790	2,458
Tanjore..	12,797	0
Madura		

In the latter of these is the celebrated Paumben passage, which has attracted so much public attention. The operations upon it during last year will be found noticed under the head of Madura.

14. The following are the various classes of BUILDINGS, with the amounts laid out upon them :—

	New works.	*Repairs.*
... ...	Rs. 6,73,935	Rs. 1,12,661
Military	33,481	66,546
Revenue	72,772	60,074
Public	85,074	25,117
Judicial	6,473	6,537
Ecclesiastical...	19,800	575
Marine	2,110	2,413
Educational		

15. Barracks, and other structures for the accommodation of troops, again constituted in the past year, the principal works under this head; and, of course, the magnificent edifice at Jackatalla, or rather series of erections composing it, is far above all other works as regards the sum laid out upon it. But as there have been large amounts expended in other districts,

it is as well that these should be brought prominently forward, and they are accordingly here enumerated :—

	New works.	*Repairs.*
Bellary...	Rs. 42,909	Rs. 8,410
Chingleput, (the works at Saint Thomas' Mount)...	39,092	6,953
Trichinopoly...	34,217	4,191
Garrison Engineer, (Fortification of Fort Saint George and other works).	72,175	53,007
Bangalore.	1,00,163	14,433
Jackatalla	3,05,118	469

16. Of the other classes under this head it is sufficient to say that in the *Revenue* and *Public* buildings, the Civil Architect and Garrison Engineer's operations are of the largest amount ;—while in the *Judicial*, the Salem Jail brings that district nearly equal to the Civil Architects' charge in point of outlay, these two occupying the first place in this particular item of last year's expenditure.

17. The TRAFFIC upon the various NAVIGABLE CANALS of this Presidency, and through THE PAUMBEN PASSAGE is the next point for consideration. The navigable canals, or systems of canals, are three in number, viz. those in the Godavery and Kistnah divisions, and the eastern coast canal.

18. The traffic upon the first of these is ascertained at the head locks of the three main canals forming the one grand system. The full returns from these, as required by Government, will be found in the general remarks upon the Godavery division, but it may be here stated that the results of the past year, on the whole, are most satisfactory. For, while in the value of goods conveyed on the central main canal there was a decrease of Rupees 43,485, in that upon the eastern and western main canals the increase aggregated Rupees 9,66,406.

19. In the Kistnah canals, the return of the value of goods, passing the Bezwada and Seetanagrum locks, also exhibits an increase of Rupees 20,155. The statement of this traffic is shown in the remarks upon that district.

20. The eastern coast canal traffic, the various tables of which as per margin, are embodied in the remarks upon Chingleput, exhibits a diminution in the *number* of boats plying upon it during the past year, but a small increase in the tonnage of craft and in the toll dues collected, as the subjoined figures shew :—

6 Tables entered A. to F. and a general statement prepared in this office.

	Boats.	*Tons.*	*Toll.*
1857-58	9,324	1,29,643	32,410-12
1858-59	9,111	1,30,236½	32,559- 2
	Decrease......213	Increase......593½	Increase...148- 6

21. The failure of the traffic in salt during part of last year, as mentioned afterwards, was most unfortunate, for had it been kept up throughout at a corresponding rate to what it was in the early months, a large increase in all points would have been the result.

22. The report from the Paumben channel for last year is not so favorable as that of its predecessor, there being a decrease in the tonnage of vessels passing through it to the extent of 49,571 tons. This arose from the disasters that occurred during the gales in May and November 1858, and to there being no cargo procurable at the ports of Tanjore from the failure of the rice crops. In consequence of the decrease in shipping, the revenue derived from pilotage, &c., has fallen off, and was last year Rupees 2,661 beneath the amount of 1857-58.

A statement of the shipping which passed through the Strait in the course of 1858-59, with the dues collected, forms part of the report upon Madura.

23. Before entering upon the administration details of each district, the following tabular statement of the expenditure upon new works and repairs, under the various heads, will shew at a glance the amount of outlay on each individually, and also the sums expended in the respective districts.

I.—*Expenditure on New Works during the year* 1858-59.

DISTRICTS.	Irrigation works.	COMMUNICATIONS.				BUILDINGS.							Total.
		Roads and bridges.	Navigable canals.	Ports and harbours.	Ferry boats.	Military.	Revenue.	Public.	Judicial.	Ecclesiastical.	Marine.	Educational.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		Rs.
Ganjam	17,682	25,881	...	221	...	627	1,090	5,397	3,704	1,535	4,833	...	60,971
Vizagapatam	...	...	...	...	...	9,169	...	...	...	60	1,181	...	10,410
Godavery division	49,379	...	6,313	130	...	44,245	6,247	7	32	744	774	...	1,07,871
Kistnah do.	53,515	15,110	...	...	...	4,304	1,403	4,004	2,196	545	591	...	81,698
Nellore	56,344	19,040	...	...	...	457	...	1,136	115	...	...	...	77,092
Cuddapah...	16,807	11,352	...	...	...	191	423	303	334	...	...	...	29,410
Bellary	4,051	1,217	...	...	..	42,909	3,198	1,555	218	...	...	...	53,148
Kurnool	...	20,882	..	...	...	7,255	120	402	...	...	...	...	28,659
Chingleput	48	26,262	...	...	...	39,092	906	5,551	...	1,512	...	...	73,371
North Arcot	26,343	47,742	...	...	...	2,307	30	181	...	...	...	...	76,603
South Arcot	7,190	3,534	...	...	...	126	...	1,463	1,108	...	2,649	...	16,070
Tanjore	5,607	4,971	...	4,720	...	...	...	250	1,926	...	...	...	17,544
Trichinopoly	24,731	6,788	...	...	...	34,217	28	181	...	...	...	...	65,945
Madura...	...	21,792	...	12,797	...	...	1,495	90	363	...	...	...	36,537
Tinnevelly	904	6,621	...	...	...	...	1,446	1,235	118	...	...	...	10,324
Coimbatore	4,345	10,523	...	...	...	400	34	3,005	214	788	...	41	19,350
Salem	2,783	11,530	...	...	...	2,436	10	985	36,891	...	...	1,780	56,415
Canara...	...	15,824	...	630	...	1,925	7,500	...	...	...	...	...	25,879
Malabar	...	53,170	...	...	...	6,783	462	839	2,536	174	832	...	64,796
Madras...... { Civil Architect	2,662	20,564	...	...	...	36	2,094	34,381	35,319	901	...	289	96,216
Madras...... { Garrison Engineer... ...	...	138	1,500	320	...	72,175	6,995	11,807	...	...	8,940	...	1,01,875
Bangalore...	...	302	...	...	...	1,00,163	...	...	...	214	...	...	1,00,679
Jackatalla	...	...	...	...	...	3,05,118	...	...	...	...	...	...	3,05,118
Total...........	2,72,422	3,23,243	7,813	18,888	...	6,73,935	33,481	72,772	85,074	6,473	19,800	2,110	15,16,011

II.—*Expenditure on Repairs during the year* 1858-59.

Districts.	Irrigation works.	Communications.				Buildings.							Total.
		Roads and bridges.	Navigable canals.	Ports and harbours.	Ferry boats.	Military.	Revenue.	Public.	Judicial.	Ecclesiastical.	Marine.	Educational.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Ganjam	21,376	24,971	...	...	...	192	3,813	901	542	89	...	...	51,884
Vizagapatam	11,408	6,722	...	...	...	2,112	7,413	118	627	11	...	...	28,411
Godavery division...	2,70,938	12,091	8,741	2,141	1,931	1,292	2,612	2,992	1,915	5	...	...	3,01,658
Kistnah do.	1,04,481	25,024	600	...	600	666	9,515	1,935	856	96	...	...	1,43,773
Nellore	2,37,913	35,127	1,076	...	594	179	1,053	1,126	1,010	111	90	...	2,78,279
Cuddapah	79,066	36,909	...	...	...	391	1,549	351	341	...	...	...	1,18,607
Bellary	1,52,899	53,985	...	...	...	8,410	1,477	1,867	263	87	...	181	2,19,172
Kurnool	16,915	19,400	...	...	...	176	494	1,250	237	...	...	...	38,472
Chingleput	97,409	1,08 995	11,953	...	153	6,953	293	1,494	30	1,169	...	...	2,28,449
North Arcot..	38,711	57,569	...	...	...	5,088	366	728	688	152	...	...	1,03,302
South Arcot	80,426	60,849	...	...	...	300	...	1,028	902	81	...	...	1,43,586
Tanjore	4,56,698	44,598	5,344	2,458	1,072	743	1,915	1,879	2,784	105	285	1,310	5,19,191
Trichinopoly	1,69,145	53,684	...	...	9	4,191	386	3,070	180	...	...	...	2,30,665
Madura	41,336	13,749	120	...	...	...	1,239	638	33	...	32	...	57,147
Tinnevelly...	51,454	25,601	...	49	...	783	402	895	182	831	...	...	80,197
Coimbatore	31,168	38,166	...	...	...	...	166	2,036	2,819	668	...	...	75,023
Salem	55,005	33,602	...	...	...	189	1,438	1,673	1,768	...	...	...	93,675
Canara	...	57,406	...	90	...	3,326	8,510	...	...	...	...	..	69,332
Malabar	1,019	31,416	223	...	...	9,761	2,100	2,685	1,154	351	167	6	48,912
Madras.. { Civil Architect	5,397	14,219	...	...	...	...	19,186	25,213	6,786	1,276	1	913	73,021
Madras.. { Garrison Engineer	...	349	...	119	...	53,007	2,619	8,165	...	1,199	...	...	65,458
Bangalore	...	6,000	...	...	...	14,433	...	...	...	168	...	...	20,601
Jackatalla	...	...	...	...	...	469	...	...	...	138	...	...	607
Total...................	19,22,764	7,60,462	28,057	4,857	4,359	1,12,661	66,516	60,074	23,117	6,537	575	2,413	29,92,422

GANJAM.

24. The expenditure in Ganjam during 1858-59 has been Rupees 1,12,855 (against Rupees 99,092 of 1857-58), and is divided into

	New works.	*Repairs.*
Irrigation works	Rs. 17,683	Rs. 21,376
Communications...	26,102	24,971
Buildings...	17,186	5,537
Total ...	60,971	51,884

25. Several important new undertakings, from which the restrictions were withdrawn, or, as constituting "State" works, freed by the sanction of the Supreme Government, were executed in this district in the course of the past year, and have been beneficial to it in a very considerable degree. These, accordingly, will be noticed in the first place, and are as follow :—

26. The Aska and Russelcondah road, being 25 miles of the line from Berhampore to the latter place. The road between Berhampore and Aska had been completed, with bridges, &c., before the close of 1857-58, but as Government coincided with the Commander-in-Chief in the desirability of the frontier station of Russelcondah being connected with Berhampore and the coast, a supplemental grant of Rupees 10,000 was sanctioned in April 1858, in order that this line might be fitted for the easy passage of troops. Before August, 1858, (no fewer than between 80 and 90 bridges having by that time been built), this new road was opened, and attracted immediately a cart traffic, which soon became so enormous and valuable that, in January 1859, Government exempted from restriction the balance of the estimate, in order that those parts out of repair might be metalled, and a five arch bridge constructed over the deep and rapid Loharakundee close to Russelcondah. The progress of these had been so favorable, that it was hoped the road and bridge would be finally opened for traffic in June. The sum expended amounted to Rupees 15,638.

27. The road outside the town of Berhampore. This work was freed from restriction in November 1858, and Rupees 3,628 were spent upon it last year. It is a broad road, two miles long, and was nearly completed at the close of the past year, the earth-work being finished, and 14 tunnels built. It has already been found very useful in fulfilling the object for which it was designed, viz., obviating the necessity for the heavy traffic upon this line to pass through the narrow crowded streets of Berhampore.

28. The road from Nursannapettah to Calingapatam. Rupees 4,000 sanctioned, in modification of the restrictions. Rupees 3,200 were laid out upon the improvement of this line, which will be passable for carts before the rains. The worst parts have been metalled, and 39 tunnels built. In April 1859 the traffic averaged 317 bandies a day. This is the course taken in conveying the produce of the Kimedy Zemindary, to the coast, and formerly, as the country was impassable for carts, coolies carried the grain, &c., to the port.

29. The road from Russelcondah viâ Sunkarakole to Sonepore. In August 1858, Government granted Rupees 9,635 for the examination trace and survey of this line, and after a personal inspection of the country in December and January last, the District Engineer and Captain Phillips decided upon the line by the Doorgapersad, Poongolee, Dooba, and Kalinghia ghâts, which has been traced throughout. It is now being cleared and widened, the soil has been found, upon the whole, to be favorable, and the gradients easy; there are, however, some rocky parts, in blasting which the assistance of Sappers will be required. The trace will not only prove valuable in future operations, but also as an important means of communication for travellers, brinjarries, &c., who are now already availing themselves of it. Between January and April last, ten miles of jungle and two miles of ghât had been rendered passable, at a cost for clearing and levelling of Rupees 130 per mile. As a large trade in turmeric, salt, and oil seeds, would pass along the line, it would be most advantageous to have a main road through the Khond tracts to Sonepore, Sambhulpore and the Nagpore territory. Were this constructed, with a few choultries and wells upon it, and branch roads to principal villages, the country would simultaneously be opened up to the officers of Government, and enable them the better to exercise their authority for the suppression of the barbarous and revolting rites practised in the hill tracts of Orissa. At the same time, however, unless the road be continued in Bengal to Sonepore viâ Bispurrah, the full benefits of the line will not be obtained. The cost has not yet been finally computed, but Captain Harington estimates it at about Rupees 50,000 for the 40 miles to Sun-

karakole, the limits of the Madras Presidency. A detailed survey and estimate will, however, be prepared for insertion in the next budget. At Mojogodo, eight miles from Russelcondah, on this road, a choultry for native travellers, with a good well 24 feet deep attached, has been built in the course of last year under Sub-Overseer P. Bascarrow.

30. In irrigation the principal works have been

1. The excavation of a new head and the construction of a head sluice to the Poorshotepoor channel, a cost together of Rupees 5,890. The former of these was sanctioned in September 1858, and completed on 25th February last. The restriction on the latter was removed in November 1858, and it was finished on 7th March 1859. An area of 1,622 acres, paying a rent of Rupees 7,637, will be benefitted by this work.
2. The embankment of the Mahanuddy river. 12 miles have been completed at Aska, and protection afforded to many detached pieces of land liable to be injured by floods. The expenditure during last year has been Rupees 7,271. The other operations under this head have consisted of the repair of 204 tanks and channels, and the construction of 24 calingulahs and sluices.

31. The ports of Ganjam, Munsoorcottah, Sonepore, Poondy, and Calingapatam, have each been furnished with a flag staff from 80 to 100 feet high, with complete sets of flags. Two anchor bridle moorings, promised by the Right Honorable the Secretary of State for India, will be fixed in the Munsoorcottah roadstead when received.

32. The buildings, which have been in progress since February last, consist of the choultry before mentioned, the police ameen's cutcherry at Berhampore, the Moonsiff's court houses at that place and Palasa, (decided improvements upon the present places of business, wretched native houses), and the civil dispensary at Berhampore; on this very important building Rupees 2,121 were expended, and 15,000 cubic feet of masonary were built. Seven wells have been constructed, five in the northern trunk road, one at Gungapore on the Aska and Russelcondah road, and one at Mojogodo, as above stated.

33. The requirements of the district are almost entirely confined to roads and irrigation works. The former are very deficient both in number and state of repair. Lines leading to the principal ports of Munsoorcottah and Calingapatam, (to which may be added Sonepore, Barwa and Poondy), and to the salt pans at Ganjam, Nowpada and Omravelly, are the most urgently required, and will, when constructed, not only be of benefit to the people, but remunerative to Government, by providing means for the easy transport of grain and salt, the trade in which yields a direct profitable return, and will increase with extended facilities for traffic. There is no line of road from the Ganjam salt pans to the interior, though there are roads to both the north and south. The pans at Nowpada are, during the rains, totally cut off from all intercourse, and those of Omravelly should be placed in direct communication with the port of Calingapatam. The sales of salt have doubled within the last five years, and as the difference between the cost of its manufacture and its selling price ranges from Rupees 114 to 116 per garce, it is plain that the more approaches there are to those works, the better.

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These lines have, I observe, been lately sanctioned.

34. With regard to the condition of existing roads, the northern trunk road from Chicacole to Itchapore is in such a wretched state as to be impassable even for foot passengers at times during the rains. The traffic upon this portion of the line, judging from what it is on that part which is in good order, would be enormous, were it maintained in good repair.

35. The irrigation works, which have had little or no attention paid to them lately, owing to want of funds, demand also a large amount of expenditure for repairs.

VIZAGAPATAM.

36. The expenditure of 1858-59 in this district amounted to Rupees 38,821, while that of the previous year was Rupees 35,545. But, as will be observed from the analysis, it was confined chiefly to repairs, and these were not more than sufficient to preserve the revenue, though in excess of the previous year by nearly Rupees 11,000. The items of outlay are:—

	New works.	*Repairs.*
Irrigation works...	Rs. 0	Rs. 11,408
Communications	0	6,722
Buildings...	10,410	10,281
Total......	10,410	28,411

37. The important new works, commenced prior to the year under review, came almost entirely under the restrictive orders. Military buildings being the only exception of any consequence, and upon these the sum of only Rupees 9,169 was expended.

38. The principal operations were, 1st, the alterations and additions to the hospital at Vizinagrum, which, at the close of the official year, was nearly ready for tiling. 2nd. The Seebundy barracks and hospital at Nursipatam. These have cost a much larger sum than was anticipated, owing to the great rise in the price of labor and materials, added to the difficulty experienced in finding workmen, both skilled and coolies, the former of whom had to be brought from a great distance, and paid high wages.

39. The limited nature of the repairs has been stated above, and, before entering upon the requirements of the district, it may be well to mention shortly, what has been done by *private* funds. The instances specially noticed by the District Engineer are, the partial construction of a road from near the Gumberum bridge to Bimlipatam, and the repair of the line from Vizagapatam to Vamoolavulsa.

40. The requirements of Vizagapatam are principally roads, regarding the paucity and unsatisfactory condition of which, the District Engineer comments at considerable length. Upon its land communications, Vizagapatam is wholly dependent, and were it not for the favorable nature of its soil, traffic would be at a complete stand-still, as the want of roads, or the bad state in which existing lines are, would oppose insuperable barriers to all intercourse.

41. The District Engineer enumerates those roads which he considers of most consequence, and of which the following are a few, viz., that from Gajapatynagrum to Bimlipatam, a portion of which is in very bad order, and towards the repairs of which, estimated at Rupees 8,830, the Rajah of Vizianagrum has guaranteed Rupees 2,000; the road from Gazawaka to Agnumpoody, eight miles, which, if completed, and a bridge thrown over the ferry at Vizagapatam, would render the district tolerably independent of the trunk road, to complete which, nearly Rupees 40,000 would be required. Another line recommended by Lieutenant Vertue, is already stated to have been partially constructed from private funds, viz., from near the Gumberum bridge to Bimlipatam, by which the great traffic between the latter place and Vizagapatam would be saved six miles. The circumstance, that it was merchants of Bimlipatam who subscribed upwards of Rupees 1,000, by which the District Engineer had a road roughly made, shews how much they are in favor of the project.

42. In irrigation works also, very important undertakings have not been commenced, owing to the restrictive orders, which would, if constructed, be of immediate benefit to Government and the people. Three of these are:—The Gubbada annicut, the project for throwing an additional six feet of water into the Kondakerla Ava; and the cultivation of the waste area of three to four square miles between Wattada and Pentacottah.

43. One circumstance during last year, connected, however, with the past conduct of the public works, though with the district generally, and in all probability with future operations, is alluded to by Lieutenant Vertue, and may also be mentioned here, viz., the visit of the Collector of Vizagapatam to the Rajah of Jeypore, which has, in the opinion of the District Engineer, who accompanied the Collector, set at rest the question as to the best route to Jeypore, and dispelled the common idea that the climate is fatal to Europeans, and the country unapproachable, on account of the unfriendly disposition of the hill tribes. The route chosen on this expedition was *viâ* Parvatipore, which has been found much superior in many respects to the one *viâ* Madugole. A full report of the route and journey, however, has already been laid before Government, so that no further notice of the subject need be taken here.

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44. Drought to an extraordinary degree prevailed in this district last year; scarcely 15 inches of rain having fallen. The prices of labor, building materials, and articles of consumption, have risen very much, and a further increase on the latter is most probable, especially should a much larger number of European troops be stationed in the district.

GODAVERY DIVISION.

45. In this district, during the official year 1858-59, the expenditure has amounted to Rupees 4,12,529 (without deducting refunds), viz., on new works, Rupees 1,07,871, and on re-

pairs Rupees 3,01,658, while in the preceding year, Rupees 5,37,167 were expended. The difference is almost entirely under the head of new works, and may be accounted for by only three items in this class being excluded from the restrictive orders. These were, 1st. The barracks at Dowlaishweram for the Sappers and Miners. 2nd, The custom house at Cocanada. And 3rd, The irrigation and navigation canal from Weyairoo to Ellore. A few remarks on each of these will be made, before the general details of the district are entered upon.

46. The barracks were inspected by the Commander-in-Chief in the course of his tour, and are fully occupied by the Sappers and Miners, having been handed over to their commanding officer. The expenditure upon these buildings in 1858-59 was Rupees 41,740. All the bricks used in their construction were made with Ransom's patent machine, two of which, turning out 10,000 a day each, were at work for four months. The cost of the bricks was nine annas per mille, about the same as those of native make, but decidedly superior in quality.

47. The custom house at Cocanada, it was hoped, would have been completed by the close of the official year, but in consequence of the brick contractors having failed, both as regards the time of delivery and the quality of the material, these anticipations were not realized; it was expected, however, that the end of July would see it finished.

48. In irrigation, the only new work allowed to be prosecuted was, as above stated, the canal of irrigation and navigation from Weyairoo to Ellore. Rupees 33,109 were, during the past year, expended in excavating to a width of 15 yards the 10 miles of the canal, which had previously been done only to a partial extent, and in completing it, so that water might be brought down to Dendalore, where the high level canal from Bezwadah joins it. The Ellore canal was the reservoir, from which 30,000 acres were last year supplied with water, and 11,000 of these were not originally intended to be irrigated from this source. But on account of the scarcity of rain, 30 inches only having fallen during the year, the tanks on which they depended, could not furnish water sufficient for even the 1st crop, which consequently entirely failed—and at the urgent request of the Collector, these lands, assessed at about Rupees 30,000, were supplied from this source with water for their 2nd crop, which was thereby saved, and further loss of revenue averted.

49. Many of the tanks in the upper talooks retained a better supply of water than usual, having been attended to more carefully, and, generally, the works are in a satisfactory state.

50. The annicut has been repaired where such was required, the rough apron has had 61,845 cubic yards of stone added to it, near each of the wing walls, shewn by the previous years breach to be the weakest point; it has also been widened to 50 yards.

51. The river Godavery, in the past year, was for the first time used as a line of communication with the interior, and the only steamer that could be got has been kept constantly plying upon it since last July, in conveying salt, telegraph wire, &c., to inland stations, and in bringing to the coast firewood, and produce. The lock at the first barrier has been nearly finished, and although there has been less water in the river than for many years past, boats drawing two feet have been able to pass over the shoals. This year it is expected that a still greater depth of water will be available.

52. As the harbour dredges have arrived, the Coringa river will, it is hoped, be improved, and the depth of the river at Cocanada increased, so that small craft may unload inside the bar, which is in a satisfactory state.

53. On river embankments and their protective works, Rupees 10,143 were laid out. The operations consisting in 36,454 cubic yards of earth-work, and 12,000 tons of stone in groynes.

54. Out of the quarry 41,885 tons of stone have been hewn and despatched. During the early part of the year, owing to the restrictive orders, the workshop was not fully employed, but in the last quarter, there was a large demand for work, Government having ordered the route by the Godavery to be opened for transit, and the arrival of new machinery from England, giving an additional stimulus to operations. In the foundry 126¼ tons of castings have been turned out.

55. The year under review has been a most prosperous one throughout this district; for, although the rain-fall, as noticed above, was very deficient, the annicut with its attendant works, rendering the country in a measure independent of local rain, was the means of preserving the crops, and along with the navigation canals of the division proved the source of its wealth and

prosperity. Never before have the utility and value of these magnificent works been so fully and satisfactorily displayed as on this occasion. The crops in Tanjore having totally failed, and a dearth occurring in the southern markets from the general scarcity of rain throughout the Peninsula, the delta of the Godavery, where the crops, watered by artificial means, had been secured, became the emporium from which the wants of the country was satisfied, each village of the district contributed its quota, till no less a quantity than 24,00,000 Bengal maunds of grain of various kinds has been meted out between July and December 1858, to answer the demands. This timely and most urgently required supply would, however, have been of little avail, had the means of conveying it without delay to the coast not been at hand, and it was in this service that the benefit of the canals was so apparent. For, when the demand was first made, land transport could not have been used, and besides, even though the country had been in a fit state for it, the enormous quantity mentioned, could not have been conveyed the required distance in the short space of six months. In affording, therefore, a "silent highway," for the transit of that amount of food to a distance of 50 miles, the canals alone were, in the District Engineer's opinion, the means of effecting a saving to the population in the single item of transport of Rupees 10,30,000, which was, consequently, so much money gained. Over and above this, must be reckoned the net sum realized from the crops, before the full benefit derived from the irrigation and navigation works of the district can be seen, and Captain Rundall estimates that the ryots' profits amounted last year to Rupees 24 per acre.

56. The great inducement, accordingly, held out to agricultural pursuits, operated injuriously on the Public Works, for an increase of 50 per cent. to wages was not a sufficiently tempting bait to enable the district Engineer to obtain the amount of labour he required.

57. The export and import returns from Rajahmundry, as well as the traffic on the main lines of navigation, will now be considered, as shewing, from another point of view, the prosperous condition of the division.

58. Firstly.—The value of exports from Rajahmundry in 1858-59, amounted to no less than Rupees 40,32,359, which is more than 11 lacs in advance of the preceding year, (Rupees 29,30,007,) and more than double that of 1856-57. The articles on which the increase principally occured were rice, paddy, Bengal gram, and pulses.

59. Secondly.—The imports into Rajahmundry last year, were of the value of Rupees 7,71,420, besides Rupees 9,81,855, in specie landed at Cocanada, against Rupees 5,10,899 and Rupees 1,46,700 in specie of the previous year. In the article of twist alone, the increase was Rupees 1,46,406. In addition to the above imports and specie, Accountant General's bills to the amount of Rupees 12,20,000 were negotiated during the past year. This very large circulation of money vouches of itself, for the healthy condition of the agriculturists' finances, and that the present revenue of 29 lacs is paid without any strain.

60. Thirdly.—The traffic on the main lines of navigation, which is shewn in the following statements, prepared under Extract Minutes Consultation, 5th July 1856, No. 1110, is very satisfactory :—

Statement of the Traffic showing the number of Boats and Rafts passing through the undermentioned Locks in Godavery division.

Months.	Grain.		Other agricultural produce.		Salt.		Lime and Shell Chunam.		Firewood.		Other Goods.		Empty Boats.	Total.	Passenger Boats.	Paddle Boats.	Transit Boats.	Total.	Grand Total No. of Boats.	Rafts of Timber.		Rafts of Bamboo.		Total Rafts.		Total value of Goods.	Remarks.
	Boats.	Value.	Boats.	Value.	Boats.	Value.	Boats.	Value.	Boats.	Value.	Boats.	Value.								No.	Value.	No.	Value.	No.	Value.		
DOWLAISHWERAM.																											
1858.																											
May......	48	8,573	190	71,358	49	8,338	5	160	12	349	113	29,263	184	601	17	35	104	156	757	42	11,344	97	1,614	139	12,958	1,30,999	
June......	66	12,832	135	55,098	61	12,496	0	0	83	1,388	170	53,710	246	761	10	21	104	135	896	96	5,805	96	2,410	192	8,215	1,43,739	
July......	78	15,810	92	42,112	64	15,122	6	108	24	316	145	67,181	246	655	4	14	108	126	781	153	3,563	48	1,133	201	4,696	1,46,035	
August......	223	48,120	48	22,827	70	17,607	9	326	22	178	122	46,609	351	845	5	24	130	159	1,004	3	463	5	90	8	553	1,36,220	
September..	486	1,04,514	65	32,099	42	10,626	8	310	49	392	105	25,549	586	1,341	8	20	130	158	1,499	20	2,369	7	132	27	2,501	1,76,015	
October......	402	96,801	87	60,369	59	14,633	8	171	36	380	83	39,637	468	1,143	6	26	130	162	1,305	11	1,357	11	165	22	1,522	2,13,543	
November...	191	40,533	208	1,23,498	51	14,472	14	165	65	790	120	37,296	478	1,127	5	19	130	154	1,281	59	11,841	18	301	77	12,142	2,28,896	
December...	111	29,118	126	69,172	50	12,031	11	535	56	340	139	22,841	367	860	18	33	81	132	992	66	3,839	39	1,290	105	5,129	1,39,169	
1859.																											
January....	343	92,108	87	50,058	21	5,172	12	163	33	350	68	23,454	419	1,013	16	33	107	156	1,169	96	6,086	84	2,177	180	8,263	1,79,568	
February...	326	88,615	109	66,986	44	16,800	11	240	98	808	126	24,870	520	1,234	17	38	120	175	1,409	99	19,051	162	4,632	261	23,683	2,16,002	
March......	74	13,085	185	97,101	21	5,346	17	149	33	452	105	10,379	316	754	22	25	127	174	928	22	950	83	2,189	105	3,139	1,29,654	
April.........	86	17,366	232	92,324	19	9,405	11	266	2	13	103	23,818	303	785	11	17	122	150	935	166	15,638	162	3,314	328	18,952	1,62,144	
BOBBERLUNKAH.																											
1858.																											
May......	35	5,026	31	2,184	9	2,000	1	53	2	41	44	20,190	79	201	10	28	...	38	239	1	163	12	2,308	13	2,471	31,977	
June.........	46	7,938	20	6,786	12	2,775	0	0	0	0	55	16,664	98	231	14	11	...	25	256	8	606	11	3,028	19	3,634	37,797	
July......	45	8,318	12	4,712	10	2,350	0	0	0	0	69	14,662	75	202	10	9	...	19	221	11	1,032	4	96	15	1,128	31,170	
August......	27	5,688	10	3,754	8	1,450	2	36	0	0	64	14,899	56	167	4	8	...	12	179	0	0	0	0	0	0	25,827	
September...	16	3,400	11	2,639	4	1,050	0	0	0	0	32	10,392	39	102	2	10	...	12	114	2	16	1	6	3	22	17,503	
October......	10	1,624	6	1,747	11	8,175	2	15	0	0	40	6,378	35	104	4	12	...	16	120	5	363	3	374	8	737	18,676	
November....	7	1,376	32	8,469	15	3,825	1	18	1	209	44	4,247	88	188	10	9	...	19	207	1	109	13	1,502	14	1,611	19,755	
December...	2	480	14	4,197	2	200	0	0	0	0	11	1,211	18	47	1	8	...	9	56	2	138	2	130	4	268	6,356	
1859.																											
January......	9	1,530	6	2,602	11	2,050	4	139	0	0	72	13,019	91	193	7	14	...	21	214	4	1,048	11	1,208	15	2,256	21,596	
February ...	16	3,536	12	4,074	5	900	5	81	0	0	89	11,302	132	259	4	20	...	24	283	8	1,739	18	1,621	26	3,360	23,253	
March... ...	8	1,648	36	13,855	8	1,700	8	195	0	0	62	9,890	118	240	15	19	...	34	274	11	2,967	25	9,192	36	12,159	39,447	
April.	2	360	31	13,559	7	1,713	9	237	4	209	85	16,847	94	232	13	18	...	31	263	11	2,316	23	1,747	34	4,063	36,988	
VIZAIWERAM.																											
1858.																											
May.	136	25,600	98	38,769	25	3,600	8	310	16	462	79	14,756	212	574	56	16	...	72	646	4	1,302	126	3,167	130	4,469	87,966	
June.......	132	24,270	75	30,703	30	5,110	0	0	4	67	131	50,631	227	599	9	28	50	87	686	50	2,132	50	966	100	3,098	1,13,879	
July...	163	30,945	55	20,155	38	8,260	18	383	10	306	111	38,364	274	669	7	29	50	86	755	40	874	30	574	70	1,448	99,861	
August.....	272	59,376	21	8,070	44	8,490	23	565	4	124	129	44,438	503	999	3	26	50	79	1,078	0	7	9	928	9	935	1,21,998	
September...	581	1,29,152	28	12,800	24	5,720	13	353	9	315	77	25,779	565	1,297	5	22	48	75	1,372	24	185	24	1,108	48	1,293	1,75,412	
October.......	453	1,05,616	41	2,141	39	9,110	11	340	9	520	65	31,704	402	1,020	5	32	50	87	1,107	89	1,839	100	3,365	189	5,204	1,73,635	
November...	268	55,176	135	66,125	22	4,690	18	584	9	464	83	29,724	375	910	11	32	60	103	1,013	6	2,822	19	2,846	25	5,668	1,62,431	
December...	160	35,304	88	36,290	28	5,580	13	564	9	386	102	12,141	353	753	12	59	66	137	890	202	3,418	118	3,970	320	7,388	97,653	
1859.																											
January.....	365	94,887	49	21,957	19	3,990	24	815	27	900	62	9,890	381	927	9	41	53	103	1,030	192	4,153	160	3,342	352	7,495	1,39,934	
February....	433	1,06,760	75	41,865	28	5,380	20	772	23	588	80	14,769	440	1,099	20	57	65	142	1,241	162	3,538	177	3,668	339	7,206	1,77,340	
March........	100	23,018	122	59,226	15	3,010	30	1,190	18	394	63	9,775	286	634	12	21	31	64	698	232	7,480	150	3,249	382	10,729	1,07,342	
April.........	153	14,704	208	88,792	31	7,000	16	590	30	614	105	17,376	283	826	8	22	90	20	946	332	6,065	103	2,404	435	8,469	1,37,545	

61. The results for the past year as compared with its predecessors are as follows:—

Eastern Main Canal, Dowlaishweram Lock.

	Boats	Tonnage.	Rafts.	Value.	
	11,119	1,66,785	1,645	20,01,984	in 1858-59.
	7,830	1,17,450	1,526	15,61,490	„ 1857-58.
Inc.	3,289	49,335	119	4,40,494	

Central Main Canal, Bobbarlunkah Lock.

	2,166	32,499	187	3,10,345	in 1858-59.
	2,078	31,170	164	3,53,760	„ 1857-58.
Inc.	88	1,329	23	Dec. 43,415	

Western Main Canal, Vizeswaram Lock.

	10,307	1,54,605	2,399	15,94,996	in 1858-59.
	7,638	1,14,570	840	10,69,084	„ 1857-58.
Inc.	2,669.	40,035	1,559	5,25,912	

62. From this it will at once be seen, that there has been an increase during last year in each particular, (the value of goods carried on central main canal alone excepted), while at the same time, that item in the western main canal has increased in a greater proportion than the number of boats. Before quitting the subject of the trade in this district, it may be well to compare the aggregate number and tonnage of the arrivals at, and despatches from, the ports of Coringa, Cocanada, and Nursapore, during last year and the preceding, &c.

	Arrivals.		Despatches.	
	No.	Tonnage.	No.	Tonnage.
In 1857-58	387	89,772	443	97,593.
1858-59	465	1,22,209	456	1,20,570.

A very considerable increase is thus exhibited in this branch of traffic also.

63. Mr. Dykes has, during the year under review, made the investigation ordered by Government into the extent of land irrigated from the annicut channels, and the result is, that the returns by the revenue department have been found to be understated to the following extent, in Rajahmundry 56 per cent., in Masulipatam 86 per cent., while in seven villages in the Mogultore talook, the enormous discrepancy of 128¼ per cent., has been shewn. In the survey of Rajahmundry and Masulipatam, Mr. Dykes adhered to the strict "letter" of his instructions, as to the number of villages to be measured, while, if he had acted in that as in other points in the "spirit" of the orders, Captain Rundall has little doubt, but that the difference in the returns from these districts would have been much greater. Of this, however, he is satisfied, that the extent of land irrigated was about 700,000 acres in all, and the supply of water conveyed during the height of the cultivating season, was at the rate of nearly one million cubic yards per hour.

Kistnah Division.

64. In this district, the expenditure on new works and repairs during the past year, has amounted to Rupees 2,25,471, which includes a sum of Rupees 1,995 from the discretionary funds. Besides this, Rupees 33,952 were paid for machinery, and Rupees 2,954 in conveying the same from Masulipatam Bay and fitting it up at Bezwadah. In Masulipatam district, a further sum of Rupees 3,726 were expended from the local ferry funds, in constructing two large new ferry boats, six points, and several cattle ghats, also in commencing a masonry one at Bezwadah. The total of these various items comes to Rupees 2,66,103. The expenditure in 1857-58 was Rupees 2,61,897.

65. The restrictive orders of Government, and the great difficulty in procuring a large supply of laborers in any one particular spot, have checked the operations of the department to a very considerable degree in this district.

66. The last of these was felt most severely on the Masulipatam canal, the works on which are now in a zemindary, and from various causes, the amount of labor, that it should attract and requires, is not available. Notwithstanding this, however, much progress was made during last year, and the canal opened to Nedamole, within 10 miles of Masulipatam. Rupees 38,940 (including Rupees 1,834 for machinery), were expended upon it in 1858-59; the operations consisting in the removal of 4,43,321 cubic yards earthwork, the construction of a syphon tunnel at Inampoody, a lock and calingulah with accommodation bridges, (one brick arch of 20 and three of 5 feet span) at Veerunky, and the Duggoomully sluice.

67. The principal other works under execution during last year were:

The operations for improving and strengthening the east bank of the river Kistnah from Yennamalacoodroo to Mapidavy, 33 miles. Of the earthwork of this undertaking, 1,02,503 cubic yards were finished, at a cost of Rupees 8,746.

The new channel of supply to Manulla, Malabarry, Nisengaroy, and Yedlacodoos, has been begun, and Rupees 1,738 were spent in removing 26,048 cubic yards of earthwork, and constructing a fine, 3 vent head sluice.

The road from Ebrampatam to the Nizam's frontier is metalled, and in very fair order for 50 miles. Rupees 14,298 were last year expended upon it, and besides 17 miles of metalling, and 11 bridges built, 17 tunnels and nine small road dams were constructed. It is, however, a matter of very great importance that this line of communication be extended to meet the fine road in Hyderabad, as soon as possible.

68. Traffic throughout the division has much increased during last year, and more particularly on the Hyderabad and northern line, but as the greater portion of the traffic on this road passes during the night, the returns cannot be relied upon as correct. On the river also, the number of boats, (not belonging to Government), which passed through the head locks at Bezoarah and Seetanagrum, was very much in excess of the preceding year. The following are the statements of the traffic on the Kistnah during 1858-59 required by Government:—

Statement of the Traffic showing the number of Boats and Rafts passing through the undermentioned Locks in Kistnah division.

Months.	Grain.		Other agricultural produce.		Salt.		Lime and shell chunam.		Firewood.		Other goods.		Empty Boats.	Total.	Passenger Boats.	Paddle Boats.	Transit Boats.	Total.	Grand Total. No. of Boats.	Rafts of Timber.		Rafts of Bamboo.		Total Rafts.		Total value of Goods.	Remarks.
	Boats.	Value.	Boats.	Value.	Boats.	Value.	Boats.	Value.	Boats.	Value.	Boats.	Value.								No.	Value.	No.	Value.	No.	Value.		
BEZOARAH LOCKS.																											
1858.																											
May	13	2,678	1	12	...	...	...	...	...	...	...	...	16	30	...	...	...	...	30	3	400	4	390	7	790	3,480	
June	16	3,585	3	72	...	...	...	...	...	...	...	...	35	54	...	...	...	...	54	14	2,118	3	248	17	2,366	6,023	
July	12	2,308	12	4,905	...	...	...	...	...	...	25	...•	17	66	...	...	...	...	66	3	135	2	76	5	211	7,424•	• Containing telegraphic wire the value of which is not known.
August	5	1,132	38	31,531	...	...	...	...	...	...	...	...	10	53	...	...	...	...	53	2	42	4	122	6	164	32,827	
September	29	6,812	25	23,577	...	...	...	...	...	...	...	...	26	80	...	...	...	...	80	7	1,972	1	30	8	2,002	32,391	
October	10	2,544	34	36,518	...	...	...	...	...	...	3	140	20	67	...	...	...	...	67	...	...	...	...	...	...	39,202	
November	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Closed for removing silt.
December	8	1,355	8	2,858	...	...	...	...	...	...	...	...	23	39	...	...	...	...	39	1	21	...	...	1	21	4,234	
1859.																											
January	8	917	...	...	...	...	1	45	...	...	...	...	14	23	...	...	...	23	23	4	455	2	245	6	700	1,662	
February	1	60	...	...	...	...	...	...	...	...	...	...	10	11	...	...	...	...	11	7	479	17	1,636	24	2,115	2,175	
March	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Laid bare for the purpose of removing silt.
April	4	378	...	...	...	...	...	...	...	...	...	...	19	23	...	...	...	...	23	3	206	9	1,997	12	2,203	2,581	
SEETANAGRAM LOCK.																											
1858.																											
May	42	5,436	...	...	...	...	...	...	...	...	1	19	44	87	...	...	...	...	87	14	2,598	8	368	22	2,966	8,421	
June	34	7,307	...	...	...	...	...	...	...	...	3	900	31	68	...	...	...	...	68	20	2,965	17	1,081	37	4,046	12,253	
July	26	5,989	5	1,938	...	...	...	...	...	...	4	735	34	69	...	...	...	...	69	5	530	6	208	11	738	9,400	
August	27	3,774	9	5,188	...	...	...	...	...	...	1	300	31	68	...	...	...	...	68	1	195	5	511	6	706	9,868	
September	11	1,874	2	520	...	...	...	...	...	...	...	...	27	40	...	2	...	2	42	1	12	...	...	1	12	2,406	
October	23	3,296	1	1,480	...	...	...	...	...	...	1	30	9	34	...	...	...	...	34	...	...	...	...	...	...	4,806	
November	4	521	...	...	...	...	...	...	...	...	...	...	11	15	...	...	...	...	15	...	...	...	...	...	...	521	
December	4	376	...	...	...	...	...	...	...	...	...	...	2	6	...	...	...	...	6	4	108	4	246	8	354	730	
1859.																											
January	1	180	...	...	...	...	...	...	...	...	...	...	6	7	...	6	6	...	13	19	1,626	20	2,841	39	4,467	4,647	
February	4	201	...	...	...	...	...	...	...	...	...	...	6	10	...	...	...	...	10	17	4,345	15	5,656	32	10,001	10,202	
March	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Laid bare for the purpose of removing silt.
April	8	798	...	...	...	...	...	...	...	...	...	...	3	11	...	...	...	...	11	5	297	8	576	13	873	1,671	

69. From these returns it will be seen, that the first named lock was twice closed in the course of last year for the removal of silt, during the months of November 1858 and March 1859, while the second was also shut during the latter month for the same purpose. From the subjoined comparative view of the number of boats and rafts, with the value of goods which passed through these locks in 1857-58 and 1858-59, it will be seen that all have increased considerably, notwithstanding the interruptions abovementioned.

	Boats.	*Rafts.*	*Value of goods.*	
Bezoarah........	446	86	1,31,299	
Seetanagrum......	423	159	56,258	
	869	245	1,87,557	in 1858-59
	338	231	1,67,402	„ 1857-58
	531	14	20,155	

70. Irrigation has extended considerably in this district last year, which was a most favorable one for the ryots, and the land revenues of Masulipatam and Guntoor have accordingly advanced also. In the former, the number of acres irrigated is stated by the Collector at 63,108, exclusive of dry crops, deriving benefit from the Kistnah water, and the increased revenue due to irrigation at Rupees 64,835. In the latter, the area watered is returned at 44,190 acres, and the revenue, on an average of five years prior to the construction of the annicut, at Rupees 1,20,826. The revenues of these Collectorates during last year and its predecessor are as follows:—

	1857-58.	1858-59.
Masulipatam.....	10,79,730	12,28,000
Guntoor..........	16,43,478	18,00,278

71. The Board of Revenue having interdicted a water cess being levied on the holders (either under Government or inam), of "mamool wet" land, the revenue in Masulipatam has not increased so much as it would otherwise have done; nor can an increase be looked for as long as that regulation is in force, for no one would take and irrigate *dry* land at a cost of Rupees 3½ per acre for water duty, if by any means he can obtain ground deriving the same benefit from the annicut, and exempted from that tax.

Nellore.

72. The amount of expenditure in Nellore in 1857-58 was Rupees 2,23,569, while during last year it rose to the very large sum of Rupees 3,55,371, the component parts of which are:—

	New works.	*Repairs.*
Irrigation works..	56,344	2,37,913
Communications	19,040	36,797
Buildings	1,708	3,567
In all Rupees... ...	77,092	2,78,277

73. On the construction and repair of irrigation works by far the larger portion of the above sum was expended, Rupees 2,94,257 having been laid out upon them. This was occasioned by the very extensive injuries sustained by that class of works in November 1857, and to the urgent necessity that existed for their being restored efficiently and without loss of time, in order that neither the Government revenue, nor the inhabitants of the district, whose prosperity or adversity depend upon them, might suffer.

74 The principal work injured was the Pennair annicut, and in its re-construction almost the entire sum under that head in new works was incurred. This outlay, however, was of no permanent advantage, for after ¾ths of the annicut had been re-built, at a cost of Rupees 51,327, it was seriously damaged in September 1858, by an unexpected fresh, which carried away a portion of the cut stone aprons, and before the injury could be repaired and the work completed, two-thirds of the entire annicut were swept away by the unusual and severe flood of October. Government, deeming it unadvisable to re-construct it a second time on the same section, in March, 1859, instructed Colonel Cotton to inspect the site, and decide what should be done. After careful investigation, a section similar to that at Bezoarah, which has successfully braved the heavy floods of the Kistnah, was fixed upon, and on 25th April Government sanctioned an immediate expenditure of Rupees 28,000 for its construction. Previous to this, however, (on 15th March) preliminary operations had been

commenced in the collection of materials, &c., and before the end of the official year, Rupees 3,802-2-10 had been disbursed on account of the new work, which, it is estimated, will cost Rupees 74,500.

75. Of the other irrigation works damaged in 1857, (upwards of 400 in number and containing nearly 2,000 breaches,) the Nellore and Ulloor tanks are the largest and most important. The first of these was so far restored during the past year as to retain its full quantity of water, but as the heavy rains at the commencement of the monsoon breached the Ulloor tanks again at an unrepaired, but unlooked for place, five-eighths only of the supply it could have held were preserved. The immense demand for labor could not be met, and thus the works did not progress as fast as was wished and required. However, no fewer than 28,225 cubic yards of tanks, channels, &c., were excavated, and 35,95,918 cubic yards repaired.

76. On the communications of Nellore, there are few remarks to be offered, as the restrictive orders have prevented any work of magnitude from being proceeded with: 291 miles, however, have been put in a satisfactory state of repair.

77. The only new works executed have been upon Budget Nos. 495, 374, 378, 499 and 87, regarding which a few words may be said. For the masonry works on trunk road No. 6, the first of the above, Rupees 20,000 were sanctioned in January, too late, however, for any thing being done, before the close of the official year, beyond the mere preparation of materials, upon which Rupees 3,919 were expended. On the second, the road from Ulloor to Nellore, an outlay of Rupees 5,264 has nearly completed the metalling, and emergent repairs have been effected. Of No. 378, the road from Nellore to Gungapatam, eight miles, with minor masonry works, have been almost finished, and most of the entire line opened for traffic. Expenditure Rupees 1,217. Of the ten tunnels on trunk road No. 6, (No. 499) four have been sufficiently advanced as to allow of the road being opened for traffic. The tunnel on same road, consisting of nine vents of three yards span, sanctioned on 15th March 1858, and commenced on the following month, was finished within the year at a total cost of Rupees 2,501, No. 87. The bridge across the Muldavy, the completion of which was sanctioned on 8th April 1858, was finished in April 1859. Total expenditure Rupees 3,252.

Chief Engineer's Order, No. 7037, dated 15th January 1859.

CUDDAPAH.

78. The expenditure in this district, during the official year under review, has been Rupees 1,48,017, and, though exceeding that of the previous year, (Rupees 1,09,561,) yet it has been in no degree commensurate with the requirements of the district. These, however, cannot be met as long as the restriction is kept upon so many important works. As will be seen from the subjoined classification, the outlay of 1858-59 has been almost entirely upon repairs. The items are as follow :—

	New works.	*Repairs.*
Irrigation works	16,806	79,066
Communications...	11,352	36,909
Buildings..	1,252	2,632
Rupees	29,410	1,18,607

79. The following short review of the operations and administration during last year, will shew what has been done and what is still required.

80. The new head, with sluice, to the Yenamalachintala channel, has been completed, at a total cost of Rupees 5,476.

81. The restoration of this channel, which was destroyed by the unusually heavy fresh on the Cheltravutty of May 1851, was not fairly commenced till March 1857, in consequence of objections being raised by the ryots in the Bellary district, to the new cut being made through their land; sanction was subsequently given to the project, but at such a time, that when the river again rose, the works were not sufficiently advanced to resist it, and a portion was destroyed. It was, however, finally completed on 23rd April last.

82. The head sluice and supplying channel into the Ooparapully and Pullavole tanks. These were also completed in April last, and proof has been already given of their utility, for though unfinished when the Pennair was in flood, they did good service, and the revenue under them has increased from Rupees 862 in 1857, to Rupees 1,330 in 1858.

83. The road from Mudnapully to Seeglybyle, eight miles and three furlongs. With the exception of some small works not included in the estimate, this road, five yards wide, and a good specimen of the communications required in Cuddapah, is finished with gravel, tunnels, and road dams. When the additional four bridges and two tunnels are built, the cost of the line will have been about Rupees 1,500 per mile.

84. Government having withdrawn, on 18th December 1858, the restriction on the road from Ootcoor to Cuddapah (two miles); it has been completed, and is of great advantage to the traffic between Chittoor and Bangalore, as it leads from Cuddapah towards the Goolcherroo ghaut.

Proceedings of Government, August 11th, 1859, No. 1923.

85. This ghaut, though in excellent order, will be much benefitted by the parapet walls lately sanctioned, as the bandymen are careless, and accidents are not unfrequent.

86. The maintenance allowance of Rupees 14,000 has enabled the District Engineer to keep the trunk road No. 11 in repair, but bridges are much wanted upon it, a part of the above allowance being unavoidably misappropriated in sloping the banks of the rivers, so that the line may be undamaged for traffic.

87. The roads from Cuddapah to the top of the Dorinal pass on the one hand, and towards Bellary on the other, have been much improved by the outlay upon them of Rupees 5,265, (the annual sanction,) and Rupees 7,950, respectively.

88. The repairs in the district have been almost entirely upon irrigation works and communications, the items of which are as follows: 337 tanks, 48 channels, and 285 miles of roads. In the first of the above classes of works, no fewer than 94 were seriously damaged in the south eastern talooks, by the very heavy fall of rain on 16th October last. Of that number 55 were situated in the Sidhout talook, and many of them were the same that suffered in 1857.

89. Roads are the great desideratum in this district. Their want was more severely felt than ever, during last year, and operated most injuriously upon the welfare of the ryots, for owing to there being so few, and the bad state of existing lines, they were unable to send their grain to the Mysore markets, where they could have realized a profitable return upon their crops. The soil of the district is very favorable, so that roads for cart traffic could be made with a small outlay, and as Government has sanctioned a very considerable increase to the discretionary allowance for roads, existing lines will, it is expected, soon be put in better order, and it is anticipated that next year's report will be more cheering, as it will, in all probability, state, that the communications have been put in good order, thereby meeting, as far as the restrictive orders will premit, the requirements of the district.

90. Two occurrences during the past year, connected with this district, claim notice. These are, the transfer to Kurnool of three of the northern talooks, and the commencement of the north western railway.

91. The transfer to Kurnool of the Cumbum Doopaud and Koilgoontla talooks, has had the effect of reducing the area of this district to 9,000 square miles, and has been the means of lessening, and, in some cases, removing the very great inconveniences experienced by the District Engineer, from the deficiency of the communications in this immense district, where the distance between some of the works was upwards of 200 miles.

92. The commencement of the north western railway is a circumstance which draws special attention to the state of the communications of Cuddapah. It enters the district at Baulapilly, and proceeds towards Bellary, passing through the Chitwail talook and close to the town of Cuddapah. For 69 miles of its length in this district the line runs between two chains of hills untraversed by any road, there not being one fit for the passage of a loaded bullock. That the country should be immediately opened up by roads to act as feeders to the railway, and to confer upon the people the benefits of this great national work, is a point upon which there cannot be two opinions. Two very important lines are, from Royachoty *via* the Sannepoy ghat to Rajumpett, where there is to be a railway station, and from Cuddapah towards Kurnool and Secunderabad. The former will bring the produce of four large talooks to a point of transport, and act as a stimulant to the trade of a large part of the district; the latter, though at present in a bad state of repair, (impassable during the monsoon,) will, it is expected, not long remain in that condition, as Government have called for an estimate for putting it in thorough order.

Bellary.

93. In the official year now under consideration, the expenditure in Bellary district amounted to Rupees 2,72,319, an increase of nearly 45 per cent. upon the outlay in 1857-58 (Rupees 1,88,863). The items of the past year's outlay are as follow:—

	New Works.	*Repairs.*
Irrigation works..............	4,651	1,52,899
Communications..............	1,217	53,985
Buildings......................	47,879	12,288
Rupees....	53,147	2,19,172

94. From this, it will at once be observed, that the attention of the department has been engrossed chiefly by the repairs of the important irrigation works of the district, as well as its communications. The only new works of any moment being military buildings, which consisted mainly of the hospital for European troops at Bellary, and the married men's quarters at Ramandroog, involving an expenditure of Rupees 42,908. These have progressed satisfactorily, notwithstanding that timber was with difficulty procured, as the contractors in many cases were unwilling to fulfil their bargains, and even sold the wood in open market, finding that the price there obtainable, was higher than that specified in their contracts, which had been entered into some years before.

95. In the hospital, the whole of the masonry of the lower storey is completed, the upper storey nearly so, and the flooring between them well on hand. Of the quarters at Ramandroog, three ranges are finished; the walls of the other seven are well up, and materials sufficient to complete them collected.

96. In the repair of irrigation works, as above shewn, the bulk of the expenditure has been incurred, the larger portion of which has been in executive ranges, Nos. 1, 5, and 6. A few remarks upon the work done, and the present state of the district, are subjoined.

97. In executive range No. 1, the Toongabudra channels and Darojee tank are the only works requiring notice. The former are in a satisfactory state, with an improved cultivation under them; the latter has had its calingulah raised three feet, but the District Engineer is of opinion that, on, further examination, it will be found that at a small cost, its capacity could be improved, so that an additional quantity of 20 million cubic yards of water could be contained in it.

98. In executive range No. 2, eighty-seven tanks and five channels have been repaired, but much still remains to be done. In No. 3, there are few tanks, and the soil almost entirely black cotton. No.4 was sadly neglected by the subordinate in charge, but it is hoped that Mr. Powell will soon have it in a very different state.

99. In executive range No. 5, the Amantapoor and Singanamullah tanks have been put in thorough repair. It is proposed to add three feet to their calingulahs and bunds, and by the increased store of water, to irrigate a large extent of land.

100. The state of the irrigation works in executive range No. 6, is such that, although the large sum of Rupees 57,275 was expended upon them last year, further extensive repairs are urgently required, last October's heavy rains having seriously injured them.

101. The requirements of the district are roads, irrigation works, and European supervision. In executive range No. 4, all the roads require bridges. The Toongabudra project, however, is the work that will confer most benefit upon this range. In No. 5, the completion of trunk road No. 12, which is in abeyance owing to the restrictive orders, and of the line from Amantapoor to Tandputtry, are the most emergent, to which may be added the road from Dhurmaverum to Tandputtry *viâ* Tandmurry; however, an allowance of Rupees 100 a mile would effect a great deal of good in this and the adjacent range, as the soil is favorable. In range No. 6, which is hilly but with a good soil, cross roads would be of great service, and Rupees 100 a mile, would render the undermentioned lines, which at present are almost impassable, fit for cart traffic. These are:—

Roads from Penagondah to Bookaputanum..	20	miles.
,, ,, Agraharum to Dhurmaveram......	18	,,
,, ,, Penacondah to Muducksurah... ...	30	,,
,, ,, Muducksurah to Mudodee..........	20	,,
,, ,, Somunadapully to Hindapoor.......	18	,,

102. The hot season of the past year in this district was very sickly; a great scarcity, also,

prevailed as from May till October no rain fell. The people were in a state of great distress, and suffered heavy losses in the first part of the year. One thing still remains to be mentioned, and that is, the transfer during the past year to Kurnool, of the Punchapollium talook, which formed part of executive range No. 4 of this district.

KURNOOL.

103. The sum expended in Kurnool during the official year 1858-59, was only Rupees 67,132, exceeding by a little the outlay of the preceding one, which was Rupees 59,033. The restrictive orders still in force have caused the expenditure to be so small, and at the same time to be limited in a great measure to repairs, (and those the most urgently required,) as will be seen from the following classified statement.

	New Works.	*Repairs.*
Irrigation works..............	0	16,915
Communications..............	20,882	19,400
Buildings......................	7,778	2,157
Rupees....	28,660	38,472

104. The operations on the Nundy Cunama pass, on the bridge over the Hindree, and on the Cumbum fort, are the only items in new works that require notice. They will be considered in the first place, then the repairs in the district and its requirements, a few remarks on the events of the last year being added.

105. The Nundy Cunama pass is intended to be the line of communication between the Cumbum talook and the western part of the district, from which it is separated by the Nulla Mulla hills, a chain which runs from the Kistna to the Pennair, and which, besides shutting out all communication, affords a refuge to the robber bands of Rohillas and other predatory tribes. The undertaking was commenced in December last, but owing to a dread of sickness, bricklayers, even with the inducement of high wages, could not be prevailed upon to work. Consequently, although nearly all the earthwork of the ghaut, with the heavy cutting, is finished, and 6¼ miles of the road opened, the masonry has made little progress, 14,415 cubic feet of the bridge at Metta and a 4¼ feet span tunnel, being all that has been accomplished. Instead, therefore, of Rupees 20,000, as was anticipated, having been expended upon it before the close of the official year, Rupees 12,950-15-9, was the outlay incurred. The Metta bridge was expected to be finished in May 1859.

106. On the bridge over the river Hindree, Rupees 6,000 only were laid out in the course of last year, and little progress was made, as work was suspended for the greater part of the time. Latterly, however, operations were pushed forward more vigorously; a stone quarry has been opened near the bridge, and a tramway laid down between them, so that at no very distant date its completion may be looked for.

107. The destruction of the fort at Cumbum was finally accomplished on 1st December last.

108. Although the following irrigation works, *viz.* 88 tanks, 11 channels, and 8 wells have been repaired during the year under review, at a cost of Rupees 16,915; yet the condition of most of the tanks, is anything but satisfactory, and many of them are nearly ruinous. The works of this class in the newly added talooks, Cumbum and Dorpaud, will require constant and careful supervision; many of them are of great importance.

109. The expenditure of Rupees 19,400 upon the repair of 175 miles of roads and two bridges, has maintained the communications in a very fair state. The want of bridges on the roads, however, detracts much from their value to the district.

110. The requirements of Kurnool are the restoration of irrigation works which have fallen to ruin; the thorough repair of those in existence, and a number of new ones; the completion, with bridges, &c., of the present lines of communication, and the opening out of new ones, cross roads to the principal villages as well as main lines. Of the latter three may be named, that over the Muntaral Canamah ghaut to Depaud and Guntoor, from Nundial towards Cuddapah and Madras, and from Kurnool to Hyderabad. The present road bettween the two last named places, is totally unfitted for such an important military line, as, in the rainy season, it cannot be used for several successive months.

111. The events of the past year, which will be noticed in the last place, are the change that has taken place in the designation of the district, and the addition to it of four talooks from the adjacent districts of Cuddapah and Bellary.

112. On the 1st of July 1858, Kurnool was converted into a regulation district, by the abolition of the single office of the Commissioner, who was chief civil authority in the revenue and judicial departments, and the appointment of a Collector with his Assistants at Kurnool, and the establishment of a Judge's court at Nundial.

113. The transfer from Cuddapah of the Cumbum, Doopaud and Koilgoontla talooks, and from Bellary of the Punchapollium talooks, has more than doubled the area of the Kurnool district, and added many valuable irrigation works to it.

CHINGLEPUT.

114. During the year 1858-59, Rupees 3,01,820 was the amount of expenditure in this district, while that of the previous year was Rs. 2,70,864. But instead of the two branches of outlay being within Rs. 28,000 of each other, as in 1857-58, that upon repairs in the year under review, was more than three times the amount expended on new works, as will be seen from the following abstract.

	New Works.	*Repairs.*
Irrigation works...	48	97,409
Communications...	26,262	1,21,101
Buildings	47,061	9,939
Rupees....	73,371	2,28,449

115. From the above, it will be observed at a glance, that new works have, with a very small exception, been limited exclusively to communications and buldings, and these will be considered in the first place.

116. The principal items of communications are—the road from Poonamallee to the Avady railway station, on which Rs. 16,962 was expended last year. This line is now metalled and completed throughout, with bridges and tunnels. The Sadras bridge, which was uncentered in August 1858, was finished on 30th April 1859. Outlay during the year Rs. 1,065. The bridge across the Kullaur, on trunk road No. 8, near Carangooly, to which two arches are to be added. The abutments, piers, and wings have been completed at a cost of Rupees 2,076, and it is expected that the work will shortly be finished.

117. In buildings, the main outlay (Rs. 39,092) has been upon military buildings, the chief of which are, the married men's quarters at St. Thomas's Mount, completed on 31st July 1858, the expenditure last year being Rs. 15,484. The European quarters at Poonamallee, on the partial improvement of which Rs. 6,784 were spent. The stables, &c., at St. Thomas's Mount, for the use of the royal artillery, completed on 31st December 1858, at a cost of Rupees 2,816, and the buildings at the same place for the accommodation of the horse battery, finished on 31st July last.

118. The only other item under this head deserving notice, is the District Engineer's office and work yard at Guindy, which were completed on 30th April 1859, at a total cost of Rupees 5,203, Rs. 5,199 being the expenditure of last year.

119. The odd sum of Rs. 48, entered under irrigation works may be explained before proceeding to consider the other matters connected with Chingleput. It was spent in maintaining the nursery for planting the sides of the Cumbum channel, a part of the Palar annicut, the operations on which are in abeyance, as the project is under the restrictive orders.

120. Although the large sums of Rupees 97,109, and Rs. 1,21,101 have been spent upon the repair of irrigation works (425 tanks and channels) and communications (200 miles of roads and 110 of canals, as well as two bridges,) much still remains to be done. Trunk road No. 1, though in good order for cart traffic, is not fit for the passage of vehicles, as it is much cut up by bandies, the drivers of which traverse the entire road, in place of keeping to their respective sides, regardless of the remonstrances of the people in charge of the line, who are too few in number to compel them. Trunk road No. 6 needs metalling, a bridge to be thrown over the Cortillair, and a road made across the Perrungedda backwater. Trunk road No. 8, requires to be newly metalled for the last ten miles of its length in this district; and a bridge across the Palar, where the old causeway was laid. In September 1858, Government sanctioned Rupees 1,000 for the clearance of this track, which was nearly accomplished, when in the end of April last, a fresh came down and buried it again. As this may often occur, and at any moment, a bridge is urgently required, if the traffic is to be maintained unimpeded. The road from Chingleput to Conjeveram is in very bad order, the allowance of Rupees 10 per mile being quite inadequate to put it in good repair, as it has been seriously injured. Instructions have been given by the District Engineer for the submission of a full report and estimate, together with a statement of traffic upon this road.

121. The prosecution of roads and irrigation works sanctioned and commenced but at present under restriction, and the construction of other new ones, constitute the requirements of this district.

122. During the past year the supervision of the eastern coast canal, which had before been a totally distinct charge, was added to the duties of the District Engineer of Chingleput, as the office of superintendent thereof was abolished* on 15th July 1858, under instructions from the Honorable the Court of Directors.

* E. M. Cons. No. 1223, of 29th June 1858, Despatch No. 5, dated 12th May 1858.

123. The following are the statements of traffic, &c., upon this line of communication, required annually by Government, which have been prepared by the Engineer of this district, and to which is added the statement called for under Extract Minutes Consultation 5th July 1856, No. 1110 prepared in the Central office:

TABLE A.

Comparative statement of Toll Collections on the northern branch of the eastern coast canal, for the official years 1857-58 *and* 1858-59.

Cargo.	1857-58.					1858-59.					Relative increase or decrease. Decrease in boats and increase in tonnage and toll for the official year 1858-59.					Remarks.
	Boats.	Tons.	Toll.			Boats.	Tons.	Toll.			Boats.	Tons.	Toll.			
Miscellaneous produce.....	6,909	75,058	18,764	8	0	6,886	78,516½	19,629	2	0	— 23	×3,458½	×864	10	0	
Salt.	2,415	54,585	13,646	4	0	2,225	51,720	12,930	0	0	—190	—2,865	—716	4	0	
Total..	9,324	1,29,643	32,410	12	0	9,111	1,30,236½	32,559	2	0	—213	×593½	×148	6	0	

This statement shews, that while the number of boats plying during last year, is 213 less than in the one preceding, the tonnage of goods and tollage received thereon have been increased in the aggregate. For although there was a large decrease as regards salt in boats, tonnage and toll collections, and a diminution in the *number of boats* conveying miscellaneous produce, yet in the quantity of the latter species of cargo, there was a large increase, and a corresponding amount of dues was levied accordingly. The surplus in these items being tons 593½ and Rupees 148-6-0 respectively.

TABLE B.

Comparative Statement shewing the increase and decrease of the number of Boats, Tonnage, and the amount of Toll collected in each sort of goods which arrived at the Cochrane's basin passing through the East Coast Canal during the Official year 1857-58 and 1858-59.

Names of articles carried.	1857-58.					1858-59.					Relative Increase and Decrease for the Official year 1858-59.										Remarks.
											Increase.					Decrease.					
	Boats.	Tons.	Toll.			Boats.	Tons.	Toll.			Boats.	Tons.	Toll.			Boats.	Tons.	Toll.			
			Rs.	A.	P.			Rs.	A.	P.			Rs.	A.	P.			Rs.	A.	P.	
Bark (Auvawrum)	2	21	5	4	0	4	21	5	4	0	2	0	0	0	0	0	0	0	0	0	
Do. (Valum)	13	83	20	12	0	7	31	7	12	0	0	0	0	0	0	6	52	13	0	0	
Bones	2	2	0	8	0	2	6	1	8	0	0	4	1	0	0	0	0	0	0	0	
Baggages	0	0	0	...	...	2	19	4	12	0	2	19	4	12	0	0	0	0	0	0	
Baskets	0	0	0	...	...	1	22	5	8	0	1	22	5	8	0	0	0	0	0	0	
Bengal gram	0	0	0	...	...	2	57	14	4	0	2	57	14	4	0	0	0	0	0	0	
Brooms	0	0	0	...	...	1	7	1	12	0	1	7	1	12	0	0	0	0	0	0	
Bangles	1	13	3	4	0	0	0	0	0	0	0	0	0	0	0	1	13	3	4	0	
Do. Stives	1	7	1	12	0	0	0	0	0	0	0	0	0	0	0	1	7	1	12	0	
Bricks	1	1	0	4	0	0	0	0	0	0	0	0	0	0	0	1	1	0	4	0	
Chillies	180	2,239	559	12	0	173	2,184¼	546	2	0	0	0	0	0	0	7	54½	13	10	0	
Charcoal	60	339	84	12	0	74	413	103	7	0	14	71¾	18	11	0	0	0	0	0	0	
Chunam	11	71	17	12	0	3	12	3	0	0	0	0	0	0	0	8	59	14	12	0	
Choyaroot	1	27	6	12	0	2	35¼	8	13	0	1	8¼	2	1	0	0	0	0	0	0	
Cocoanuts	5	8	2	0	0	3	19	4	12	0	0	11	2	12	0	2	0	0	0	0	
Cotton	1	19	4	12	0	1	20	5	0	0	0	1	0	1	0	0	0	0	0	0	
Casangoo	3	38	9	8	0	6	63	15	12	0	3	25	6	4	0	0	0	0	0	0	
Country potatoes	8	56	14	0	0	18	118	29	8	0	10	62	15	8	0	0	0	0	0	0	
Crabs	92	92	23	0	0	0	0	0	0	0	0	0	0	0	0	92	92	23	0	0	
Cocoanut plants	2	4	1	0	0	0	0	0	0	0	0	0	0	0	0	2	4	1	0	0	
Drum sticks	9	23	5	12	0	39	176	44	0	0	30	153	38	4	0	0	0	0	0	0	
Empty Boats	137	175	43	12	0	97	139	34	12	0	0	0	0	0	0	40	36	9	0	0	
Do. Rafts	...	...	0	0	0	1	1	0	4	0	1	1	0	4	0	0	0	0	0	0	
Faggots	1,341	27,905	6,976	4	0	1,429	32,125¾	8,031	7	0	88	4,220¾	1,055	3	0	0	0	0	0	0	
Furnitures	8	8	2	0	0	0	0	0	0	0	0	0	0	0	0	8	8	2	0	0	
Ghee dubbers	...	...	...	...	...	1	3	0	12	0	1	3	0	12	0	0	0	0	0	0	
Gingely Oil seeds	9	12	3	0	0	0	0	0	0	0	0	0	0	0	0	9	12	3	0	0	
Hides	5	14	3	8	0	4	14	3	8	0	0	0	0	0	0	1	0	0	0	0	
Jungle sticks	14	200	50	0	0	4	47	11	12	0	0	0	0	0	0	10	153	38	4	0	
Jaggery	1	7	1	12	0	1	6	1	8	0	0	0	0	0	0	0	1	0	4	0	
Luggage	...	...	...	...	...	49	56	14	0	0	49	56	14	0	0	0	0	0	0	0	
Lemons	...	...	...	...	...	4	16	4	0	0	4	16	4	0	0	0	0	0	0	0	
Mats	6	6	1	8	0	3	20	5	0	0	0	14	3	8	0	3	0	0	0	0	
Mangoes	1	7	1	12	0	1	4	1	0	0	0	0	0	0	0	0	3	0	12	0	
Mullets	3	7	1	12	0	0	0	0	0	0	0	0	0	0	0	3	7	1	12	0	
Nets (by Raft)	1	1	0	4	0	1	1	0	4	0	0	0	0	0	0	0	0	0	0	0	
Oysters	1	5	1	4	0	3	12	3	0	0	2	7	1	12	0	0	0	0	0	0	
Onions	...	...	...	...	...	3	44	11	0	0	3	44	11	0	0	0	0	0	0	0	
Oranges	...	...	...	...	...	1	5	1	4	0	1	5	1	4	0	0	0	0	0	0	
Piece Goods	57	89	22	4	0	25	98	24	8	0	0	9	2	4	0	32	0	0	0	0	
Passengers	2,002	2,062	515	8	0	2,029	2,118	529	8	0	27	56	14	0	0	0	0	0	0	0	
Paddy	49	624	156	0	0	71	1,163¼	290	13	0	22	539¼	134	13	0	0	0	0	0	0	
Palmyrah leaves	64	284	71	0	0	18	290	72	8	0	0	6	1	8	0	46	0	0	0	0	
Palankeens	8	28	7	0	0	3	30	7	8	0	0	2	0	8	0	5	0	0	0	0	
Planks	4	11	2	12	0	2	7	1	12	0	0	0	0	6	0	2	4	1	0	0	
Plants	...	...	...	...	...	1	1	0	4	0	1	1	0	4	0	0	0	0	0	0	
Palmyrahs	3	21	5	4	0	0	0	0	0	0	0	0	0	0	0	3	21	5	4	0	
Red wood	25	605	157	4	0	7	182¼	45	9	0	0	0	0	0	0	18	422	105	11	0	
Rice	...	...	...	...	...	9	42	10	8	0	9	42	10	8	0	0	0	0	0	0	
Rafts of Timber	38	166	41	8	0	1	3	0	12	0	0	0	0	0	0	37	163	40	12	0	
do. of Wood	...	...	...	...	...	1	2	0	8	0	1	2	0	8	0	0	0	0	0	0	
Rattan	1	21	5	4	0	0	0	0	0	0	0	0	0	0	0	1	21	5	4	0	
Ropes	1	5	1	4	0	0	0	0	0	0	0	0	0	0	0	1	5	1	4	0	
Shells	1,473	23,142	5,785	8	0	1,784	24,008¼	6,002	1	0	311	866¼	216	9	0	0	0	0	0	0	
Salt fish	228	469	117	4	0	252	1,008	252	0	0	24	539	134	12	0	0	0	0	0	0	
Salt	2,415	54,585	13646	4	0	2,225	51,720	12,930	0	0	0	0	0	0	0	190	2,865	716	4	0	
Sundries	225	300	75	0	0	60	169¾	42	7	0	0	0	0	0	0	165	130¼	32	9	0	
Straw	45	524	131	0	0	31	365½	91	6	0	0	0	0	0	0	14	158½	39	10	0	
Saffron	5	39	9	12	0	1	6	1	8	0	0	0	0	0	0	4	33	8	4	0	
Sheep	3	54	13	8	0	7	128	32	0	0	4	74	18	8	0	0	0	0	0	0	
Do. Skins	3	9	2	4	0	2	37	9	4	0	0	28	7	0	0	1	0	0	0	0	
Soap Nuts	0	0	0	0	0	1	29	7	4	0	1	29	7	4	0	0	0	0	0	0	
Sand	4	10	2	8	0	0	0	0	0	0	0	0	0	0	0	4	10	2	8	0	
Tobacco	51	681	170	4	0	31	349	87	4	0	0	0	0	0	0	20	332	83	0	0	
Turf	0	0	0	0	0	35	35	8	12	0	35	35	8	12	0	0	0	0	0	0	
Tiles	0	0	0	0	0	1	3	0	12	0	1	3	0	12	0	0	0	0	0	0	
Tents	0	0	0	0	0	4	4	1	0	0	4	4	1	0	0	0	0	0	0	0	
Do. Pegs	0	0	0	0	0	1	17	4	4	0	1	17	4	4	0	0	0	0	0	0	
Wood	701	14,524	3,631	0	0	539	12,722¼	3,180	9	0	0	0	0	0	0	132	1,801¾	450	7	0	
Total	9,324	1,29,643	32,410	12	0	9,111	1,30,236½	32,559	2	0	656	7,063¼	1,765	13	0	869	6,469¾	1,617	7	0	

In this Table is exhibited the different descriptions of goods landed at the Basin during last year in comparison with 1857-58. The traffic in Faggots, Shells, Paddy, and Salt-fish was larger while that in Salt, Wood, Redwood and Tobacco had diminished. The aggregate quantity and Tolls had increased.

	Tons.		Tolls.
1858-59	1,30,236½	Rs.	32,559- 0-0.
1857-58	1,29,643	,,	32,410-12-0.

TABLE C.

Statement showing the number of Boats, Tonnage and the amount of Toll collected on each sort of Goods which arrived at the Cochrane's Basin from each Village passing through the East Coast Canal during the official year 1858-59.

Names of Villages.	Wood.					Faggots.					Shells.				
	Boats	Tons.	Tolls. Rs.	A.	P.	Boats	Tons.	Tolls. Rs.	A.	P.	Boats	Tons.	Tolls. Rs.	A.	P.
Athoorpat	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Arambaukum	..	..	..	..	..	79	1,475	368	12	0	133	2,779	694	12	0
Arrungum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bamarjaulaim	4	72	18	0	0	119	2,160	540	..	..	90	1,830	457	8	0
Coromandel	1	4	1	0	0	76	366¼	91	10	0	125	610¾	152	10	0
Cusbah Shaharricottah	102	2,440¼	610	1	0	328	8,419¼	2,104	13	0	..	..	..	..	..
Caringal	..	..	..	..	..	..	..	..	..	..	2	8	2	0	0
Chinnamary coil	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Culloor	..	..	..	..	..	..	..	..	..	..	210	1,091¼	272	13	0
Chenam colum	1	5	1	4	0	..	..	..	..	..	28	228	57	0	0
Calangy	..	..	..	..	..	..	..	..	..	..	10	84	21	0	0
Cautoopully	..	..	..	..	..	..	..	..	..	..	64	192	48	0	0
Cateevauk	..	..	..	..	..	..	..	..	..	..	3	21	5	4	0
Chattancoopum	..	..	..	..	..	1	3	..	12	0	1	3	..	12	0
Coodymeenay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Carnavoday	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Doogoorozpatam	3	56	14	0	0	..	..	..	..	..	..	..	..	..	..
Ennoor	..	..	..	..	..	..	..	..	..	..	77	141	35	4	0
Elloor	170	3,694¾	923	11	0	99	2,403¾	600	15	0	..	..	..	..	..
Ellavoor	..	..	..	..	..	..	..	..	..	..	145	2,304	576	0	0
Irkum	1	22	5	8	0	..	..	..	..	..	393	7,319¼	1,829	13	0
Koorreeretillee	..	..	..	..	..	..	..	..	..	..	199	3,977¼	994	5	0
Koondooppaulum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kongerly	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mathoopaulam	..	..	..	..	..	..	..	..	..	..	61	850	212	8	0
Mangodoo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Moonapaulum	1	28	7	0	0	..	..	..	..	..	..	..	..	..	..
Mattalatillor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Naccathoorcovoo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Orak Samoodrum	..	..	..	..	..	..	..	..	..	..	103	816	204	0	0
Ootembadoo	1	41¼	10	5	0	..	..	..	..	..	..	..	..	..	..
Paroomtaukum	2	54	13	8	0	..	..	..	..	..	..	..	..	..	..
Pulicat	..	..	..	..	..	4	37	9	4	..	65	294	73	8	0
Poothoorvaukum	..	..	..	..	..	..	..	..	..	..	6	99	24	12	0
Pumbly	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poondy Coopum	13	337½	84	7	0	334	8,070½	2,017	9	0	..	..	..	..	..
Pamoovadoo	..	..	..	..	..	..	..	..	..	..	7	123	30	12	0
Ramapoorum	2	47	11	12	0	22	492	123	..	..	45	912	228	0	0
Royadooroo Poondy	15	376½	94	2	0	3	77	19	4	0	..	..	..	..	..
Reddypaulium	..	..	..	..	..	..	..	..	..	..	16	268	67	0	0
Shaddloo Coopum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tudda Coopum	134	2,523¾	630	15	0	296	6,874	1,718	8	0	..	..	..	..	..
Thautoonjettay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vulloor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Voyaloor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vanadoo	..	..	..	..	..	4	84	21	0	0	4	70	17	8	0
Yelliagalavaukum	130	3,249¼	812	5	0	64	1,664	416	0	0	..	..	..	..	..
Yaranadoor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	580	12,951¾	3,237	14	0	1,429	32,125¾	8,031	7	0	1,787	24,020¼	6,005	1	0

Names of Villages.	Salt.					Gram.					Miscellaneous produce.					Total No. of Boats.	Their Tonnage.	Amount of Toll paid at Madras.		
	Boats.	Tons.	Toll. Rs.	A.	P.	Boats.	Tons.	Tolls. Rs.	A.	P.	Boats.	Tons.	Tolls. Rs.	A.	P.			Rs.	A.	P.
Athoorpat	575	15,020	3,755	1	0	..	..	..	..	..	6	6	1	8	0	581	15,026¼	3,756	9	0
Arambaukum	..	..	..	..	..	..	..	..	..	..	17	71	17	12	0	229	4,325	1,081	4	0
Arrungum	..	..	..	..	..	..	..	..	..	..	4	51	12	12	0	4	51	12	12	0
Bamarjaulaim	..	..	..	..	..	1	6	1	8	0	56	273¾	68	7	0	270	4,341¾	1,085	7	0
Coromandel	..	..	..	..	..	..	..	..	..	..	123	212¾	53	3	0	325	1,193¾	298	7	0
Cusbah Shaharricottah	..	..	..	..	..	1	5	1	4	0	71	546¼	136	11	0	502	11,411¼	2,852	13	0
Caringal	..	..	..	..	..	1	4	1	0	0	5	19	4	12	0	8	31	7	12	0
Chinnamary coil	..	..	..	..	..	..	..	..	..	..	24	46	11	8	0	24	46	11	8	0
Culloor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	210	1,091¼	272	13	0
Chenam colum	..	..	..	..	..	..	..	..	..	..	5	29	7	4	0	34	262	65	8	0
Calangy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	84	21	0	0
Cautoopully	..	..	..	..	..	..	..	..	..	..	2	9	2	4	0	66	201	50	4	0
Cateevauk	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	21	5	4	0
Chattancoopum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	6	1	8	0
Coodymeenay	..	..	..	..	..	..	..	..	..	..	2	8	2	0	0	2	8	2	0	0
Carnavoday	..	..	..	..	..	..	..	..	..	..	1	3	..	12	0	1	3	..	12	0
Doogoorozpatam	..	..	..	..	..	16	321	80	4	0	166	1,518¾	379	11	0	185	1,895¾	473	15	0
Ennoor	339	7,995	1,998	12	0	1	5	1	4	0	222	263	65	12	0	639	8,404	2.101	0	0
Elloor	..	..	..	..	..	18	432¼	108	1	0	11	106	26	8	0	298	6,636¾	1,659	3	0
Ellavoor	..	..	..	..	..	..	..	..	..	..	1	5	1	4	0	146	2,309	577	4	0
Irkum	..	..	..	..	..	..	..	..	..	..	19	64	16	0	0	413	7,405¼	1,851	5	0
Koorreeretillee	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	199	3,977¼	994	5	0
Koondooppaulum	..	..	..	..	..	2	45	11	4	0	18	139	34	12	0	20	184	46	0	0
Kongerly	..	..	..	..	..	..	..	..	..	..	5	85	21	4	0	5	85	21	4	0
Mathoopaulam	..	..	..	..	..	..	..	..	..	..	5	28	7	0	0	66	878	219	8	0
Mangodoo	..	..	..	..	..	1	3	0	12	0	12	31	7	12	0	13	34	8	8	0
Moonapaulum	..	..	..	..	..	..	..	..	..	..	16	43¼	10	13	0	17	71¼	17	13	0
Mattalatillor	..	..	..	..	..	..	..	..	..	..	3	49	12	4	0	3	49	12	4	0
Naccathoorcovoo	..	..	..	..	..	..	..	..	..	..	3	44	11	0	0	3	44	11	0	0
Orak Samoodrum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	103	816	204	0	0
Ootembadoo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	41¼	10	5	0
Paroomtaukum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	54	13	8	0
Pulicat	..	..	..	..	..	25	118	29	8	0	1,964	2,592	648	0	0	2,058	3,041	760	4	0
Poothoorvaukum	403	7,957	1,989	4	0	..	..	..	..	..	24	27	6	12	0	433	8,083	2,020	12	0
Pumbly	..	..	..	..	..	..	..	..	..	..	8	23	5	12	0	8	23	5	12	0
Poondy Coopum	..	..	..	..	..	..	..	..	..	..	2	27	6	12	0	349	8,435	2,108	12	0
Pamoovadoo	..	..	..	..	..	..	..	..	..	..	1	5	1	4	0	8	128	32	0	0
Ramapoorum	..	..	..	..	..	..	..	..	..	..	9	86	21	8	0	78	1,537	384	4	0
Royadooroo Poondy	..	..	..	..	..	..	..	..	..	..	8	96	24	0	0	26	549½	137	6	0
Reddypaulium	..	..	..	..	..	..	..	..	..	..	1	3	0	12	0	17	271	67	12	0
Shaddloo Coopum	..	..	..	..	..	..	..	..	..	..	56	58	14	8	0	56	58	14	8	0
Tudda Coopum	..	..	..	..	..	3	19	4	12	0	106	1,293¾	323	7	0	539	10,710½	2,677	10	0
Thautoonjettay	..	..	..	..	..	2	57	14	4	0	9	173¾	43	7	0	11	230¾	57	11	0
Vulloor	510	12,446	3,111	8	0	..	..	..	..	..	..	..	..	..	..	510	12,446	3,111	8	0
Voyaloor	398	8,301¾	2,075	7	0	..	..	..	..	..	1	1	0	4	0	399	8,302¾	2,075	11	0
Vanadoo	..	..	..	..	..	..	..	..	..	..	3	19	4	12	0	11	173	43	4	0
Yelliagalavaukum	..	..	..	..	..	11	247	61	12	0	15	97	24	4	0	220	5,257¼	1,314	5	0
Yaranadoor	..	..	..	..	..	..	..	..	..	..	4	4	1	0	0	4	4	1	0	0
Total	2,225	51,720	12,930	0	0	82	1,262¼	315	9	0	3,008	8,156¾	2,039	3	0	9,111	1,30,236½	32,559	2	0

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TABLE F.

Detailed Account of the Receipts and Disbursements during the year 1858-59.

Receipts.

Months.	Miscellaneous Produce.				Salt.				Total.			
	Number of Boats.	Their Tonnage.	Toll levied.		No. of Boats.	Their Tonnage.	Toll levied.		No. of Boats.	Their Tonnage.	Amount of Toll levied at 4 Annas per Ton.	
1858.			RS.	A. P.			RS.	A. P.			RS.	A. P.
May......	587	6,701	1,679	4 0	360	8,508	2,127	0 0	947	15,209	3,802	4 0
June.....	436	2,810	702	8 0	397	8,349¾	2,087	7 0	833	11,159¾	2,789	15 0
July.....	576	4,741	1,185	4 0	500	12,126	3,031	8 0	1,076	16,867	4,216	12 0
August. ..	635	6,111	1,527	12 0	379	9,329	2,332	4 0	1,014	15,440	3,860	0 0
September.	670	7,527	1,881	12 0	124	2,597	649	4 0	794	10,124	2,531	0 0
October. ..	606	9,252¼	2,313	1 0	11	205	51	4 0	617	9,457¼	2,364	5 0
November.	378	4,224	1,056	0 0	18	330¾	82	11 0	396	4,554¾	1,138	11 0
December..	639	7,896	1,974	0 0	92	1,949	487	4 0	731	9,845	2,461	4 0
1859.												
January ..	574	7,682½	1,920	10 0	80	1,817	454	4 0	654	9,499½	2,374	14 0
February ..	541	7,401	1,850	4 0	44	920	230	0 0	585	8,321	2,080	4 0
March....	577	6,797¾	1,699	7 0	0	0	0	0 0	577	6,797¾	1,699	7 0
April.....	667	7,373	1,843	4 0	220	5,588½	1,397	2 0	887	12,961½	3,240	6 0
Total. .	6,886	78,516½	19,629	2 0	2,225	51,720	12,930	0 0	9,111	1,30,236½	32,559	2 0

Expenditure.

Months.	Toll office.						Lock.						Ordinary repairs for the northern canal.			Total.		
	Establishment.			Contingent.			Establishment.			Contingent.								
1858.	RS.	A	P	Rs.	A.	P.	RS.	A	P	R.	A.	P.	Rs.	A.	P.	RS.	A.	P.
May......	167	0	0	2	10	0	37	0	0	2	13	6	903	3	10	1,112	11	4
June......	167	0	0	2	10	0	37	0	0	2	13	6	1,232	5	1	1,441	12	7
July.......	167	0	0	2	4	0	37	0	0	2	13	6	1,034	15	4	1,244	0	10
August.....	167	0	0	8	5	6	37	0	0	2	13	6	330	2	7	545	5	7
September.	167	0	0	2	13	0	37	0	0	1	8	6	212	9	8	420	15	2
October. ...	167	0	0	2	13	0	37	0	0	1	10	3	324	0	9	526	8	0
November.	167	0	0	2	13	0	37	0	0	1	12	0	189	14	7	398	7	7
December..	167	0	0	8	11	3	37	0	0	1	13	0	87	11	5	302	3	8
1859.																		
January...	167	0	0	2	13	0	37	0	0	1	12	0	190	10	11	399	3	11
February..	167	0	0	30	9	0	37	0	0	1	10	3	372	3	3	608	6	6
March.....	167	0	0	2	13	0	37	0	0	1	10	3	496	1	3	704	8	6
April.....	167	0	0	6	10	9	37	0	0	1	10	3	576	1	4	788	6	4
Total. .	2,004	0	0	75	13	6	438	0	0	24	12	6	5,950	0	0	8,492	10	0

This shews the receipts of tolls in each month of the past official year, and it cannot fail to be observed that in March last No SALT whatever passed down the canal, and also that while 8,330 tons were brought down in April 1,858, the quantity in April 1859 was only 5588½ tons. These circumstances alone account for the decrease in that branch of trade, noticed in the remarks under tables A. and B., although in that commodity there was also a large falling off in the last four months of 1858.

The disbursements on account of the East Coast canal during the past year are also shewn in the foregoing table, so that the return may be as complete as possible.

124. *Statement of the Traffic shewing the number of Boats and Rafts passing through the Eastern Coast Canal.*

Months.	Grain.		Other Agricultural produce.		Salt.		Lime and shell Chunam.		Firewood.		Other Goods.		Empty Boats.	Total.	Passenger Boats.	Paddle Boats.	Transit Boats.	Total.	Grand total No. of Boats.	Rafts of Timber		Rafts of Bamboo.		Total Rafts.		Total Value of Goods.	Remarks.
	Boats.	Vaule.	Boats	Value.	Boats.	Value.	Boats.	Value.	Boats.	Value.	Boats.	Value.								No.	Value.	No.	Value.	No.	Value.		
1858.				Rs.		Rs.		Rs.		Rs		Rs.									Rs.		Rs.		Rs.	Rs.	
May............	1	140	12	4,400	360	1,53,120	140	4,050	184	15,134	63	2,736	8	768	179	..	..	179	947	0	0	...	...	...	0	1,79,580	
June............	0	0	15	9,400	397	1,73,280	71	990	102	7,427	63	3,744	5	653	180	..	..	180	833	1	150	...	...	1	150	1,94,991	
July............	1	312	14	5,600	500	2,18,280	171	2,130	156	11,893	47	2,484	6	895	181	..	..	181	1,076	0	...	...	...	...	...	2,40,699	
August..........	3	1,555	28	16,300	879	1,67,880	192	3,300	171	13,629	54	2,316	11	838	176	..	..	176	1,014	1	100	...	...	1	100	2,05,080	
September.........	3	2,444	20	11,400	124	46,810	213	4,710	183	16,037	83	3,192	8	634	160	..	...	160	794	0	0	...	...	..	0	84,593	
October..........	11	10,844	37	19,650	11	3,720	175	4,590	241	22,379	37	1,884	3	515	102	...	...	102	617	0	0	...	...	...	0	63,067	
November.........	4	2,494	37	19,150	18	7,080	80	1,890	104	8,897	40	3,516	4	287	108	...	..	108	395	1	20	...	...	1	20	43,047	
December........	14	8,820	49	30,650	92	35,040	112	3,060	203	18,690	47	2,676	19	536	194	..	...	194	730	1	20	...	...	1	20	98,956	
1859.																											
January.........	29	14,980	30	24,100	80	32,700	124	3,750	168	16,156	27	1,704	2	460	194	..	...	194	654	0	...	...	...	...	0	93,390	
February.........	8	1,350	12	8,500	44	16,560	127	3,630	194	18,158	48	2,448	7	440	145	..	...	145	585	0	...	...	...	...	0	50,646	
March...........	5	1,050	19	14,300	0	0	144	3,690	152	14,658	59	1,548	2	381	196	...	196	577	0	0	...	...	...	...	0	35,246	
April.............	1	87	12	6,350	220	95,880	234	5,520	153	14,007	31	1,584	23	674	213	..	213	213	887	0	...	...	...	...	0	1,23,428	

This statement shews the total *monthly* traffic by the number of boats and value of goods conveyed upon the Eastern coast canal in the official year 1858-59.

Upon comparing it with the previous year's return, it is observed that in May, June, July, August and December 1858, and January and February 1859, there was a very large increase of traffic over the corresponding months of the previous year, amounting in aggregate value to Rupees 2,13,940, but, on the other hand, in September, October and November 1858, traffic fell off so much more than it had done in the same months of 1857, and in March and April 1859, it had not again increased to the same extent as in 1858, that the decrease during those periods surpassed considerably the very great increase above mentioned, as the following figures will shew:

Total value of traffic		
In 1857-58......	Rs.	14,20,944
,, 1858-59....	"	14,12,723
Decrease......	Rs.	8,221

Increase in the 7 months.................	Rupees	2,13,940
Decrease in the remaining 5 months...		2,22,161
Leaving a deficiency of Rupees.		8,221

in the aggregate value of goods conveyed in East coast canal during 1858-59 as compared with that of 1857-58.

The failure in the single article of salt noticed in the remarks on the previous table, sufficiently explains this result. For had the same value of that commodity been transported during March and April 1859, as was the case in these months of the preceding year, last year's traffic, instead of being *minus* would have been *plus* by the no inconsiderable sums of Rupees 1,20,000.

It may also be mentioned, that the value of rafts in place of being Rupees 5,180 as in 1857-58, was last year only Rupees 290.

125. With reference to that portion of the canal from the Adyar to Sadras, no tolls have as yet been levied upon its traffic. Mr. Kennedy has, however, been instructed to ascertain the particulars of arrivals at the wooden bridge, 2½ miles from the Adyar river. The expenditure during last year in the repairs of this part of the East coast canal amounted to Rs. 4,533.

NORTH ARCOT.

126. In this district the expense of last year amounts to Rupees 1,79,905, against Rupees 2,17,553 of 1857-58. The items in 1858-59 are:

	New works.	*Repairs.*
Irrigation works..	26,343	38,711
Communications..	47,742	57,569
Buildings	2,518	7,022
Rupees	76,603	1,03,302

127. In the first of the branches the only new work that calls for notice is the Palar annicut, as upon it nearly the whole (Rupees 23,969) of the outlay was incurred. The bridge piers have raised on an average to the height of four feet, and various channels have been opened.

128. Of the expenditure on communications, the chief portion was upon the bridge over the Palar on the line between Vellore and the railway. Upon this Rupees 30,401 were spent last year, but the parapet walls and part of the flooring remained to be completed, 14 arches having been built last year. In its unfinished state the very heavy and important traffic of that road has passed along it since September last, without the occurrence of a single accident, the loss of one bullock excepted, and the parapets have since been erected.

129. The road from Gooriattum to Pullicondah and Palmanair is the one on which the next largest outlay (Rupees 12,360) has taken place. The approaches of a tunnel, the plastering of the Vapoor bridge, and 33 yards of the causeway, are all that are wanting to complete it. On the line from Wallajah Nugger to Banaverum, Rupees 2,915 were spent; the roadway is finished, except the metalling, and on the seven miles of the Vellore and Arnee road, made last year, Rupees 1,403 were expended.

130. As the buildings do not call for any remarks, the repairs that have been executed in the district will now be considered. In Irrigation works, the Cauverypauk tank and its supplying channel, the Govindravady and Dannel channels have been the principal ones under repair, and they were all put in good order. The sanctioned allowance, however, was not wholly expended.

131. With reference to the roads, the amount sanctioned for their repair was not availed of to the full extent. Trunk road No. 1 is in good order, and the line from Pullicondah to Palmanair from that line has been much improved by the erection of parapets on the ghat, by the steep gradients being reduced, and the narrow parts widened. When some repairs are executed, it will be a preferable road to the one by Mooghee. Trunk road No. 10, requires a larger annual allowance, and metal laid down on that part of it, which, during the monsoon, gets into a very bad state. The traffic on this line has increased enormously since the railway was pushed on to Gooriattum, and the Palar bridge opened; but the very reverse has been the result of this, as regards trunk road No. 1.

132. The requirements of the district are principally roads to act as feeders to the railway, and by means of which increased facilities for traffic will also be afforded to Brinjarries and others. Some are already partially made, but require metalling and bridges to complete them. In irrigation works, the Palar, Poyney, and Cheyaur annicuts, with their works, should be finished as soon as possible.

133. The operations on the railway have caused the price of labor and materials to rise very much; workmen had to be procured from neighbouring districts at advanced rates of wages, and Madras had to be resorted to for the latter commodity, the cost of which was of course much increased by the charge for carriage. The prevalence of fever in the hilly parts of this district, and also the small number of laborers, cause works to hang long on hand.

SOUTH ARCOT.

134. In South Arcot, the expenditure during 1858-59 was Rupees 1,59,656, not differing very widely *in the aggregate* from the previous year (Rupees 1,52,525), but the same ratio is not found in the respective outlays on new works and repairs in those years, not half the amount expended on the former class in 1857-58 was spent upon it during last year, while that upon repairs exceeded the previous year's outlay by nearly Rupees 60,000. The following is the analysis of the past year's operations;

	New works.	*Repairs.*
	Rs.	Rs.
Irrigation works............	7,190	80,426.
Communications..................	6,183	60,849.
Buildings..........................	2,697	2,311.
Rupees...	16,070	1,43,586.

135. The very small sum expended on new works may be accounted for by the operation of the restrictive orders, which at the commencement of the year were in full force, and continued so throughout, with trifling modifications. Still, however, last year was a peculiarly favorable one, and a large revenue will be the result.

136. The only items of the irrigation expenditure were the calingulah at the north end of the Permal tank and the sluice across the Valavanoor surplus channel. These works were, at the beginning of 1858-59, under restrictions, but subsequently exempted. The calingulah was freed in May but not completed by the end of last year, as its progress was much retarded by the want of materials, the sanction of exemption not having been received till after the close of the season for making bricks. Besides this the heavy rains in November breached the Permaul tank, and one of the wing walls of the calingulah was swept away; this had been rebuilt by the end of April, and little more remained to be done. It was too near the close of the official year before the sluice was exempted for any thing to be done upon it beyond the collection of materials.

Rupees 6,750.
Rupees 440.

137. Of communications the Pooniar bridge and Cuddalore harbour works alone call for remark. Upon the former Rupees 2,320 were expended in building and plastering the parapet walls. The structure, as originally designed, was almost finished, when the river altered its course during the late floods, and as it now bears even more obliquely than formerly upon it, sone additions and alterations are necessary, which will cause the estimate to be exceeded. The operations for opening a better passage between Cuddalore harbour and the sea were successfully carried out last year, the balance of the estimate having been expended upon them. During the November floods, the channel became partially silted up and its banks were breached,

but, as the bar remained stationary, it will soon be cleaned, the cost being met by the annual sanction for that purpose of Rupees 1,000.

138. The extensive repairs in the district have, with few exceptions, been satisfactorily executed. Those upon irrigation works, for which Rupees 75,800 were originally sanctioned, were mostly of an ordinary character. The embankments in the southern talooks, however, suffered such an amount of damage by the floods in November, that a further grant of Rupees 14,000 was made for their restoration.

139. Fully two years ago, the roads in South Arcot were divided into main and district roads, the one set maintained by Government, and the other constructed and kept in order by the local fund. For the former class, the annual sanction is Rupees 52,780. Besides this sum, grants aggregating Rupees 9,790, were last year made specially for repairing breaches in the lines to Chellumbrum and Combaconum, caused by the floods of the Vellaur and Puravenaur in November. The outlay, accordingly, of upwards of Rupees 60,000 in 1858-59, has effected a marked improvement in the communications of South Arcot. Three superintendents have been employed to look after the expenditure of the district road fund, out of which also they were remunerated, and the country has benefitted largely by the sum laid out, viz. Rupees 25,450 upon 23 roads.

140. From special funds, the chuttrum near the Vellaur annicut, commenced in the preceding year, has been completed. School houses have also been built at Villapooram and Virdachellum, towards which Government contributed Rupees 1,600 and Rupees 1,127, respectively.

141. Nearly all the works that are required to render the communications of this district perfect, have been sanctioned, but are, owing to the state of the finances of the country, under restriction.

142. The practice of executing works by contract has been introduced in this district, and nearly all the repairs to irrigation works have been done in that way, the executive agents of the talooks making the payments, keeping their books at the same time in strict accordance with the departmental form. The pernicious system of giving advances to contractors, from which arose the reciprocal one of presents, has been strenuously opposed by the District Engineer, seconded by Mr. Wright and Mr. Brosnahan, and with a successful issue in the ranges of these subordinates, the latter of whom states, that, to him advances are not more that named, and then only by those who do not intend to execute the work.

143. The native revenue officials in this district render no assistance whatever to the Public Works Department, which, fortunately, does not stand in much need of their aid.

Tanjore.

144. In this most important district, the expenditure during the past official year amounted to the very large sum of Rupees 5,36,735, being much more than double what was spent in 1857-58 (Rupees 2,22,619), while the outlay on new works, during last year, was less than half what it was in the previous one; that on repairs was nearly triple.

The particulars of the expenditure of 1858-59 are:

	New works.	*Repairs.*
Irrigation works	5,606	4,56,698
Communications.	9,762	53,472
Buildings.	2,176	9,021
Rupees	17,544	5,19,191

145. Before proceeding to consider the very heavy sums expended on repairs, the most important of the few items of new works will be noticed.

146. In the irrigation works the only one that need be mentioned is the improvement of the irrigations and drainage connected with the Tulnoyer cotagum. On this Rupees 4,509 were spent last year, and, with the exception of a small portion of the masonry and earthwork, it is finished. Until, however, this valuable work be *fully* completed, the adjacent lands cannot reap the benefit to be derived from it.

147. Of communications, the extension of the lower Coleroon annicut and the construction of a bridge across it, on trunk road No. 9, together with the operations at the port of Tranquebar, alone merit remarks. On the former, Rupees 4,871 were expended last year, and the metalling of the road over the north branch, is all that remains to be done. On the improvement of the sea groynes at Tranquebar, the outlay was Rupees 520. Nos. 1, 2, 5, 6 and 7 have been extended as follows:—Nos. 1 and 2 have had 12 and 24 feet respectively added to them, while the latter three have been lengthened 30 feet each. Nos. 3 and 4 have been strengthened. Operations upon all of them are still in progress.

148. The heavy expenditure upon repairs, to irrigation works more particularly, was caused by the devastation inflicted upon this district, by the hurricanes which visited it in October and November 1858. The larger rivers, already swollen by the mountain torrents from the western ghats, and increased in their course by the local rains, burst their banks, roads were cut up, minor embankments vanished, and the smaller irrigating and surplus channels were choked. In November, however, the greatest amount of injury was done, for then much of the country was inundated, whole villages were under water, and a loss in human life, cattle, and property to a large extent, was the result. Bridges also, and other masonry works, gave way, of which the following were of most moment:

The upper annicut breach 312½ feet and 8 arches.
The 5-arch bridge across the Vellyaur at Valengunny.
Aqueducts at Carookay across Iyavanaur.
Surplus sluice at Allagoody Nedoovassel calingalah in the Poygayaur river.
The bridge of two vents on road (No. 36) from Negapatam to Tranquebar, and
The jetty at Negapatam, 127 feet of which were destroyed.

The fact that Rupees 3,45,877 were expended during the last seven months, in executing repairs, will also give an idea of the damage done by the storms.

149. Before those events took place, the only operations on hand were the few new works free from restriction, and the repairs in the district generally. Subsequently, however, the whole staff of the public works department were fully employed in making good the injuries sustained by the various classes of works. In this they were assisted by the revenue department, to which was entrusted, in the first place, the repairing of the breaches in the river banks and irrigation works, but, subsequently, the communications; the department of public works undertaking the restoration of embankments and masonry works.

150. Operations were pushed forward with such alacrity, in spite of delays caused by the pullars being engaged during a great part of February and March in reaping an unusually large "amani" harvest, that great hopes were entertained of the early completion of repairs. These, however, were disappointed by the disastrous four days' hurricane in the end of April (23rd to 27th) which again submerged a portion of the district, but did, comparatively speaking, little damage, which vouches for the satisfactory progress made, and the efficient execution of repairs. The injuries were confined to the opening of some of the old breaches, the loss of building material, besides damage done to the minor channels, and some of the roads. Cultivation, however, it was anticipated, would not suffer by this calamity, as the more important irrigation works, (except those already mentioned,) were in good order, and the repairs that were necessary would before these be sufficiently advanced, should no unforeseen occurrence take place.

151. The District Engineer submits a long list of sanctioned works, now under the restrictive orders, which he requests may be exempted for execution, as they are necessary for the development of the resources of Tanjore. He considers that the new department has won the confidence of the people, and can perform whatever it is called upon to do; adducing, in support of this, the fact of the before mentioned large outlay in the course of the last seven months, of which Rupees 1,17,653 were expended in April alone.

152. Its prospects for the future, he also thinks, are shewn to be most encouraging by the expenditure, during the past year of upwards of 5¼ lacs, when the department was numerically weak. But one or two matters require to be attended to in order that operations may not be unduly hindered. These are the discontinuance of the removal of officers and subordinates from district to district, and also the employment of temporary subordinates. The establishment of a small cause court in the mofussil, or the conferment of similar powers on the Assistant Collector, where, or before whom, contractors and others receiving advances may be sued for non-fulfilment

of contract, and recovery of money advanced, and a system of supervision to check the cultivation of the pudoogay, the cutting through of embankments, and other encroachments by meerassidars, &c.

153. As the last named is a very serious grievance, a few words regarding it may not be out of place. The cultivation of the pudoogay which the meerassidars claim as their own, renders the river and channel banks which rest upon that land very insecure, as in doing so, these people plough and cut away the very slopes of the banks. Another practice of these people is to make a cut through a river or channel embankment to water their garden or plot of nunjah land, as the channel which ought to supply it has become choked at the head from not being cleared out. For the purpose of irrigating his own little bit of land, a meerassidar often erects a temporary dam across a channel, and never thinks of removing it after he is served, which naturally leads to the course becoming silted up, either there or at some other place. These matters will be taken in hand and specially reported upon.

154. One matter more which will add very greatly to the welfare of this district remains to be noticed, *viz.* the introduction of *Free* labour. This, which will prove of incalculable value, will, it is confidently expected, ere long be brought about by the instrumentality of the great Southern of India Railway Company, whose Civil Engineers report that their instructions are, to procure their workmen without the intervention of any contractor. Should they succeed, by the inducement of constant employment with good pay, in practically exemplifying to the pullars, as has been done in Tinnevelly, that they are independent of the meerassidars in this respect, the result will be that the present baneful system will be extinguished, and instead of the degraded population now in the district, it will be occupied by free and wealthy inhabitants; as a natural consequence, rates of labor and materials will rise; but this consideration is of no moment in comparison with the liberation of the people from the yoke of slavery.

Trichinopoly.

155. The outlay in this district, during the year ended 30th April last, is nearly double that of the preceding one, thus:

In 1858-59, it was Rupees 2,96,610; in 1857-58 Rupees 1,52,340

The large increase is under the head of repairs, the amount of which alone, is more than half as much again the latter sum, as will be seen from the following abstract of 1858-59 expenditure.

	New works.	*Repairs.*
Irrigation works..	24,731	1,69,145
Communications	6,788	53,693
Buildings	34,426	7,827
Rupees... ...	65,945	2,30,665

156. The causes of the small amount of expenditure on new works were the restrictive orders being still in force, and the heavy repairs necessary in irrigation works and communications. But before entering upon this branch of last year's operations, there are some of the new works that require notice; and, proceeding in the above order, the new irrigation works will be briefly considered in the first place.

157. The tunnel beneath the Murthyaur, for conveying water from the Coleroon into the Ponairy channel and tank. On this most difficult undertaking, the outlay last year was Rupees 14,287, and after the operations has been frequently interrupted by freshes in the Murthyaur, the work was completed in October last, but was again seriously damaged by the floods of the Coleroon in that month and the succeeding one, notwithstanding the protection of earthbanks thrown up for that purpose.

On the Perrovally channel, Rupees 4,795 were expended, when the work was stopped, owing to a substratum of granite being discovered, the excavation of which would be more costly than the anticipated advantages warranted. A report upon this subject has been called for.

The breach in the Wayacondaun bank was closed on 5th October last, at a cost of Rupees 2,056, but re-opened by the heavy flood of April 1859. The extension of the calingulah, which might have saved this, was not completed in time. The outlay on this was Rupees 2,414.

158. The communications call for no special remarks, but the most important items of the buildings may be mentioned.

The tiled portion of the European infantry barracks, half completed....	Outlay	Rs.	7,022
Cavalry hospital at Trichinopoly, completed 26th February 1859......	do.	„	4,983
Reconstructing five ranges of temporary barracks, completed 31st August 1858..................	do.	„	6,860
Erecting canteen for the Artillery barracks, completed 23rd March 1859.	do.	„	4,051
Sick horse stables, No. 9, Horse Field battery in progress..........	do.	„	2,537

159. The repairs have been by far the most important and costly of the operations during last year, as they were repeatedly executed upon the same works. The scarcity of teak wood and other materials, together with the difficulty of procuring carriage, added much to their expense, and impeded progress. They were rendered necessary by the four heavy floods which swept over this district during the past official year, viz., in the beginning of May 1858, in October and November last, and in the end of April 1859.

160. The three last were the most severe, and the fall of rain during the past year was double that of 1857-58. The following is the quantity that fell in the storms

Of May 1858..	10·7
October 1858..	71·0
November 1858..	20·7
April 1859. (from 25th to 27th).........................	14·35

161. In November the Cauvery was 2 feet 3 inches higher than it had ever been known to be, the embankments gave way, and long breaches appeared in the banks of the main river. The flood spread over the country for miles, and in Trichinopoly the water was 6 feet deep, beside the wall of the old burial ground.

162. The further effects of the inundation may be glanced at. The bridge over the Iyaur, on the road to Salem, was utterly destroyed, as also the protective embankment to the Laulgoody talook. This caused the submersion of the low land and the loss of the bridge over the Coolyaur, together with the trunk road in the valley of the Coleroon. The Madura and Tanjore roads were seriously damaged; and of the Dindigul road, in the valley of the Coryar, scarcely a trace remains. Irrigation channels did not escape—the large ones were breached, and the smaller ones choaked; in some instances entirely buried.

163. Had it not been for the hurricane of November, the state of the district would in all probability have been prosperous, as, by the great exertions of the Revenue and Public Works Departments, there was every promise of a good crop after the freshes of May, and even when the Cauvery rose in October, a quarter of a foot above any of its previous known levels, there seemed to be no great cause for any apprehension.

164. The last gale (April 1859) stopped the operations in progress, and caused some injury to works, so that the attention of the department in year 1859-60, will be very much engrossed in furthering the repairs commenced, and putting the irrigation works in such a state of efficiency as will enable the cultivation of the country to be advantageously undertaken. With reference to this, the district Engineer reports that proper regulation of the drainage falling into the Weyacondaun is urgently required; a powerful discharging sluice near the Pootoor calingulah appears to him to be most speedy means of putting it in order.

165. The district stands much in need of good roads, to Salem, Madura, Combaconum, Laulgoody, &c. The trunk roads to Madras and Caroor are in progress.

MADURA.

166. In Madura the expenditure of 1858-59, Rupees 93,684, exceeded considerably that of the previous year (Rupees 80,288), and this excess has been on new works. The different items of outlay last year are :—

	New works.	*Repairs.*
Irrigation works............	1,936	39,401
Communications............	34,589	13,868
Buildings........................	1,948	1,942
Rupees	38,473	55,211

167. Of the new works, those under communications alone call for remark. Of the sum specified as expended thereon, Rupees 21,792 were on roads and bridges, and the balance upon the Paumben channel.

168. The principal operations in the former were:—

Road from Madura to Dindigul, expenditure Rupees 9,840. This made fair progress until the removal of the subordinate to another district in December last, since which time no work has been done. Had he continued in charge, the line would have been completely finished before the end of the official year.

Road from Dindigul to Trichinopoly, expenditure Rupees 3,504. The progress here has been very unsatisfactory.

Bridge over the Ambravutty, expenditure Rupees 3,942. The structure suffered from the floods in April 1858, four unfinished arches being swept away.

Part of road between Buttagoontah and Pullaputty, expenditure Rupees 2,523. No superintendence was available for this line during the latter half of 1858-59; progress anything but satisfactory.

169. On the Paumben channel, Rupees 12,797 have been expended, and that valuable communication (at present under Captain Brine's superintendence) is now available for laden vessels of 200 tons, with a draught of 11 feet, while, five years ago, craft of more than 80 tons had to discharge part of their cargo before they could go through the passage. Its depth across the reef is now, on an average, 12½ feet, and its width there is 100 feet; and through the sand bank the channel is 12 feet deep and 110 feet wide, 68,414 cubic feet of sand and stone having been removed from the former, and 6,43,420 cubic feet of sand and mud from the latter, in the course of last year. During 1858-59, however, the traffic through it has fallen off in comparison with the year previous, for which two reasons are ascribed by Captain Brine, viz., the losses sustained by wreck, and damage to vessels during the gales of May and November 1858, and, the failure of the crops in Tanjore, in consequence of which no freight could be obtained at the sea ports of that district.

The respective returns of tonnage passing through the channel, and Government share of dues in 1857-58 and 1858-59, are as follows:—

	Tonnage.		Dues.
1857-58 - - -	1,87,912	Rs.	11,692
1858-59 - - -	1,38,341	„	9,031
	Rs. 49,571		2,661

Dues...	8,516
Hire of warps and grapnels...	515
	9,031

170. The following table shows the various classes of vessels which used the Paumben channel in the course of last year, and the amount realized for pilotage, and the use of warps and grapnels, Government receiving three-fourths of the former, and the whole of the hire for the latter:—

STATEMENT *shewing the number of Vessels and Pilotage, &c., from 1st May 1858 up to 30th April 1859.*

Months.	Steamers.	Barques.	Brigs.	Schooners.	Dhonies.	Boats.	No. of Vessels.	Total Tonnage.	Government ¾ share.			Pilot's ¼ share.			Total Amount.			Hire at one Rupee each.		Amount of Total Works and Grapnels.		
									Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Warps.	Grapnels.	Rs.	A.	P.
1858,																						
May...	0	9	46	11	23	0	89	7,933	390	13	6	130	4	6	521	2	0	14	6	20	0	0
June.	1	19	75	27	23	0	145	13,776	915	9	9	305	3	3	1,220	13	0	74	37	111	0	0
July...	0	14	104	31	30	1	180	15,775	972	0	0	322	12	0	1,294	12	0	31	26	57	0	0
August...	2	11	108	29	28	2	180	15,549	975	13	6	325	4	6	1,301	2	0	31	18	49	0	0
September..	2	4	76	26	30	2	140	11,160	734	10	9	244	14	3	979	9	0	19	22	41	0	0
October...	9	4	67	37	58	5	171	12,091	796	1	3	265	5	9	1,061	7	0	21	11	32	0	0
November...	0	1	54	23	92	5	175	11,875	655	8	9	218	8	3	874	1	0	29	16	45	0	0
December.	0	0	19	11	23	1	54	3,744	217	8	0	72	8	0	290	...	0	13	4	17	0	0
1859.																						
January..	0	0	30	15	97	2	144	8,591	500	2	6	166	11	6	666	14	0	52	21	73	0	0
February.	3	2	52	24	84	0	162	11,254	710	10	0	236	14	0	947	8	0	42	20	62	0	0
March.	0	4	50	26	127	15	222	13,473	850	14	0	283	10	0	1,134	8	0	1	1	2	0	0
April.	1	7	53	28	94	4	187	13,120	795	14	3	265	4	9	1,061	3	0	3	3	6	0	0
Total...	6	75	734	288	709	37	1,849	1,38,341	8,515	10	3	2,837	4	9	11,352	15	0	330	185	515	0	0

171. The heavy amount of repairs upon irrigation works was caused by no fewer than 570 breaches having been made in them during the last north east monsoon. All were, however, made good without loss of time, and the requisite supply of water furnished to the crops.

172. The damage done to roads was also serious, five very important lines suffering much from the rains. The repairs have been very limited, as no maintenance allowance was sanctioned for this district, but for the restoration of the roads above referred to, a separate grant of Rupees 25,000 was made on 18th March last.

Extract Minutes Consultation, No. 638.

173. The exceedingly unsatisfactory progress in operations last year arose from the paucity of officers and upper subordinates, compared with the requirements of the district, preventing that supervision from being exercised, which is absolutely necessary over the majority of the Sub-Overseers in Madura, who are not equal to the charge of important duties.

TINNEVELLY.

174. In this district the outlay last year was Rupees 90,521, that upon repairs being nearly eight-ninths of the whole, (and more than the entire expenditure of 1857-58, Rupees 77,729), as is seen from the following statement :—

	New works.	*Repairs.*
Irrigation works...	904	51,454
Communications.	6,621	25,650
Buildings...	2,799	3,093
Rupees.........	10,324	80,197

175. The small amount expended on new works may be accounted for by the restrictive orders being in force, the delay to operations caused by heavy rain at the commencement of the official year, and to many of the executive being for a time unable to attend to duty from attack of fever, which raged throughout the district.

176. The only *new* operations worth mentioning are :

The Tuticorin beach road, completed 19th April 1859,	Rupees... ...	3,315
Numbeeaur bridge, bridge finished, approaches nearly so...	„	1,865
Traveller's bungalow at Palamcottah...	„	1,235
Hoozoor treasury...	„	1,325

177. For the repairs of Tinnevelly, the District Engineer applied to Government for grants of Rupees 20,000, on account of the roads, and 28.000 on account of the irrigation, both in addition to the original sum sanctioned for expenditure of every description, Rupees 72,680. The first named sum was sanctioned at once, but of the latter, only Rupees 12,000, after a long correspondence, and when it was too late in the season to commence the general repairs necessary. The emergent masonry works had, however, been previously executed from the unexpended balance of the original and first supplemental grants, so that, as far as was possible, satisfactory repairs have been executed. The expenditure of Rupees 25,601 upon the roads, however, has scarcely been sufficient to effect the repairs most urgently needed; some of the lines are in a very bad state, and a large sum will be required to put them in order. Road No. 4 particularly calls for a considerable expenditure, as its importance, being a continuation of the high road from Madras to Travancore, demands that it should not only be rendered passable, (which now it scarcely is in many parts,) but be made perfectly unexceptionable. The cotton roads are in very good condition, but their value is much lessened by their not extending to the seaport. The tract between their terminating point and Tuticorin, being over sand, the traffic is very much impeded. An estimate for completing the road over this tract has been received.

178. The generality of the native revenue subordinates, and the Meerassidars, almost to a man, are still intensely prejudiced against the new department, and consequently operations do not progress at the pace they ought. The conduct of many of the Sub-Overseers also tends to the same result; for these men, from the numerical weakness of the department in higher officials, have in many cases to disburse pay to the coolies, and those of the Brahmin and Soodra castes, deeming it beneath their dignity to place the money in the Pullar's hand, throw on the ground at a distance, in front of themselves, what *they* consider due to him, thus neither giving the Pullar any explanation of the amount paid, nor an opportunity of remonstrating were he disposed. The consequence, of course, is, that these Sub-Overseers experience the greatest difficulty in procuring voluntary labor, as these poor creatures prefer to earn in peace at their own villages a bare subsistence, rather than take the chance of more profitable employment with the treatment above described. On this subject a reference has been made to the District Engineer.

COIMBATORE.

179. In this district the outlay on public works last year, amounted to Rupees 94,373, of which the following are the particulars :—

	New works	*Repairs.*
Irrigation works...	4,315	31,168
Communications...	10,523	38,166
Buildings...	4,482	5,689
Rupees...........	19,350	75,023

180. In consequence of the restrictive orders, the expenditure on new works was very limited, and in Irrigation works confined to the improvement and extension of the Calingaroyen channel, the bank of which has been made nearly strong enough to carry down a full supply of water.

181. The principal communications on hand were. The bridge over the Nullamullays at Marchnackinpolliem, and the new trace into Malabar. The re-construction of the former, which fell in April 1858, was commenced in October last, and has progressed favorably, a sum of Rupees 4,166 having been spent upon it. The arches, however, instead of being semi-elliptical, as the original ones were, are segmental, that form being better adapted, when first rate materials and workmanship are not to be had. The line into Malabar has now been entirely traced; the expenditure last year upon it was Rupees 5,027. The operations on the Veylanthavalam bridge, and the Hassanoor ghát, are not in that state of forwardness which they ought to have reached. The contractors were to blame with reference to the first, and the work has been taken out of their hands; while the unhealthiness of the locality affected the progress of the latter, which will be a very valuable and important line of communication with Mysore, when opened.

182. The conservatory in the public gardens at Ootacamund has been finished, at an expenditure, last year, of Rupees 1,478, making the total cost Rupees 5,512 ; and the improvements on the school house at Coimbatore have been completed.

183. The repairs also, in consequence of the restrictions, were limited to what was required to preserve existing works, and maintain the revenue at its ordinary figure. The irrigation works and communications were all seriously damaged by the very heavy floods in the Ambravutty, Nullamullay, Bhowany, Cauvery, &c. These rivers, overflowing their banks, breached some annicuts and washed away others, swept over the Pudoogay lands, carrying all before them, destroyed the heads of channels and breached tank bunds. Portions of the roads were also washed away, while in other parts, (such as the two principal gháts leading to the Neilgerries), they were rendered impassable by landslips, or from being blocked up by masses of rock, detached from from the hill sides by the rain, which also, in some instances, carried away the retaining walls. The bridges did not suffer material damage.

184. Good order was quickly being restored when the storm of 26th, 27th, and 28th April 1859 burst over the district, and in a great measure undid all the repairs that had been effected, more particularly in the eastern and north eastern parts of the district, where the worst of the hurricane fell. The rain-fall on this occasion noted at Ootacamund was 15, and at Coonoor 30 inches.

185. The requirements of the district consist of the improvement of roads, and the addition of new lines, particularly in Collegal range, a tract of country of nearly 2,000 square miles, at an elevation of from 2,000 to 4,000 feet, remarkable for the production of silk, and possessing a rich, deep, well watered soil, admirably adapted for the cultivation of every kind of grain. To connect this part of the district with the railway by a road with cross lines, say from Collegal to the station at Errode, would be most advantageous, and as the Hassanoor ghát, in its lower part, lies in the south corner of it, a branch road from it might also be constructed to open it up still further. In this tract are the remains of innumerable irrigation works, and the inhabitants point to them in sorrow, as showing that, at a former period, it was not so neglected as now.

186. Besides roads, Coimbatore stands much in need of annicuts, tanks, and channels, or of large reservoirs, whereby the water poured into the low lands by the rivers rising in the hills

may be turned, from being the instrument of destruction, into one of unspeakable benefit to the district. For these works would provide the means of checking the uncontrolled rush, which in time of rain at present sweeps over the country, carrying desolation, and enable the land to be irrigated during the dry weather, thereby securing the crops. The district Engineer has observed that large reservoirs would be easily constructed in the valleys of the Bhowany, Moyaur, Ambravutty, and the streams which have their source in the Nullamullays, and the places he alludes to in these valleys are by nature suited for that purpose. The restoration, which could be effected at a small cost, of the various tanks, &c., throughout the district, would advance its prosperity very much.

187. The condition of European stations upon the Neilgherries demands instant attention and improvement, Ootacamund especially, where the drainage is very deficient. This could be remedied to a great extent, if the lake were improved by a wier at its lower end, and a bridge under the willow bund. Coonoor and Kotagherry, though in less degrees, need rectifying also in this matter.

188. In connection with the management of this district, the separation of the charge of the magnificent and costly work—the European barracks at Jackatalla—from the control of the district Engineer, is the principal event of note during the past year. This was in terms of Government order of 17th August 1858.

Extract Minutes Consultation, No. 1617.

SALEM.

189. While in 1857-58, the expenditure in Salem was Rupees 1,08,184, during last year it amounted to Rupees 1,50,090, the items of which are:

	New works.	*Repairs.*
Irrigation works...	2,782	55,005
Communications.	11,530	33,602
Buildings	42,103	5,068
Rupees	56,415	93,675

190. The items of outlay in communications and buildings (new works) alone call for any notice, and these will be briefly detailed, and state of the work mentioned, with the expenditure during last year.

191. In communications they are:

The road from Yercaud to railway station at Mullapooram, expenditure Rupees 5,225. In order to complete this road, the unexpended balance of the estimate was exempted from restriction. In the following month, operations were recommenced, and a line fit for cart traffic, having an average width of four yards, has been nearly finished to Addyvarum, a quarter of a mile from the base of the Shevaroy hills.

Extract Minutes Consultation, No. 1596, 11th August 1858.

The road between the town and railway station of Vaniembaddy, with the requisite alterations on trunk road No. 1, expenditure Rupees 4,042. Disputes regarding the compensation to be given for the very valuable land occupied by this line has delayed the progress of the first part of the work. Of the second part, about half has been accomplished. The whole will, however, be completed, ere the railway is open to that station.

The bridge over the Kullaur at Naikondy, expenditure Rupees 2,263. This work was not fairly begun until January last, owing to the misconduct of the subordinate, who first had charge of it. The two piers and flooring between them are, however, completed, and materials for the abutments have been collected.

192. The principal new buildings which were on hand are:—

The new Jail at Salem, expenditure Rupees 25,253. This has progressed very well during last year, the three large blocks containing 27 cells each, are now completed. One of the small ones (of which there are to be three, having 21 cells each) is nearly finished, and the remaining two, well forward. The foundations of the hospital blocks have been finished, and the lower room of the main guard house almost ready for roofing.

The new court houses at Salem, expenditure Rupees 11,019. Of this building, with a frontage of 220 feet, the walls are now 13 feet high, the wood work is progressing, and it is expected that by October next the structure will be finished.

The District Engineer's office, &c., expenditure Rupees 472. This is expected to be completed shortly, as it is being roofed.

The new sick tables at the Oosoor Remount Depôt, expenditure Rupees 1,727. Owing to the want of bricklayers and efficient superintendence, these buildings, sanctioned by Extract Minutes Consultation, dated 23rd December 1850, have, unfortunately, made little progress.

Emergent, No. 2786.

193. The heavy rains which prevailed in this district, as well as in Trichinopoly and elsewhere, rendered extensive repairs to the irrigation works and communications necessary, and consequently the outlay upon this branch of public works was much larger than last year, which was a season of great drought.

CANARA.

194. The outlay in Canara during the official year 1858-59, has been Rupees 95,211, or nearly 50 per cent. advance upon that of the foregoing year (Rupees 67,112), the increase being about the same on both branches of expenditure. The following are the details of last year's operations.

	New works.	*Repairs.*
Communications....................	15,824	57,406
Buildings................................	10,055	11,826
Rupees	25,879	69,232

195. The most important item of communications is the valuable line between Dharwar and Coompta, which was completely restored in December last, with efficiency and promptitude, by Lieutenant Drever, at a cost of Rupees 8,638, during last year; while the others deserving of mention are, the operations on the Gairsuppah ghât, which are nearly finished, Rupees 2,697 having been laid out on them, and the metalling of the Sumpajeh ghât, whereon Rupees 4,409 were expended, but cholera having broken out on the coffee estates adjacent to this line, the workmen fled, and even when the visitation had subsided, they came forward in such small numbers that very little progress was made.

196. Of the buildings, the only one that calls for a few remarks is the barracks at Sirey. Upon their construction, much care was bestowed by Lieutenant Drever, who also executed the work with great expedition, whereby its usefulness was much enhanced. The barracks were completed on 31st July 1858, and from that month till February 1859, they were occupied by a detachment of the 66th regiment, who, during their stay, suffered very little from sickness, a proof of the excellent manner in which the work was performed. The good service done by the early completion of these barracks, consisted in saving the troops from being exposed under canvas during the monsoon.

197. Besides the special cause which delayed the metalling of the Sumpajeh ghât, the duration of the monsoon for two months beyond the usual time, retarded, generally, all operations in Canara during the past year.

198. Of the sum expended on the repairs of communications, Rupees 27,773 were laid out upon the Dharwar and Coompta road, and the result is, that it is now in first rate order. By the judicious allowance sanctioned by Government, the District Engineer is enabled to have organised bands of labourers, who reside along the line, for the purpose of maintaining it in its present efficient condition.

199. Trunk road No. II has benefitted much by the repairs executed upon it, though a good deal, in the way of draining it, still remains to be done. The annual sanction for trunk road No. III is insufficient to effect all that is required upon it. The Arbyle road and others, which are maintained out of the road circuit sanctions, (formerly Rupees 38,000 and last year Rupees 15,000 only,) now only partially repaired, will, unless the original amount be again allotted to them, revert to the same deplorable condition in which they were at the commencement of the past year.

200. Of the works that would be calculated to advance the prosperity of the district, the following may be enumerated. The Tuddry and Coomptah canal, which, besides being a part of the projected coast canal, would be of great benefit to the cotton merchants; the Beitkul harbour, with lines of communications from it to Dharwar and other places.

MALABAR.

201. While during the official year 1857-58, the expenditure in Malabar was Rupees 60,533, in that now under review it amounted to Rupees 1,13,708, (independently of the cost of ferry

fund works, Rupees 35,927, and the sum paid to ferry men as compensation, (Rupees 6,162,) or not very much less than double. The items of this outlay are:

	New works.	Repairs.
Irrigation works	0	1,019
Communications	53,171	31,669
Buildings	11,625	16,224
Rupees	64,796	48,912

202. The largest sum in the expenditure on communications was Rupees 19,738, on the timber truss bridge over the Irrity, which would have been completed before the close of last year, had sickness not driven away the laborers; it was, however, very nearly finished.

203. The road from Calicut to Palghat, on which Rupees 13,298 were expended, next demands attention. This line will be completed (with the exception of the bridges) in the course of another year. The earth work is finished as far as Malliapooram, and will be metalled and completed with tunnels after the monsoon.

204. On the Perambodly ghát and road (trunk road No. 4) the outlay last year was Rupees 9,536. The ghát and a few miles of the road have been metalled, and the former can now be traversed by bandies during the monsoon.

E. M. C. No. 1,300, 7th July 1856.

205. The trace of the Tambacherry ghát, for which Government sanctioned Rupees 10,000, is now being made into a road eight feet wide, Sappers aiding in the work. Rupees 4,576 were laid out upon it in the past year. Of the line, three miles at the foot of the ghát, and about two miles at and near the top of it, have been finished. The natural difficulties of the line are being overcome, and the Sappers will, it is confidently expected, be successful in blasting the harder species of granite that will be met with. As this is believed to be the easiest line for traffic, the prosecution of the undertaking, until a perfect road is constructed, is of first moment, as then Wynaad will be in direct communication with the port of Calicut; and Mysore will possess the same advantage.

206. Rupees 3,256 were laid out on the Cholakul and Toovoor road with satisfactory result, as, with the exception of a small portion, it has been opened out.

207. In buildings, the largest outlay on one work was Rupees 2,228, on the paling round the European cantonment at Malliapooram, which has been nearly finished. The other items do not require to be separately noticed. The elephant shed, reading room, &c., at the above station, and other military buildings at Cannanore, Cochin, &c., have all progressed favorably.

208. The repairs upon communications have been extensive, 400 miles of roads, 150 bridges, and 22 miles of canals, having undergone repair. The last season was a very wet one, even for Malabar. The rains, which had extended far into the month of November, recommenced in March, and continued during the most of April. They proved fatal to the completion during last year (as had been expected) of the Nerugumpully bridge, three of the arches of which, in course of being turned, were destroyed by the rising of that river.

209. The progress of operations in this district is much retarded by the feverish nature of most of the localities where roads and bridges are situated. The workmen are very apprehensive, and so prejudiced against these places, that at times, though sickness is not prevalent, they can scarcely be induced to work, no matter what amount of pay is offered to them.

210. The rates of wages and materials in Malabar have been much increased by the great demands for all descriptions made by the Madras railway; which, between Beypore and Coimbatore, passes through no fewer than four talooks of the district, in its centre and southern divisions. That undertaking, however, is being pushed forward with great vigor, so that the influence it exerts in impeding public works, as well as in increasing their cost, cannot be of long continuance.

MADRAS.

211. The public works at the Presidency during the year under report, were placed under the superintendence of officers, respectively designated, the Civil Architect at the Presidency, and the Garrison Engineer of Fort Saint George. The first named had charge of all civil buildings, &c., at Madras, and to the latter, in his capacity of an officer in the department of public works, were entrusted the *whole* of the buildings within Fort Saint George, also the lines at Vepery and Perambore, together with the Gun Carriage, and Minie Bullet manufactories, but the works outside the fort have since been transferred to the Civil Architect.

212. The aggregate expenditure of these officers during last year amounted to Rupees 3,36,600, against Rupees 2,36,325 of 1857-58; but instead of the great disparity between the outlay by each, which in the previous year amounted to rather more than half a lac, the expenditure of the two branches approximated to within Rupees 2,000.

213. The following is a statement of the sums laid out during the year under review by

	The Civil Architect.	The G. Engineer.
On new works	96,246	1,01,875
On repairs	73,021	65,458
Rupees	1,69,267	1,67,333

The principal items of each will now be considered.

214. The Civil Architect's expenditure may, however, be further subdivided, thus:

	New works.	Repairs.
Irrigation works	2,662	5,397
Communications	20,564	14,219
Buildings	73,020	53,405
Rupees	96,246	73,021

And his most important operations are the following:—

	Rs.
The purchase of ground and buildings for the extension of the new road from the south beach near the Chepauk palace to Triplicane high road, completed in April 1859	16,194
Extending four cross drains and widening the metalled portion of the island road between the Government and Wallajah bridges, completed in September 1858	3,134
Making the requisite alterations and additions for rendering the Penitentiary a secure Jail for Madras, nearly completed	2,329
Erecting four flanking towers or bastions of pentagonal shape at the angles of the Penitentiary, completed in December 1858	3,321
Erecting a long verandah in front of the jail ward, adding two upstair ranges of European cells and erecting four night guard rooms, under execution	6,042
Fixing water trunks on exterior of several Government buildings to prevent inconvenience to the public by the discharge of rain water from the roof into the streets, completed	3,286
Erecting outer compound walls in west, south and south-east sides of the Penitentiary, nearly completed	9,092
Erecting a quarter with out-houses complete, for the permanent residence of the Apothecary attached to the Penitentiary. Finished with the exception of the paint work	5,555
Enlarging copper cleaning room at the Mint, completed	2,060
Constructing an upper room over the turner's department at the Mint, completed	2,550
Extending stamping room at the Mint, completed	4,700
The purchase of ground for a new burial place for Mussulmen in Kistnampettah, completed	7,178
Extending two additional male wards, with privies and compound walls attached, on south east of Leper hospital. In progress	5,145

215. Under the Garrison Engineer the annexed are the principal works which have been on hand.

Re-building a portion of the sea face of the fortifications of Fort St. George, south of the flag staff	10,815
Do. Do. north of the flag staff	9,874
Re-building part of north-east orellon demi-bastion on sea face of fortifications of Fort Saint George	10,678
Do. the Saint Thomé Caponniere of the fortifications of Fort Saint George	3,632

In these sums, which amount in all to Rupees 34,999, are included an advance of Rupees 13,000 to the district Engineer of Malabar, for the purchase of piles, and Rupees 5,143 laid out on the brick-field at Shadieneoopum, and the cement factory in course of erection below the basin of Cochrane's canal.

The estimated out-turn of the brickfield is stated at four lacs of extra sized superior bricks per month.

Besides the above, other works deserve short notice, such as :—

The Sea Custom House sheds.. 6,816

These are very nearly finished; and answer every purpose.

The minie bullet factory, which has been completed, with the exception of re-building a small portion of the rampart wall.................................... 2,342

Constructing a cistern, lightning conductor, Superintendent's office, &c., in the above building. All nearly completed.. 5,654

The sheds near the "boatmen's gate," for the stowage of Government coal, &c., for the Marine Department.. 8,940

* Extract Minutes Consultation, No. 1854, dated 9th September 1858.

With the exception of the tramway from there to Clive's battery, which is in abeyance,* this work is fully finished.

The construction of the gas works for lighting the European barracks in Fort Saint George.. 5,562

Extract Minutes Consultation, No. 1808, dated 4th September 1858.

This was specially sanctioned by the Supreme Government, and is progressing so rapidly that it will probably be finished by next September. The barracks are to be furnished with 100 lights, and sufficient gas for 300 street lights in addition has been provided for. It is an experiment designed by Dr. Mayer, who has examined and approved of all the details and plans. The expense is estimated at 3½ pice per light per night, an immense reduction from the cost of the present system, which comes to nearly 11 pice.

The additional buildings to the Government office to accommodate a larger number of printing presses with their requisite machinery, and also for the accommodation of the Telegraph department.

The full sanction of Rupees 10,520 for the execution of this work has not been required, it having been completed for.................................... Rs. 10,349

BANGALORE.

216. The expenditure by the Special Executive Engineer at this station during 1858-59, amounted to Rupees 1,21,279, while that of the preceding year was only Rupees 95,759. The amount spent in repairs last year was more than 13 times as much as in the year before.

The analysis of the outlay is :

	New works.	*Repairs.*
Communications....................	302	6,000
Buildings..........................	1,00,377	14,600
Rupees	1,00,679	20,600

217. The sum of Rupees 302, under the head of new communications, was devoted to marking out the new cantonment and planting trees.

218. Of the very large sum expended on new buildings, the whole (with the exception of Rupees 214 on Mootcherry church), has been laid out upon military works, which will now be enumerated, with remarks as to the progress made.

Married men's quarters in the old Dragoon barrack square..........Expenditure Rs. 17,911

Sixty quarters in progress, 20 of which are nearly completed; of other 16, the walls are well up and part of the verandahs roofed; of the remaining 24, the foundations are laid. It is hoped that by September all will be finished.

European Horse Artillery barracks 9,244

2nd blocks completed during last year.

Old Dragoon barracks... 25,309

Five ranges complete, two in hand.

New Dragoon barracks.... 29,019

Extract Minutes of Consultation, No. 148, dated 17th January 1859. (P. W. D. Military)

After one range had been completed and seven more were in progress, the work was stopped at the beginning of the best part of the working season, whereas, had this not occurred, the work would have been far advanced.

Color Serjeant's quarters. .. .. Rupees 2,039

As those are built upon the site of the old ones, only one block can be on hand at a time, the walls of four quarters are nearly finished, with the foundations and basements of other four laid.

Armourer Serjeant's quarters... ... ... Rupees 2,000

Three-fourths completed.

Wash house to ranges five and six old Dragoon barracks 784

Drains thereto 1,498

Four of the wash houses are finished, and two in progress, the main drain and a covered one completed.

Staff Serjeant's (Native Light Cavalry) quarters.. Rs. 3,850

With the exception of the compound wall, which is still unbuilt, these are finished.

Staff Officer's offices........................... Rs. 6,431

The offices of the Deputy Assistant Quarter Master and Adjutant General are nearly finished, while the ground floor of the Paymaster's office is up and covered in.

Extract Minutes Consultation, No. 1382, dated 16th July 1858.

219. The repairs to commuications, effected by means of the annual allowance of Rupees 6,000 granted by Government, have caused a very marked improvement in the roads of this cantonment.

220. The repairs to buildings, costing Rupees 14,433, were rendered necessary by the very heavy monsoon, which caused every house in Bangalore to leak. All, however, have been put in thorough order.

221. The great demand for timber last year occasioned the introduction of a large quantity of green wood into the works, requiring increased strength in section to be given to rafters. On observing this, the Executive Engineer took upon himself the responsibility of laying in a large stock to season, and reports that at the close of the official year under review, he had fully Rupees 10,000 worth in the yard.

222. The prices of brick and chunam have increased very much, and will likely rise still higher as the railway approaches Bangalore, the branch line to which will soon be commenced.

223. That obnoxious system of advances, which prevailed here prior to Captain Mayne's arrival, has given way before his steady refusal to grant them, aided by the plan of regular weekly payments, which he has instituted.

JACKATTALLA.

224. Upon the barracks for the accommodation of European soldiers now in course of erection at this station, the sum of Rupees 3,05,725 was laid out during 1858-59, (about Rupees 12,000, under the expenditure in the preceding year,) of which the following are the particulars :

On new works.............Rupees 3,05,118.

On repairs.............. „ 607.

E. M. C. No. 1647. 17th August 1858.

225. During the past year, the officer in charge of this undertaking has been exempted from the control of the district Engineer of Coimbatore, and is now responsible to the Central office direct, under the designation of "Special Executive Engineer," as laid down in circular order book, page 583, paragraph 15.

226. In Mudumalli, wood a great loss is reported during the past year, but, as means have been adopted for rectifying some of the causes which led to it, a similar occurrence will, it is hoped, not again take place. Amongst the cattle also, there has been both great mortality, and a

number of accidents; 27½ pairs of bullocks died in the course of the year, and 29 pairs were rendered unfit for hard labor.

227. The very severe storm of rain which swept over Jackatalla on 26th to 29th April last, did a great deal of damage to the buildings, and occasioned the loss of 11 lacs of unburnt bricks, valued at from Rupees 4,000 to Rupees 5,000.

E. M. C., No. 290, 1st February 1859.

228. A special report upon the cost and progress of the works in connection with these barracks, was called for by Government from Lieutenant Colonel Lawford, who arrived at Jackatalla for the purpose of instituting the necessary enquiries upon the 11th of March. That officer's investigation was not concluded prior to the close of the past official year, but since then, his report, containing full details of what has been accomplished, what still remains to be done, and the difficulties with which the Executive officers have had to contend in prosecuting the work, together with statements shewing the cost of labor and materials at that elevated station, has been submitted to Government. This, however, did not form part of the operations during the year under review.

229. The wages of cooly, as well as skilled labor, have risen very much in the course of 1858-59, with the universal demand for workmen, both by private individuals and public companies; and this has not only increased the cost of operations, but has also, to a very considerable extent, retarded their progress.

Appendix No. 1.

230. The accompanying table of remunerative works, which will form a part of the annual progress report, is submitted now, in order that rule 12 laid down by the Governor in Council, in Extract Minutes Consultation, No. 989, dated 17th June 1856, may be complied with. The continuance of the restrictive orders has prevented new remunerative works of any magnitude from being commenced or prosecuted during the past year.

231. With regard to the rates of labor and materials, beyond what is stated under the head of each district, whose Engineer reports upon the subject with reference to the operations of the past year, I can add nothing; as the report called for by Government upon this matter is still incomplete, returns from the following districts not having yet been received, although reminders have been repeatedly issued.

Form A. being statement of prices, has not been furnished up to this date from

Chingleput.
North Arcot.
Coimbatoor.
Civil Architect.
Bangalore, and
Jackattalla.

And form B. statement of rates, is also still wanting from all the above except Jackatalla. I may, however, here mention that an almost universal increase has taken place both in the wages to workmen, skilled and cooly, and in the cost of all materials necessary for the prosecution of public works.

Engineer's Office, from 1st May 1858 to 30th April 1859.

Chief			Bills recommended to Government.				Bills objected to and returned.				Total.				Bills remaining on the 1st May 1859.				Remarks.
nt.			No.	Amount.			No.	Amount.			No.	Amount.			No.	Amount.			
			10	11			12	13			14	15			16	17			18
	A.	P.		Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.	
9	1	9	3	1,130	8	10	0	15	6	6	478	2,85,595	1	1					The variations between the totals of columns 7 and 15 is owing chiefly to revised bills to the extent of 2 lacs and upwards, having been taken into account along with original bills in Rajahmundry, and to several bills having been sent for disposal to the Court of Wards, as explained in a note to the audit report for November 1858.
1	1	11	7	6,341	8	3	2	6,537	12	6	116	2,06,160	6	8					
2	12	9	9	2,34,092	1	10	12	1,99,734	9	4	661	18,93,619	7	11					
2	10	4	0	0	0	0	3	23,067	8	9	622	5,35,580	3	1					
9	8	1	0	0	0	0	1	314	12	0	481	1,80,454	4	1					
7	8	9	4	8,234	7	4	0	3,082	8	5	517	7,77,204	8	6					
2	12	7	10	6,615	6	5	14	7,380	12	10	604	5,21,408	15	10					
0	8	9	6	35,640	2	7	22	52,002	13	8	607	6,61,813	9	0					
1	3	7	2	2,584	1	5	3	9,130	4	4	204	4,75,245	9	4					
0	0	3	4	1,746	11	8	5	5,251	12	10	121	2,41,998	8	9					
39	13	3	6	11,805	11	11	17	40,357	4	2	821	6,74,502	13	4					
7	0	0	10	8,197	12	11	5	27,519	13	7	614	6,46,024	10	6					
0	5	7	0	0	0	0	5	1,551	4	0	361	5,04,481	9	7					
19	14	0	3	538	15	0	9	7,038	5	2	761	2,02,497	2	2					
40	10	10	0	0	0	0	52	25,812	1	10	1,441	4,89,952	12	8					
62	4	3	1	357	6	6	1	2,480	2	5	350	62,399	13	2					
59	15	4	4	3,021	14	6	13	40,141	7	9	229	2,32,423	5	7					
11	5	6	33	63,893	6	9	31	95,780	6	3	608	10,16,985	2	6					
23	5	6	0	0	0	0	1	616	3	9	230	1,21,939	9	3					
39	1	7	0	0	0	0	8	13,159	7	9	81	1,89,498	9	4					
05	6	6	196	1,05,634	6	7	12	2,686	5	11	402	2,88,326	3	0					
29	12	1	0	0	0	0	0	1	2	0	11	38,830	14	1					
23	10	1	13	7,159	11	6	6	1,259	8	9	86	1,60,642	14	4					
21	11	9	40	18,773	14	9	8	53,905	7	10	113	8,61,101	2	4					
91	6	5	0	0	0	0	0	0	0	0	4	11,491	0	5					
60	2	10	79	29,462	8	1	0	0	0	0	206	1,85,422	10	11					
38	6	11	0	0	0	0	0	0	0	0	1	38	6	11					
25	12	3	1	240	0	0	0	0	0	0	48	22,165	12	3					
06	15	5	431	5,45,470	12	10	230	6,18,827	6	4	10,778	1,14,27,805	2	7					

number of accidents; 27½ pairs of bullocks died in the course of the year, and 20 pairs were rendered unfit for hard labor.

227. The very severe storm of rain which swept over Jackatalla on 26th to 29th April last, did a great deal of damage to the buildings, and occasioned the loss of 11 lacs of unburnt bricks, valued at from Rupees 4,000 to Rupees 5,000.

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231. With regard to the rates of labor and materials, beyond what is stated under the head of each district, whose Engineer reports upon the subject with reference to the operations of the past year, I can add nothing; as the report called for by Government upon this matter is still incomplete, returns from the following districts not having yet been received, although reminders have been repeatedly issued.

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And form B. statement of rates, is also still wanting from all the above except Jackatalla. I may, however, here mention that an almost universal increase has taken place both in the wages to workmen, skilled and cooly, and in the cost of all materials necessary for the prosecution of public works.

Report of Audit of Bills for Public Works Expenditure in the Chief Engineer's Office, from 1st May 1858 to 30th April 1859.

Districts.	Bills remaining on the 1st May 1858.				Bills received during the official year 1858-59.				Total.				Bills passed by the Chief Engineer.				Bills recommended to Government.				Bills objected to and returned.				Total.				Bills remaining on the 1st May 1859.				Remarks.
	No.	Amount.			No.	Amount.			No.	Amount.			No.	Amount.			No.	Amount.			No.	Amount.			No.	Amount.			No.	Amount.			
1	2	3			4	5			6	7			8	9			10	11			12	13			14	15			16	17			18
		Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.	
Ganjam	279	1,50,684	4	3	198	1,31,358	13	5	477	2,82,043	1	8	475	2,84,449	1	9	3	1,130	8	10	0	15	6	6	478	2,85,595	1	1					The variations between the totals of columns 7 and 15 is owing chiefly to revised bills to the extent of 2 lacs and upwards, having been taken into account along with original bills in Rajahmundry, and to several bills having been sent for disposal to the Court of Wards, as explained in a note to the audit report for November 1858.
Vizagapatam	68	1,79,664	10	0	49	31,180	14	7	117	2,10,845	8	7	107	1,93,281	1	11	7	6,341	8	3	2	6,537	12	6	116	2,06,160	6	8					
Rajahmundry......	386	15,66,186	3	7	303	5,75,300	5	4	689	21,41,486	8	11	640	14,59,792	12	9	9	2,34,092	1	10	12	1,99,734	9	4	661	18,93,619	7	11					
Masulipatam.......	177	3,24,253	7	9	444	1,99,007	13	6	621	5,23,261	5	3	619	5,12,512	10	4	0	0	0	0	3	23,067	8	9	622	5,35,580	3	1					
Guntoor............	128	91,490	15	8	350	84,282	3	4	478	1,75,773	3	0	480	1,80,139	8	1	0	0	0	0	1	314	12	0	481	1,80,454	4	1					
Nellore............	102	4,07,227	2	7	420	3,72,892	14	8	522	7,80,120	1	3	513	7,65,887	8	9	4	8,234	7	4	0	3,082	8	5	517	7,77,204	8	6					
Cuddapah...........	168	3,87,503	5	8	436	1,34,265	7	11	604	5,21,768	13	7	580	5,07,412	12	7	10	6,615	6	5	14	7,380	12	10	604	5,21,408	15	10					
Bellary.............	252	3,93,900	3	7	358	2,31,384	4	11	610	6,25,284	8	6	579	5,74,170	8	9	6	35,640	2	7	22	52,002	13	8	607	6,61,813	9	0					
Canara.............	84	2,27,757	3	7	125	2,80,981	10	7	209	5,08,738	14	2	199	4,63,531	3	7	2	2,584	1	5	3	9,130	4	4	204	4,75,245	9	4					
Kurnool............	37	15,698	5	7	83	2,21,943	4	4	120	2,37,641	9	11	112	2,35,000	0	3	4	1,746	11	8	5	5,251	12	10	121	2,41,998	8	9					
North Arcot.......	415	3,72,346	14	6	404	3,01,654	0	5	819	6,74,000	14	11	798	6,22,339	13	3	6	11,805	11	11	17	40,357	4	2	821	6,74,502	13	4					
Chingleput.........	243	3,29,658	7	8	369	3,16,857	5	9	612	6,46,515	13	0	599	6,10,307	0	0	10	8,197	12	11	5	27,519	13	7	614	6,46,024	10	6					
South Arcot.......	103	2,74,994	14	6	257	2,29,728	1	7	360	5,04,723	0	1	356	5,02,930	5	7	0	0	0	0	5	1,551	4	0	361	5,04,481	9	7					
Salem...............	342	71,854	15	4	421	1,21,091	8	4	763	1,92,946	7	8	749	1,94,919	14	0	3	538	15	0	9	7,038	5	2	761	2,02,497	2	2					
Trichinopoly.......	87	1,71,565	0	10	1,354	3,19,114	1	8	1,441	4,90,679	2	6	1,389	4,64,140	10	10	0	0	0	0	52	25,812	1	10	1,441	4,89,952	12	8					
Tanjore............	3	2,557	8	7	347	59,778	5	0	350	62,335	13	7	348	59,562	4	3	1	357	6	6	1	2,480	2	5	350	62,399	13	2					
Malabar............	111	1,20,430	0	5	125	1,20,475	1	8	236	2,40,905	2	1	212	1,89,259	15	4	4	3,021	14	6	13	40,141	7	9	229	2,32,423	5	7					
Coimbatore.........	285	6,40,568	14	9	324	4,33,829	4	10	609	10,74,398	3	7	544	8,57,311	5	6	33	63,893	6	9	31	95,780	6	3	608	10,16,985	2	6					
Madura.............	83	60,491	0	2	146	61,448	9	1	229	1,21,939	9	3	229	1,21,323	5	6	0	0	0	0	1	616	3	9	230	1,21,939	9	3					
Tinnevelly..........	41	1,46,598	1	5	48	89,596	4	1	89	2,36,194	5	6	73	1,76,339	1	7	0	0	0	0	8	13,159	7	9	81	1,89,498	9	4					
Civil Architect......	211	1,81,998	4	7	201	1,31,236	15	0	412	3,13,235	3	7	194	1,80,005	6	6	196	1,05,634	6	7	12	2,686	5	11	402	2,88,326	3	0					
Eastern coast canal	4	20,783	5	2	7	18,047	8	11	11	38,830	14	1	11	38,829	12	1	0	0	0	0	0	1	2	0	11	38,830	14	1					
Mysore.............	46	79,292	5	7	38	21,246	10	5	84	1,00,539	0	0	67	92,223	10	1	13	7,159	11	6	6	1,259	8	9	86	1,00,642	14	4					
Hyderabad..........	26	4,19,464	8	9	89	4,41,706	11	0	115	8,61,171	3	9	65	7,88,421	11	9	40	18,773	14	9	8	53,905	7	10	113	8,61,101	2	4					
Upper Godavery...	4	11,173	2	10	0	0	0	0	4	11,173	2	10	4	11,491	0	5	0	0	0	0	0	0	0	0	4	11,491	0	5					
Garrison Engineer.	48	19,805	0	4	160	1,57,166	11	8	208	1,76,971	12	0	127	1,55,960	2	10	79	29,462	8	1	0	0	0	0	206	1,85,422	10	11					
Saugor.............	1	38	6	11	0	0	0	0	1	38	6	11	1	38	6	11	0	0	0	0	0	0	0	0	1	38	6	11					
Miscellaneous bills..	0	0	0	0	53	22,844	11	10	53	22,844	11	10	47	21,925	12	3	1	240	0	0	0	0	0	0	48	22,165	12	3					
Total...	3,734	66,67,986	14	2	7,109	51,08,419	11	10	10,843	1,17,76,406	10	0	10,117	1,02,63,506	15	5	431	5,45,470	12	10	230	6,18,827	6	4	10,778	1,14,27,805	2	7					

232. The foregoing report of audit of bills for expenditure in this department during the past year, exhibits a very marked difference at its conclusion from its commencement. The bills remaining on hand at 1st May 1858, amounted to Rupees 66,67,886-14-2, while on 30th April 1859, not a single bill remained unadjusted.

233. The following is a comparative view between the operations of last year and its predecessor, from which it is at once apparent that a very large increase has taken place in the number and amount of bills passed by the Chief Engineer, and recommended for the sanction of Government, and at same time a very marked decrease in that of bills returned for correction or explanation.

	Bills passed by Chief Engineer.		Bills recommended for sanction of Government.		Bills returned as objectionable.	
	No.	Amount.	No.	Amount.	No.	Amount.
1857-58	2,037	50,28,014-5-11	334	2,21,852-0-9	475	12,36,339-13-1
1858-59	10,117	1,02,63,506-15-5	431	5,45,470-12-10	230	6,18,827-6-4

234. Statements of the issue of surveying and mathematical instruments, tools and machinery to the various districts during the past year, accompany this report. Appendix No. II. All indents for instruments and tools have been passed at once, and the articles supplied as they were called for. Upon the issue of machinery, however, even sanctioned and paid for, restriction was laid by Government, until they were satisfied that each district was duly provided with sufficient means to cover and preserve it, consequently the amount furnished to the districts has been very trifling. E. M. C., No. 1861, dated 10th September 1858.

235. I have now to wind up the annual report of the Public Works Department for the official year 1858-59, by submitting copy of a report by Mr. J. Dumphy, on the working and cost of the Lithographic press, attached to the Central office, during that period. Appendix No. III.

It will be observed that a balance in favor of the Department of Rupees 776-7-0, is shewn from the work of last year, (while the result of 1857-58, was a deficit of Rupees 2,086-8-9), and that the amount of work done during 1858-59 was of

MAPS AND OTHER DRAWINGS.

No. of copies	... ...	48,319
" impressions	... ...	46,624

CIRCULARS, FORMS, &c.

No. of copies	.. ..	1,55,221
" impressions	... ...	1,25,403

FORT SAINT GEORGE,
31st August 1859.

APPENDIX I.

Statement of Remunerative Works for 1857-58.

Name of Work.	Capital.				Revenue.							
	Outlay on construction (Dead Stock valuation.)				Charges.				Income.			
	Description.	Amount up to the end of the past year.	Amount for the current year.	Total.	Description.	Amount up to end of the past year.	Amount for the current year.	Total.	Description.	Amount up to end of the past year.	Amount for the current year.	Total.
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Godavery anicut and its subsidiary works of the Rajahmundry portion......	Outlay on original work and reconstruction..........	26,14,596	98,078	27,12,674	Interest on the capital, Rs. 26,14,596, at 4 per cent.........	5,00,041	1,04,584	6,04,625	Gross proceeds from all sources....	51,11,797	7,25,644	58,37,441
	Deduct deterioration by wear and tear, &c............	...	...	...	Maintenance and repairs...............	9,48,132	2,56,024	12,04,156				
					Total....	14,48,173	3,60,608	18,08,781				
	Balance of capital.	26,14,596	98,078	27,12,674	Balance of charges.	...	...	...	Balance of income.	36,63,624	3,65,036	40,28,660
Godavery anicut and its subsidiary works of the Masulipatam portion...........	Outlay on original work and reconstruction..........	5,04,929	63,510	5,68,439	Interest on the capital, Rs. 5,04,929, at 4 cent............	44,307	20,197	64,504	Gross proceeds from all sources....	1,57,054	48,679	2,05,733
	Deduct deterioration by wear and tear, &c..............	14,959	5,049	20,008	Maintenance and repairs............	92,550	25,278	1,17,828				
					Total....	1,36,857	45,475	1,82,332				
	Balance of capital.	4,98,970	58,461	5,48,431	Balance of charges.	...	...	...	Balance of income.	20,197	3,204	23,401

Statement of Remunerative Works for 1857-58, (continued.)

Name of Work.	Capital.				Revenue.							
	Outlay on Construction (Dead Stock valuation.)				Charges.				Income.			
	Description.	Amount up to the end of the past year.	Amount for the current year.	Total.	Description.	Amount up to the end of the past year	Amount for the current year.	Total.	Description.	Amount up to the end of the past year	Amount for the current year.	Total.
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Kistnah annicut project....	Outlay on original works and reconstruction........	13,36,198	69,981	14,06,179	Interest on the capital, Rs. 13,36,198, at 4 per cent......	1,19,698	53,448	1,73,146	Gross proceeds from all sources...	2,09,115	1,52,718	3,61,833
	Deduct deterioration by wear and tear, &c..............	53,448	26,724	80,172	Maintenance and repairs.......	65,659	30,611	96,270				
					Total......	1,85,357	84,059	2,69,416				
	Balance of capital.	12,82,750	43,257	13,26,007	Balance of charges	...	...	...	Balance of income	23,758	68,659	82,417
Pennair annicut works in the district of Nellore	Outlay on original works and reconstruction..........	1,08,730	19,404	1,28,134	Interest on the capital, Rs. 1,08,730, at 4 per cent.........	12,423	4,349	16,772	Gross proceeds from all sources...	40,696	1,175*	41,866
	Deduct deterioration by wear and tear, &c..	2,500	1,000	3,500	Maintenance and repairs.............	7,420	1,056	8,476				
					Total. . . .	19,843	5,405	25,248				
	Balance of capital.	1,06,230	18,404	1,24,634	Balance of charges.	...	4,230	...	Balance of income	20,853	...	16,618
Paular annicut in the district of North Arcot....	Outlay on original works and reconstruction.........	4,51,128	64,849	5,15,977	Interest on the capital, Rs. 4,51,128, at 4 per cent.	20,125	18,045	38,170	Gross proceeds from all sources...	1,435	1,532	2,967
	Deduct deterioration by wear and tear, &c..............	...	...	...	Maintenance and repairs....	1,106	497	1,603				
					Total......	21,231	18,542	39,773				
	Balance of capital.	4,51,128	64,849	5,15,977	Balance of charges.	19,796	17,010	36,806	Balance of income.	...	...	...
Pennay annicut in the district of North Arcot...	Outlay on original works and reconstruction........	46,509	972	47,481	Interest on the capital, Rs. 46,509, at 4 per cent........	1,860	1,860	3,720	Gross proceeds from all sources....	5,329	...	5,329
	Deduct deterioration by wear and tear, &c..........	...	...	...	Maintenance and repairs..........	1,000	750	1,750				
					Total....	2,860	2,610	5,470				
	Balance of capital.	46,509	972	47,481	Balance of charges.	...	2,610	141	Balance of income.	2,469	...	...
Cheyar annicut in the do....	Outlay on original works and reconstruction...... ...	10,916	1,172	12,088	Interest on the capital, Rs. 10,916, at 4 per cent.........	436	436	872	Gross proceeds from all sources...	7,896	...	7,896
	Deduct deterioration by wear and tear, &c.............	...	...	...	Maintenance and repairs...........	828	414	1,242				
					Total....	1,264	850	2,114				
	Balance of capital.	10,916	1,172	12,088	Balance of charges.	...	850	...	Balance of income:	6,632	...	5,782
Lower Coleroon annicut in the district of South Arcot.........	Outlay on original works and reconstruction.........	1,29,050	...	1,29,050	Interest on the capital, Rs. 1,29,050, at 4 per cent.....	98,078	5,162	1,03,240	Gross proceeds from all sources...	47,41,017	3,39,690	50,80,707
	Deduct deterioration by wear and tear, &c............	10,000	2,581	12,581	Maintenance and repairs............	3,98,297	..	3,98,297				
					Total......	4,96,375	5,162	5,01,537				
	Balance of capital.	1,19,050	2,581	1,16,469	Balance of charges.	..	..	..	Balance of income.	42,44,642	3,34,528	45,79,170

* The deficiency in the current year's revenue is owing to the Cyclone of November 1857 having breached most of the tanks under the annicut channels.

Statement of Remunerative Works for 1857-58, (continued.)

Name of Work.	Capital.				Revenue.							
	Outlay on Construction (Dead Stock valuation.)				Charges.				Income.			
	Description.	Amount up to the end of the past year.	Amount for the current year.	Total.	Description.	Amount up to end of the past year.	Amount for the current year.	Total.	Description.	Amount up to end of the past year.	Amount for the current year.	Total.
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Vellaur annicut in the district of South Arcot..	Outlay on original works and re-construction........	94,037	...	94,037	Interest on the capital, Rs. 94,037, at 4 per cent......	30,092	3,761	33,853	Gross proceeds from all sources...	6,08,432	65,859	6,74,291
	Deduct deterioration by wear and tear, &c..........	10,000	1,881	11,881	Maintenance and repairs..........	99,169	564	99,733				
					Total..	1,29,261	4,325	1,33,586				
	Balance of capital.	84,037	1,881	82,156	Balance of charges.	...	...	...	Balance of income.	4,79,171	61,534	5,40,705
Ragavien channel in the district of do........	Outlay on original works and re-construction.......	13,603	...	13,603	Interest on the capital, Rs. 13,603, at 4 per cent.....	4,353	544	4,897	Gross proceeds from all sources...	2,04,889	30,815	2,35,704
	Deduct deterioration by wear and tear, &c.........	5,000	580	5,580	Maintenance and repairs, &c......	4,732	987	5,719				
					Total......	9,085	1,531	10,616				
	Balance of capital.	8,603	580	8,023	Balance of charges.	...	...	...	Balance of income.	1,95,801	29,284	2,25,088
Trivady annicut in the district of do..........	Outlay on original works and re-construction.......	13,729	...	13,729	Interest on the capital, Rs. 13,729, at 4 per cent......	4,393	549	4,942	Gross proceeds from all sources...	2,10,077	26,844	2,36,921
	Deduct deterioration by wear and tear, &c............	2,000	274	2,274	Maintenance and repairs, &c.......	972	1,165	2,137				
					Total......	5,365	1,714	7,079				
	Balance of capital.	11,729	274	11,455	Balance of charges.	...	...	...	Balance of income.	2,04,712	25,130	2,29,842
Vieravaudy annicut in the do.	Outlay on original works and re-construction.....	15,016	...	15,016	Interest on the capital, Rs. 15,016, at 4 per cent.....	992	601	1,593	Gross proceeds from all sources....	...	2,587	2,587
	Deduct deterioration by wear and tear, &c.........	1,000	300	1,300	Maintenence and repairs..........	...	403	403				
					Total.....	992	1,004	1,996				
	Balance of capital.	14,016	300	13,716	Balance of charges.	992	...	...	Balance of income.	..	1,583	591
Upper Coleroon annicut in the district of Tanjore.......	Outlay on original works and re-construction......	2,39,866	...	2,39,866	Interest on the capital, Rs. 2,39,866 at 4 per cent.....	1,53,536	9,595	1,63,131	Gross proceeds from all sources.....	63,76,151	16,11,378	79,87,529
	Deduct deterioration by wear and tear, &c........	...	...	...	Maintenance and repairs..........	1,19,655	8,544	1,28,199				
					Total...	2,73,191	18,139	2,91,330				
	Balance of capital.	2,39,866	...	2,39,866	Balance of charges.	...	...	..	Balance of income.	61,02,960	15,93,239	76,96,199
Lower Coleroon annicut in the district of Tanjore.........	Outlay on original works and re-construction.... ..	2,12,973	12,217	2,25,190	Interest on the capital, Rs. 2,12,973 at 4 per cent.....	46,674	8,519	55,193	Gross proceeds from all sources.....	2,71,341	19,511	2,90,852
	Deduct deterioration by wear and tear, &c....	..	...	...	Maintenance and repairs..........	69,358	5,190	74,548				
					Total...	1,16,032	13,709	1,29,741				
	Balance of capital.	2,12,973	12,217	2,25,190	Balance of charges.	...	...	...	Balance of income.	1,55,309	5,802	1,61,111

Statement of Remunerative Works for 1857-58, (continued.)

Name of Works.	Capital.				Revenue.							
	Outlay on Construction (Dead Stock valuation.)				Charges.				Income.			
	Description.	Amount up to the end of the past year.	Amount for the current year.	Total.	Description.	Amount up to the end of the past year.	Amount for the current year.	Total.	Description.	Amount up to the end of the past year.	Amount for the current year.	Total.
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Varahaloor channel in the district of Trichinopoly..........	Outlay on original works and reconstruction........	33,076	13,807	46,883	Interest on the capital, Rs. 33,076, at 4 per cent.......	2,523	1,323	3,846	Gross proceeds from all sources....	1,641	2,063	3,704
	Deduct deterioration by wear and tear, &c.........	...	...	...	Maintenance and repairs...............	3,165	154	3,319				
					Total......	5,688	1,477	7,165				
	Balance of capital,	33,076	3,807	46,883	Balance of charges.	4,047	...	3,461	Balance of income.	...	586	...
Chittanay annicut across Vigay river in the district of Madura.	Outlay on original works and reconstruction.	15,995	...	15,995	Interest on the capital, Rs. 15,995, at 4 per cent.......	14,312	640	14,952	Gross proceeds from all sources....	1,05,457	4,769	1,10,226
	Deduct deterioration by wear and tear, &c,.........	...	...	...	Maintenance and repairs...............	17,170	585	17,755				
					Total....	31,482	1,225	32,707				
	Balance of capital.	15,995	...	15,995	Balance of charges.	...	...	...	Balance of income.	73,975	3,544	77,519
Coneyempolliem annicut in the district of Coimbatore..........	Outlay on original works and reconstruction.	42,970	...	42,970	Interest on the capital, Rs. 42,970, at 4 per cent.......	49,845	1,719	51,564	Gross proceeds from all sources....	29,536	685	30,221
	Deduct deterioration by wear and tear, &c..........	...	...	...	Maintenance and repairs...............	9,829	46	9,875				
					Total....	59,674	1,765	61,439				
	Balance of capital.	42,970	...	42,970	Balance of charges.	30,138	1,080	31,218	Balance of income.	...	...	...
Coompta and Dharwar line viâ Daveymunny and Arbyle ghât in the district of Canara.	Outlay on original works and reconstruction.......	2,34,081	...	2,34,081	Interest on the capital, Rs. 2,34,081 at 4 per cent.......	9,363	9,363	18,726	Gross proceeds from all sources....	11,427	3,715	15,142
	Deduct deterioration by wear and tear, &c..........	...	...	...	Maintenance and repairs...........	59,762	52,224	1,11,986				
					Total..	69,125	61,587	1,30,712				
	Balance of capital.	2,34,081	...	2,34,081	Balance of charges.	57,698	57,872	1,15,570	Balance of income.	...	...	...
Chowghaut Yennamakuldam in the district of Malabar.	Outlay on original works and reconstruction......	30,880	...	30,880	Interest on the capital, Rs. 30,880 at 4 per cent....	16,058	1,235	17,293	Gross proceeds from all sources.	28,469	1,899	30,368
	Deduct deterioration by wear and tear, &c.........	1,544	618	2,162	Maintenance and repairs...........	14,373	411	14,784				
					Total....	30,431	1,646	32,077				
	Balance of capital.	29,336	618	28,718	Balance of charges.	1,962	...	1,709	Balance of income.	...	253	...

Fort St. George, 1st August 1859.

(Signed) J. H. BELL, Lieutenant-Colonel,
Chief Engineer.

APPENDIX II.

Statement shewing the Levelling, Surveying and Mathematical Instruments and Drawing materials, &c., issued to the different Districts, &c., from the 1st May 1858 to the 30th April 1859, from the Chief Engineer's Stores.

Names of Articles.	Arcot, North.	Arcot, South.	Bellary.	Canara.	Chingleput.	Coimbatore.	Cuddapah.	Ganjam.	Godaveri.	Kistnah.	Madras.	Madura.	Malabar.	Nellore.	Salem.	Trichinopoly.	Vizagapatam.	Central office of P. W.	Garrison Engineer's office.	Civil Architect's office.	Civil Engineering College.	Collector of Madras.	Officer Commanding Sappers and Miners.	Executive Engr. Bangalore.	Commandant Engr.'s Office.	John Maitland, M. D.	J. D. Robinson, Esq., Superintendent of Mofussil Police.	Total.	Remarks.
Apparatus for ascertaining velocity of currents.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	
Barometers, aneroid.	...	...	...	...	...	2	3	2	2	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	13	
Do. mountain.	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	
Boilcous Traverse tables	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	
Chains measuring with arrows.	...	...	...	7	...	2	6	...	20	...	...	5	...	...	...	3	...	...	1	...	...	3	...	...	...	...	1	48	
Circumferenters with stands	...	...	...	...	...	4	4	2	3	2	...	2	...	...	...	4	...	...	...	...	...	1	...	...	...	...	...	22	
Clinometers	...	...	...	...	...	4	1	...	2	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	9	
Color boxes complete, 2nd size	...	...	2	2	...	2	...	2	...	2	...	2	...	...	...	3	...	...	...	...	...	2	1	1	1	...	...	20	
Do. do. small	2	...	...	3	...	12	10	10	20	12	8	4	...	...	...	6	...	2	...	...	80	...	20	...	1	...	1	191	
Compasses Prismatic, without stand.	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	
Do. do. with do.	...	...	...	2	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	1	6	
Do. Beam.	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	4	
Do. Comprehensive.	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	5	
Do. Proportional.	...	...	2	...	...	2	...	...	...	...	...	...	...	...	...	2	...	5	1	...	...	...	...	...	1	...	...	13	
Do. Brass, fine points 4, 5 and 6.	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	15	...	7	...	...	...	...	...	...	...	...	...	23	
Drawing Boards.	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	
Ebony Rule, brass edged, 3 feet.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	
Eidographs, complete.	...	...	...	...	...	1	...	...	1	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	5	
Folding Rules, 3 feet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	1	...	...	...	...	...	...	...	...	7	
French curves, sets	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	4	
Gregory Logarithms, No.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	
Levelling instruments Y, with stands.	...	...	...	2	...	2	2	...	2	2	...	2	1	1	...	2	...	...	1	...	...	...	1	...	...	...	...	18	
Do. do. Dumphy do. do.	...	...	...	...	...	...	...	1	2	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	7	
Levels, pocket	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	
Mathematical Tables, (Hutton's).	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	4	
Do. Instrument boxes, brass bound.	2	...	2	3	...	2	2	2	3	2	...	...	...	...	...	4	...	4	1	1	...	1	1	1	1	...	...	30	
Do. do. cases, Fish skin.	4	...	3	4	...	6	4	6	12	6	7	3	...	...	...	6	...	5	...	...	10	...	...	...	...	...	1	75	
Mathematical Tables... 2nd sort.	4	...	3	...	...	6	10	8	12	...	...	3	...	...	...	...	...	...	1	...	40	...	...	...	...	...	...	87	
Parallel Rulers of sizes (Ebony)	...	...	9	7	...	26	10	8	24	18	7	...	1	...	1	19	...	3	3	...	...	...	...	2	2	...	1	141	
Do. do. do. (Brass)	...	...	...	...	...	...	...	3	3	...	...	...	...	...	...	3	...	1	...	1	...	...	...	1	...	...	...	12	
Perambulators.	...	...	...	2	...	...	...	...	...	2	...	...	...	1	1	2	...	...	...	...	...	...	...	...	...	...	...	8	
Pentagraphs.	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	
Plane Tables.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	
Plotting Scales, box wood, sets	...	...	...	...	...	8	4	4	8	8	...	...	...	...	...	6	...	2	...	...	...	...	12	...	1	...	...	53	
Do. do. sliding for off-sets	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	
Pocket Sextants	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	3	
Protractors, ivory	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	1	...	...	...	...	...	...	...	...	6	
Protractors, brass circular	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	
Do. do. semicircular	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	5	
Quadrants, Gunners	...	...	...	2	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	5	
Rain Guages.	12	...	...	...	1	...	...	4	...	...	1	...	6	1	...	...	21	...	...	...	...	...	...	...	...	2	...	48	
Road Meters	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	
Scales, Marquois, sets.	...	...	1	...	...	6	...	2	...	...	...	...	...	...	...	3	...	1	...	...	10	...	...	...	...	...	...	23	
Spare Drawing Pens	...	...	...	...	...	12	...	10	12	12	...	...	...	...	...	6	...	4	...	...	...	...	20	2	...	...	...	78	
Squars, Optical	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	4	
Do. T.	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	4	
Sliding Rules	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2	
Staves, Levelling	...	...	...	...	...	4	8	...	...	...	...	4	2	...	...	...	...	...	2	...	...	...	...	...	...	...	...	20	
Straight Edges, brass, 3 feet.	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	4	
Tapes, measuring	...	...	4	...	...	9	11	15	24	6	...	10	8	...	6	6	...	1	1	...	...	1	...	...	...	...	...	102	
Sand Glasses, minute	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	
Theodolites, complete, 7 inch.	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	3	
Do. do. 5 do.	...	...	...	...	...	1	1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	7	
Tracing Glasses	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	
Thermometers, maximum	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	3	
Do. minimum.	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	3	
Tubes, Glass, with Mercury	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	

Statement shewing the Tools and Implements, issued to the different Districts, from the 1st May 1858 to the 30th April 1859.

Names of Articles.	Arcot South.	Bellary.	Chingleput.	Cuddapah.	Godavery.	Kistnah.	Kurnool.	Madras.	Madura.	Malabar.	Nellore.	Salem.	Tanjore.	Trichinopoly.	Civil Architect.	Garrison Engineer	Total	Remarks.
Axes Pick, Europe	100	...	...	...	...	...	500	...	...	...	...	...	...	...	...	...	600	
Do. felling.	...	...	...	...	...	...	...	...	...	24	...	...	...	...	...	...	24	
Do. hand	...	...	...	...	...	...	50	...	...	...	...	...	...	...	...	...	50	
Anvils, ironsmiths	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2	
Barrows, wheels, with iron wheels.	...	...	...	...	27	2	...	...	...	11	...	...	...	4	...	...	44	
Beams for scales, iron small, to weigh 5 cwt.	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	
Do. copper to weigh 14lbs.	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2	
Bars, Tamping brass.	4	...	...	12	...	...	10	...	...	...	...	...	...	...	...	...	26	
Beams for scale, copper to weigh 56lbs.	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Do. do. do. iron to weigh 20 cwt.	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Braces, Armourer with bits	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	
Bellows, Forge, Europe.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	4	
Blocks Gin, iron, with brass sheave, double	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	
Braces, Carpenters, with Bits.	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	2	
Chains for scales, 8 per set to weigh 5 and 10 cwt.	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	2	
Crows, iron, common	100	...	...	...	...	...	30	...	...	...	...	...	...	...	...	...	130	
Chisels, cold.	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	6	
Compasses, iron Carpenters, large and small.	...	...	...	...	...	...	...	...	...	...	9	...	...	...	...	...	9	
Chisels, Carpenter's Firmer.	...	...	...	...	...	...	...	...	...	...	63	...	...	...	...	...	63	
Do. do Socket.	...	...	...	...	...	...	...	...	...	...	21	...	...	...	...	...	21	
Do. do. Mortice	...	...	...	...	...	...	...	...	...	...	11	...	...	...	...	...	11	
Dum Screws, Carpenters	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	
Drivers Screw, Carpenters	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	4	
Files of sorts.	...	6	...	...	...	...	...	...	...	2	156	...	...	12	...	48	224	
Gimblets, Carpenters	...	...	...	...	...	...	...	...	...	...	...	...	...	12	...	...	12	
Hammers, small	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	
Hooks, Bill, Europe.	60	...	...	...	...	...	50	...	...	...	...	...	...	...	...	...	110	
Hammers, rivetting.	...	1	...	...	...	...	...	...	...	...	...	...	2	...	...	...	3	
Hammers, sledge.	...	1	...	...	...	...	15	...	...	...	...	...	...	...	...	1	17	
Do. hand.	...	1	...	...	...	...	10	...	...	...	...	...	...	...	4	2	17	
Do. claw.	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	5	
Jumpers, iron miners.	10	...	...	...	...	...	20	...	...	...	...	...	...	...	...	...	30	
Do. stell, pointed.	...	...	...	...	40	...	...	...	...	...	...	...	...	...	...	...	40	
Laths, 10" 12', bed with double gear.	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	
Do. hand (6" 8' feet bed.)	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	2	
Mamoties.	300	...	...	...	...	...	500	...	...	...	...	...	...	...	...	2	802	
Needles, priming.	...	2	...	...	...	...	10	...	...	...	...	...	...	...	...	...	12	
Do. Tamping, copper.	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	2	
Plates, screw with taps, large.	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Planes of sorts.	...	4	...	...	...	...	...	...	...	...	24	...	...	6	...	...	34	
Stone, grinding, Europe.	...	...	...	...	...	3	1	1	...	...	...	...	1	1	...	2	9	
Scales, wooden small to weigh 5 cwt., pairs.	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	
Do. copper, 14 lbs., pairs.	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2	
Do. brass with beam, stand and 10 brass weights to weigh letters.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Saws, hand.	...	...	...	...	...	...	2	...	...	...	6	...	1	4	2	...	15	
Do. cross cut.	...	1	...	...	...	...	3	...	...	...	...	...	1	1	...	...	6	
Spoke, shave carpenters common	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	
Scales, copper 56th lbs., pairs.	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Scoops, spoon, iron, miners 1" bore.	...	...	...	...	...	...	10	...	...	...	...	...	...	...	...	...	10	
Scales, wooden large, to weigh 20 cwt., pairs.	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Saws, pit.	...	...	...	...	...	...	...	...	...	...	...	...	...	3	4	...	7	
Do. whip	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	
Stone, Oil, Turkey.	...	...	...	...	...	...	...	...	...	...	3	...	...	2	...	...	5	
Stocks with dies and taps, 9" and 6"	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2	
Squares, Carpenters, with steel blades 18"	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	
Do. do. 12"	...	...	...	...	...	...	...	1	...	...	3	...	...	...	...	...	4	
Do. do. 6"	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...	...	6	
Do. do. 3"	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	
Stone, rag blue.	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	
Triangles, for scales, copper, small.	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Tools, turners.	...	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...	3	
Tongs, smiths, of sorts.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	6	
Vices, iron, standing.	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	
Do. do. hand, Europe.	...	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	3	
Do. bench.	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	3	
Weights, iron 56lbs,	...	1	40	...	...	...	...	...	10	...	...	...	...	...	...	...	51	
Do. do. 28, 14, 7, 4, 2, 1, ½, ¼, lbs.	...	8	8	...	...	...	...	...	8	...	...	...	...	...	...	...	24	
Do. braces, 4, 2 and 1lbs.	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	3	
Do. do. 8, 4, 2, 1, ½, ¼ and ⅛, oz. one of each.	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...	7	
Do. brass, 14 and 7lbs.	...	...	...	...	...	...	2	...	2	...	...	...	...	...	...	...	4	
Do. do. 4, 2 and 1 lbs.	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	3	
Do. do. 8, 4, 2, 1, ½, ¼, oz.	...	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...	6	
Wedge, steel.	...	12	...	...	...	...	20	...	...	...	...	...	...	...	...	...	32	

Statement shewing the issues of Machinery to the different Districts, from the 1st May 1858, to the 30th April 1859.

Names of Articles.	Arcot, North.	Arcot, South.	Bellary.	Canara.	Chingleput.	Coimbatore.	Gun Carriage.	Ganjam.	Godavery.	Kistnah.	Mint.	Madura.	Malabar.	Nellore.	Salem.	Tanjore.	Tinnevelly.	Trichinopoly.	Vizagapatam.	Civil Architect.	Garrison Engineer.	Executive Engineer, Bangalore.	Total	Remarks.
Apparatus, boring, sets.	4	0	..	1	..	2	..	...	...	...	...	...	1	...	..	...	1	2	..	..	...	..	11	
Blocks, iron, single.	...	...	...	3	...	...	..	...	...	...	...	...	...	...	..	1	...	...	...	...	...	...	4	
Do. do. double.	...	...	...	4	..	...	..	...	...	...	...	...	...	...	...	1	...	...	...	...	..	...	5	
Do. do. treble.	...	...	...	6	...	...	..	...	...	...	...	...	...	...	...	...	...	1	..	...	..	...	7	
Do. do. snatch.	...	...	...	6	..	..	..	...	2	...	...	...	2	2	2	3	...	2	2	..	2	..	21	
Circular Saw, tables.	4	1	...	1	...	1	..	..	1	...	...	...	1	...	...	1	1	1	...	...	..	2	14	
Carbs, iron, single.	1	1	..	1	..	...	...	...	...	...	...	...	1	..	...	...	..	...	...	...	..	...	4	
Do. do. double.	...	1	..	1	1	...	..	...	...	...	...	...	1	...	...	1	...	...	..	..	..	2	6	
Cranes, transportable.	3	1	...	1	..	2	...	1	...	..	...	...	1	...	..	1	2	1	...	...	...	...	12	
Do. five (5) ton.	1	...	..	...	...	..	..	..	...	...	...	...	...	..	...	...	..	...	..	1	1	...	5	
Engine, steam pile, driving	...	...	...	..	...	...	..	..	...	...	...	...	...	...	..	...	..	...	...	..	1	...	1	
Do. do. portable, 4 horse power.	...	...	..	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	..	...	2	...	2	
Do. do. do. 6 do. do.	...	..	...	..	...	...	..	...	...	1	...	...	...	...	...	1	...	...	..	..	2	..	4	
Jack, Screws.	...	...	..	2	...	..	..	1	...	...	...	...	...	...	..	1	...	1	..	...	...	...	6	
Machine, brickmaking.	...	...	..	..	..	..	...	..	...	...	...	...	...	..	2	...	...	...	...	...	1	..	3	
Mills, pug.	...	...	...	..	...	...	...	..	...	...	...	...	...	...	2	...	..	...	..	..	1	..	3	
Machines, punching and shearing.	1	...	...	1	...	...	...	1	...	..	...	...	...	...	1	...	...	1	...	..	..	...	5	
Plate screw, with taps, large.	...	...	..	1	...	..	..	1	1	..	...	...	...	...	..	1	..	...	...	..	..	...	4	
Do. do. with taps, small.	...	...	...	1	..	...	...	...	...	...	...	...	1	..	...	1	...	1	...	..	..	...	5	
Rails, iron, bridge, feet.	...	...	..	1,000	..	..	..	...	6,000	...	...	...	4,000	..	..	4,000	...	...	..	...	8,780	...	23,780	
Steam, dredging, vessels.	...	...	...	..	1	...	...	...	1	2	...	...	...	..	..	1	...	...	...	...	...	..	5	
Tools, Carpenters, sets.	...	...	...	1	..	...	...	...	...	..	..	...	..	..	..	...	...	...	...	...	..	..	1	
Weighing Machine.	1	...	..	1	..	...	...	1	1	1	..	...	...	..	..	1	...	...	...	..	...	...	6	
Pullies for Rams, 12 inch.	...	...	...	...	...	..	..	..	...	...	...	...	2	..	...	...	...	...	...	..	...	..	2	
Do. do. do. 18 do.	...	...	...	..	...	..	..	..	...	..	...	...	2	...	..	...	...	...	..	...	..	...	2	
Rams for pile driving.	...	...	...	...	..	..	...	...	...	...	...	...	2	...	...	...	...	...	..	...	..	..	2	
Monkies for pile driving	...	..	...	..	...	...	..	..	...	...	..	...	3	...	..	...	...	...	..	...	..	..	3	
Crabs single, for pile driving.	...	...	...	...	...	..	...	..	...	...	..	...	1	..	...	...	...	...	...	...	..	...	1	
Set of iron work for monkey pile driving.	...	..	...	..	...	..	...	...	...	...	...	...	1	...	...	...	...	...	..	...	...	...	1	

Fort Saint George,
31st August 1859.

J. H. BELL, Lieutenant Colonel,
Chief Engineer

APPENDIX III.

From J. DUMPHY,
Superintendent and Manager Government Lithographic Press, Central Office of P. W.,
To Lieut.-Col. J. H. BELL, Chief Engineer,
Fort Saint George.

Sir,

I beg to submit, annexed, a comparative statement of work executed at the Government Lithographic Press of the Central Office of P. W., during the official years 1857-58 and 1858-59.

I have this time shewn a classified valuation of the drawings, charging 35 Rupees per 100 for the large, and Rupees 15 per 100 for the smaller impressions. In this branch of the work, there is a small decrease; but in the Circulars, Forms, &c., there is an *increase* of 20,843 impressions. The memorandum at the foot of the statement giving these and other particulars, exhibits a balance of Rupees 776-7, in favor of the Press, which, though not so satisfactory as might be expected, will, I trust, not only shew the value of the Press, but also operate in my favor.

In the *quality* of the work also during the past year, there has been a marked improvement; especially in the impressions which have been taken from the Press ready colored. The specimens of the various branches of Lithography, which may be seen in the department, will bear me out in *this* statement.

In again adverting to my present reduced salary, and to the sacrifice of my private Press, by which I am, and have been for the last 2½ years, a considerable monthly loser, and soliciting your favorable consideration and that of the Government thereto.

Government Lithographic Press
of Central Office of P. W.
Fort Saint George,
27th June 1859.

Comparative statement of work executed at the Government Lithographic Press during the official years 1857-58 and 1858-59.

	1857-58				1858-59			
	Maps and other drawings		Circulars, Forms, &c.		Maps and other drawings		Circulars, Forms, &c.	
	No. of Copies.	No. of impressions.	No. of Copies.	No. of impressions.	No. of Copies.	No. of impressions.	No. of Copies.	No. of impressions.
Central office of Public Works … … … … … … … …	9,286	11,352	88,167	79,212	4,650	4,660	1,01,025	93,397
District Engineer's, through the Central office… … … … …	…	…	6,600	2,000	…	…	7,050	1,850
Government office, Public department… … … … … … …	1,340	1,712	11,800	5,800	1,624	2,034	…	…
„ Political department… … … … … … …	…	…	…	…	71	184	…	…
„ Judicial department … … … … … … …	36	36	…	…	…	…	…	…
„ Military department… … … … … … …	2,200	736	9,050	3,925	110	110	5,050	3,300
„ Public Works department … … … … … …	102	102	6,600	1,300	2,166	4,976	…	…
Government Gazette Press … … … … … … … … …	8,755	9,574	900	900	16,590	10,792	…	…
Government Central Museum … … … … … … … … …	7,600	7,000	…	…	…	…	…	…
Military Board office… … … … … … … … … … …	400	400	…	…	1,795	2,715	…	…
Revenue Board office … … … … … … … … … … …	102	204	10,000	1,738	…	…	…	…
Adjutant General's office … … … … … … … … … …	4,360	5,240	10,200	800	595	315	…	…
Quarter Master General's office … … … … … … … …	182	182	3,539	3,028	200	400	…	…
Town Major's office … … … … … … … … … … …	…	…	5,850	975	…	…	4,000	667
Collector of South Arcot… … … … … … … … … … …	310	310	…	…	…	…	…	…
„ Madras … … … … … … … … … … …	1,095	1,225	…	…	3,701	3,701	…	…
University of Madras … … … … … … … … … … …	…	…	254	254	…	…	…	…
Conservator of Forests … … … … … … … … … …	1,000	800	…	…	…	…	…	…
Inspector General of Hospitals … … … … … … … … …	…	…	1,600	400	…	…	…	…
Office of the Commandant of Engineers… … … … … …	…	…	7,984	1,680	…	…	1,990	580
„ Commander-in-Chief… … … … … … … …	…	…	2,100	600	…	…	6,760	3,380
Superintending Engineers of Circles… … … … … … …	…	…	3,100	1,033	…	…	6,000	6,000
Male Asylum Press… … … … … … … … … … … …	300	300	…	…	1,200	600	…	…
Madras Journal of Literature and Science … … … … …	1,660	3,165	…	…	450	900	…	…
Civil Auditor's Office…… … … … … … … … … … …	…	…	3,000	475	…	…	5,000	835
Lieutenant Taylor's Chart for sale and distribution … … …	600	600	…	…	1,300	1,300	…	…
Map to accompany the yearly Budget of the Madras Presidency (sold also to the public,) … … … … … … … …	500	4,500	…	…	…	…	…	…
Madras Observatory … … … … … … … … … … …	…	…	…	…	…	…	960	2,880
Consulting Engineer for Railways… … … … … … … …	…	…	…	…	50	100	…	…
Principal Civil Engineering College. … … … … … …	…	…	…	…	…	…	1,250	139
Chief Engineer, Mysore… … … … … … … … … … …	…	…	…	…	100	100	…	…
Exhibition of 1859… … … … … … … … … … … …	…	…	…	…	10,084	10,084	…	…
Director of Public Instruction … … … … … … … …	…	…	…	…	3,570	3,570	13,110	12,350
Miscellaneous… … … … … … … … … … … … …	…	…	…	…	50	50	25	25
Total………	39,228	47,438	1,70,444	1,04,200	48,319	46,624	1,55,221	1,25,403
Average per month……	3,269	3,953	1—14,204	8,683	4,027	3,887	12,937	10,450

65

MEMORANDUM.

Value of Maps and other drawings 15,995 large sized impressions, at 35 Rupees per 100 impressions (including cost of drawing) ..	Rupees	5,528 4 0	
Value of Maps and other drawings, 30,829 smaller sized impressions at 15 Rs. per 100 impressions (do.)…	„	4,624 5 7	
Value of Circulars and other Forms, 1,20,403 impressions, at 7 Rupees per 100 impressions including cost of writing………	„	8,428 3 4	
Value of colouring work done in the Department, 14,505 copies, at an average of 1 Anna, 6 Pie per copy………	„	1,359 13 6	19,940 10 5
Cost of office establishment for the Official year 1858-59………	Rupees	23,400	
Deduct Salaries of three Draftsmen exclusively employed in compiling, correcting, and revising district Maps; also the salaries of one Tracer and one Moochee………	„	4,986	18,414
Add Contingent expences incurred in working the Presses, &c.,………	abou Rupees	750 3 5	—19,164 3 5
Balance in favor of the Department (by Circular and Printing branches)…		Rupees……	776 7 0

(Signed) J. DUMPHY,
Superintendent and Manager.

GOVERNMENT LITHOGRAPHIC PRESS
CENTRAL OFFICE OF P. W., FORT SAINT GEORGE,
20th June 1859.

(True Copy.)

(Signed) J. H. BELL, Lieut.-Col.,
Chief Engineer.

No. 17. From Lieut.-Colonel, J. H. BELL. Chief Engineer; to T. PYCROFT, Esq., Chief Secretary to Government, dated 15th October 1859, No. 6171.

Enclosure I.
1 Statement.
No. 275, dated 12th Sep 1859.

I have the honor to forward herewith the statement of Charges on account of the establishment of the Department Public Works for the past official year, as called for in your memorandum as per margin.

In annual progress report....	16,92,070
In accompanying statement..	16,64,788
	27,282

2. In transmitting this statement, I would observe that the amount therein shewn differs from the sum stated in my progress report for 1858-59, the present return having been compiled, as far as the staff pay and other civil charges are concerned, from a statement furnished to me by the Civil Auditor; the military pay being taken from the Accountant General's statement, which was the source from which I took the amount stated in my progress report as the cost of establishments. The difference, I imagine, arises principally from the Civil Auditor's statement being that of all *bills passed for payment* during last year, while the Accountant General's exhibits all *sums actually paid* during that period, including arrears of pay for the preceding year.

3. Had the Accountant General's statement shewn the civil pay and allowances, subdivided under the heads which you wish to be specially mentioned, I should have adopted his figures, and so saved the above discrepancy; but as it does not contain that information, I availed myself of the Civil Auditor's return, in order to comply with your request.

4. In the accompanying statement, the per centage of *civil pay and allowances* to the expenditure in each district is shown, but the military pay is added in one sum at the end, as I do not possess the information necessary to enable me to apportion it among the districts.

Statement shewing the various Items of Charges on account of the Department of Public Works during 1858-59.

	Cost of Professional Establishment.	Cost of Office Establishment including Rent.	Travelling Charges.	Batta.	Contingencies.	Total.	Expenditure upon New Works and Repairs.	Per centage Charges to expenditure.	REMARKS.
Central Office..	73,964	77,570	4,397	2,559	15,306	1,73,796	..	..	The pay and allowances of the Mechanical Engineers are included in the items under Central office.
Do. Lithographic Press..	..	23,460	..	..	1,838	25,298	..	..	In the contingencies is included the gratuity equal to 3 months' salary paid to Colonel C. E. Faber.
Ganjam	28,553	9,482	8,018	..	530	46,583	1,12,855	41·276	In Professional establishment is included consevrancy establishment.. .... Rs. 732
Vizagapatam	15,933	5,398	4,379	..	424	26,134	38,821	67·319	
Godavery Division..	1,14,733	18,017	19,221	1,917	1,212	1,55,100	4,12,529	37·597	In Professional establishment are included conversancy establishment.. .... Rs. 4,968 Irrigation establishment..... .... „ 12,993 Navigation do. .... „ 12,063 Rupees 30,024
Kistnah Division..	80,220	16,634	16,992	50	486	1,14,382	2,25,471	50·730	In Professional establishment are included anicut establishment.. .... Rs. 4,704 Delta do. .... „ 11,279 Rupees 15,983
Nellore	32,943	11,879	12,652	..	2,258	59,732	3,55,371	16·808	In Professional establishment is included Pennair anicut establishment.. .... Rs. 1,056
Cuddapah	36,722	11,711	12,814	..	781	62,028	1,48,017	41·905	
Bellary	37,701	12,310	11,764	..	2,753	64,528	2,72,320	23·695	
Kurnool	16,208	5,980	5,646	..	888	28,722	67,131	42·784	
Chingleput	31,207	8,669	6,873	..	749	60,857	3,01,820	20·163	Charges in Chingleput.................. Rs. 47,498 Do. Eastern Coast Canal.......... „ 13,359 Rupees 60,857
Eastern Coast Canal	8,687	2,637	1,678	..	357				
North Arcot	49,818	11,489	9,654	..	411	71,372	1,79,905	39·672	In Professional establishment are included Ponany river channel establishment.... Rs. 742 Cheyar anicut do. .... „ 1,091 Cawerypauk tank and channel do. .... „ 346 Doosemanundoor channel do. .... „ 173 Rupees 2,352

	Cost of Professional Establishment.	Cost of Office Establishment including Rent.	Travelling Charges.	Batta.	Contingencies.	Total.	Expenditure upon New Works and Repairs.	Percentage Charges to expenditure.	Remarks.
South Arcot..	31,832	10,391	10,393	..	1,358	53,974	1,59,656	33·806	In Professional establishment is included marahmut establishment.. .... Rs. 1,773
Tanjore .. .. :	49,017	13,768	14,054	18	1,683	78,540	5,36,735	14·632	In Professional establishment is included Neeranicum establishment.... .... ,, 5,547
Trichinopoly..	34,773	9,496	8,398	..	831	53,501	2,96,610	18·037	In Professional establishment are included conservancy establishment Laulgoody channel...... .... ,, 3,833 Establishment for channels Pelágoony and canals in different talugs.. .... ,, 1,779 Rupees 5,612
Madura	27,276	10,093	7,720	108	597	45,794	93,684	48·881	
Tinnevelly	28,804	10,886	8,582	..	356	48,628	90,521	53·720	
Coimbatore	41,013	11,094	7,904	211	613	60,865	94,373	64·494	
Salem..	22,650	8,017	8,085	..	607	39,359	1,50,090	26·223	
Canara	29,330	9,844	9,355	..	1,118	49,647	95,211	52·144	
Malabar	24,652	7,255	6,924	..	811	39,642	1,13,708	34·862	
Civil Architect..	8,403	9,044	68	..	1,766	19,281	1,69,267	11·39	
Garrison Engineer	9,246	9,144	5	..	321	18,716	1,67,333	11·184	
Bangalore..	9,262	2,601	202	..	88	12,153	1,21,280	10·02	
Jackatalla	10,041	3,013	1,706	..	..	14,760	3,05,725	4·827	
	8,52,988	3,29,882	1,97,484	4,893	38,145	14,23,392	45,08,333	31·55	
Military Pay to Officers in the D. P. W.	2,10,202	..	..	..	..	2,10,202	..	..	Debitable to D. P. W. as per Government Notification in Official Gazette of 28th June 1857, Circular Order Book, page 474.
Superintendent of Stationery..	..	..	..	..	28,974	28,974			
Barrack Master, Fort Saint George ..	2,220	..	..	..	..	2,220			
	10,65,410	3,29,882	1,97,484	4,893	67,119	16,64,788	45,08,333	36·926	

Central Office of P. W.,
Fort Saint George, 15th October 1859.

J. H. BELL, *Lieut. Colonel*,
Chief Engineer.

No. 18. Order thereon, 12th January 1860, No. 91.

Paragraph 1. The Chief Engineer lays before Government the usual annual report on the operations of the Public Works Department for the official year 1858-59.

2. The expenditure of the year amounted to Rupees 45,08,433 and was distributed among the different descriptions of works in the proportions shewn below.

	New works.	Repairs.	Total.
	Rs.	Rs.	Rs.
Irrigation works ...	2,72,422	19,22,764	21,95,186
Communications...	3,49,944	7,97,735	11,47,679
Buildings	8,93,645	2,71,923	11,65,568
Total......	15,16,011	29,92,422	45,08,433

3. The expenditure of 1858-59 exceeded the expenditure of the preceding year in the sum of Rupees 4,21,408.

1857-58 Rupees	40,87,025
1858-59 ,, ...	45,08,433
Increase in 1858-59......	4,21,408

4. The cost of superintendence, of office establishments, travelling, and other charges incidental to the department, as exhibited in the statement received with the Chief Engineer's letter of the 15th October, was as follows:

	Rs.
Cost of professional establishment - - - - - -	10,65,410
Travelling charges - - - - - - - - -	1,97,484
Cost of office establishment - - - - - - -	3,29,882
Batta to do. - - - - - - - - -	4,893
Contingent charges - - - - - - - - -	67,119
Total......	16,64,788

Per centage of travelling charges to cost of professional establishment - - - - - - - - - - 19 per cent.
Per centage of batta to cost of office establishment - - 1½ ,, ,,
Per centage of superintendence to expenditure on work performed 36 ,, ,,

Conservancy.
Anicut.
Channel.
Navigation.
Delta.

5. The cost of the establishment is swelled by the pay of the Mechanical Engineers, employed in this presidency in the care and management of dredges and other machinery, and not in the performance of the work included in the statement. These persons do not form a part of the Public Works establishment proper, and neither they nor the establishments maintained as conservancy, &c., come within the term professional, or can properly be included under that head. It is desirable that these and other similar items should be shewn separately in future annual statements.

Irrigation Works.

New works.

6. The largest expenditures on single new works were in the Godavári division, on account of the Weyairoo and Ellore channel, Rupees 33,109; in the Kistna division, on account of the canal opened to Nedamale, Rupees 38,940; in the Nellore district, on account of the re-construction of the Pennair anicut, Rupees 51,327; and in North Arcot, on account of the Palar anicut, Rupees 23,969. The expenditure in the other districts being on works of less important character do not require special notice.

Repairs.

7. The large expenditure on repairs is ascribed to the violence of the monsoon, and the consequent damage to many irrigation works and roads. In Tanjore and Trichino-

poly the expenditure on irrigation works amounted to Rupees 4,56,698 and 1,69,145 respectively; in the adjoining districts of Madura, Salem, and South Arcot, it was Rupees 41,336; 55,005; and 89,426. In Nellore the repairs amounted to Rupees 2,37,913; in Cádápah 79,066; in Ballári 1,52,899; in Chingleput 97,409; and in Tinnevelly 51,454. In the Godavári and Kistna divisions the expenditure was Rupees 2,70,938, and 1,04,481 respectively. In the other districts it was limited.

8. The violent storms with which some of the southern districts were visited during the year under report account for a large increase in the outlay for repair of irrigation works, but it seems proper to direct the attention of the Chief Engineer to the large augmentation observable in this item since the establishment of the new Public Works Department.

9. The average expenditure on irrigation works and repairs in Tanjore in the 35 years closing with 1850-51, was, on an average, a little more than a lakh of Rupees,* that of the highest year (1850-51) being Rupees 1,73,395. In the year under review the expenditure for repairs amounted to four and a half lakhs of Rupees.

* Appendix 5 Public Works Commissioner's 1st report.

10. A similar result is found in other districts, as will be seen from the subjoined statement extracted from the annual reports.

	Average of the five years to the close of 1850-51 taken from P. W. Commissioner's report.	Repairs in		
		1856-57	1857-58	1858-59
		Rs.	Rs.	Rs.
Nellore...	40,718	1,13,613	1,17,747	2,37,913
Cádápah...	23,215	33,900	35,422	79,066
Ballári...	52,695	53,493	80,182	1,52,899
Chingleput...	77,523	31,136	41,415	97,409
Trichinopoly...	74,136	1,22,606	76,681	1,69,145
Tanjore...	1,17,602	1,95,780	1,65,965	4,56,698

11. The Government are aware that there are valid reasons why the outlay on these repairs should have increased to some extent; in particular, the inadequacy of the former outlay in most districts, and the consequent bad condition of the works; and the increase which has certainly taken place of late years in the cost of labour and of materials. The present observations are intended to call the attention of the Chief Engineer as well as of the Collectors to the necessity of watchful care to guard against a lavish and wasteful expenditure.

COMMUNICATIONS.

12. The sums laid out under this head comprize

	New works.	Repairs.	Total.
Roads and bridges..........	3,23,243	7,60,462	10,83,705
Navigable canals..............	7,813	28,057	35,870
Ports and harbours...........	18,888	4,857	23,745
Ferry boats.....................	...	4,359	4,359
Total......	3,49,944	7,97,735	11,47,679

of these, it will be sufficient to notice the first. The expenditure on account of roads was large in each of the thirteen districts named in paragraph 13 of the Chief Engineer's report, the largest amount for repairs is Rupees 1,08,995 in Chingleput, which contains parts of several costly trunk roads. In Ballári, North and South Arcot, Trichinopoly, Canara, it was upwards of half a lakh in each; in the other districts it was below that amount, the smallest expenditure being Rupees 24,971 in Ganjam.

BUILDINGS.

13. The expenditure on buildings was chiefly on account of the military works at Jackatalla, Rupees 3,05,118; Bangalore, Rupees 1,00,163; and Madras, 72,175. The expenditure for military buildings has also been large in the Godavári division, Ballári, Chingleput, and Trichinopoly.

14. The Government now proceed to notice, in the order of their arrangement, those parts of the report relating to works and projects of more than ordinary interest and importance.

Ganjam District.

Road from Russelkondah, viâ Sunkarabole, to Sohnpore, paragraph 29.

15. This is a road of considerable importance, and has formed the subject of correspondence with the India and Home Governments. According to the present report, the tracing of the whole line has been completed, and is now being cleared and widened; ten miles of jungle and two miles of ghát have also been rendered passable, and Brinjáries and others are already using the road. A fuller account of the progress and prospects of this line was furnished in the Deputy Chief Engineer's letter of the 5th August 1859, No. 3508, and its accompaniments, and the orders passed upon it on the 26th idem will have informed the Chief Engineer of the willingness of Government to give consideration to an estimate for a second class road to Sunkarabole. It is only necessary to add that the expediency of continuing the road beyond the Madras frontier to Sohnpore has been represented to the Government of India.

P. W. Despatch from Home Govt. 6th May 1859, No. 7. p. 5 c. 8.
Proceedings 29th June 1859, No 1593, p. 3.
From Deputy Chief Engineer, 5th August 1859, No. 3508.
Proceedings 26th August 1859, No 2043.
To Government of India, 26th August No. 2044.
Despatch to Home Govt. 26th do „ 41.

Trunk Road from Chicacole to Itchapoor.

16. The description given of the condition of this portion of the northern trunk road, is anything but satisfactory. It is not stated whether any remedial measures are about to be applied; if not, the subject should receive attention at a proper opportunity.

Paragraph 34.

Godavári Division.

17. The account in paragraph 46 of the advantages obtained by the use of the patent brick-making machine is very satisfactory. The barracks at Dauléswarum were constructed with bricks manufactured with Ranson's patent machines, two of which, it is stated, turning out ten thousand a day, were at work for four months manufacturing the bricks, at a cost about the same as that of native manufacture, viz. 9 annas a thousand.

Brick-making machines, paragraph 46.

18. Bricks manufactured at Jackatalla by machines, it is believed of a similar description, cost 8½ Rupees per thousand, being nearly double that of the low country; but special circumstances were advanced to account for the increase. Still, making allowance for all circumstances, the Government cannot but think that the cost of the bricks manufactured at Dauléswarum is understated, and they would wish to receive further explanation on the subject, in particular whether all items of cost are included.

Public Works 7th September 1859, No. 2151, paragraph 3.

19. The statements in paragraphs 55 @ 63 go far to prove the prosperous condition of the Rajahmundry district, attributable in a great measure to the large irrigating works in it. These have enabled the district to supply the deficiencies of the southern market, and it is represented, that no less a quantity than 24 lakhs of Bengal maunds of various kinds of grain have been exported, and that the canals afforded the means of cheap transit to the coast. The export and import trade have also largely increased, and the traffic on the main lines of navigation is further evidence of prosperity. The extent of land irrigated, is set down at seven lakhs of acres, but no information is given as to the data on which this computation has been arrived at.

Paragraphs 55 @ 63.

Kistna Division.

20. The extension of irrigation consequent on the works executed in this division are shewn to have advanced the revenues of the two districts of Masulipatam and Guntúr.

Paragraph 70.

Chingleput District.

21. The traffic from the northward by Cochrane's canal for the year 1858-59 exhibits a slight increase in tonnage and tolls in comparison with that of the previous year, and a small decrease in the number of boats, or rather in the number of their trips.

Cochrane's canal.

	Boats.	Tons.	Tolls. Rs.	A.
1857-58	9,324	1,29,643	32,410	12
1858-59	9,111	1,30,236½	32,559	2
Increase in tonnage and toll	......	593½	148	6
Decrease in boats	213	......	...	...

The chief items which contributed to the traffic of the year were the following:-

	Boats.	Tons.	Tolls. Rs.	A.
Chillies	173	2,184½	516	2
Charcoal	74	413¾	103	7
Firewood	1,429	32,125¾	8,031	7
Passenger boats	2,029	2,118	529	8
Paddy	71	1,163¼	290	13
Shells	1,784	24,008¼	6,002	1
Saltfish	252	1,008	252	0
Salt	2,225	51,720	12,930	0
Straw	31	365½	91	6
Tobacco	31	349	87	4
Turf	35	35	8	12
Wood	569	12,722¼	3,180	9
	8,703	1,28,213¼	32,053	5
Other commodities	408	2,023¼	505	13
Total......	9,111	1,30,236½	32,559	2

22. Comparing the traffic of 1858-59 with that of the previous, the following results appear.

	Increase in Tons.	Tolls. Rs.	A.
Firewood	4,220¾	1,055	3
Paddy	539¼	134	13
Shells	866¼	216	9
Saltfish	539	134	12

	Decrease in Tons.	Tolls. Rs.	A.
Jungle sticks	153	38	4
Red-wood	422¾	105	11
Rafts of timber	163	40	12
Salt	2,865	716	4
Straw	158½	39	10
Tobacco	332	83	0
Wood	1,801¾	450	7

23. The number of boats plying on the canal in 1858-59 was 625, of a total of 8,934 tons, being an increase of 78 boats and 1,135 tons.

24. The receipts and disbursements of the year on account of the canal are shewn in table P to be as follow:—

Receipts in 1858-59.

	Rs.	A.	P.
Toll on miscellaneous produce... ...	19,629	2	0
Do. salt... ...	12,930	0	0
Total receipts, Rupees......	32,559	2	0

Disbursemets in 1858-59.

	Rs.	A.	P.
Toll establishment...	2,004	0	0
Contingencies...	75	13	6
Lock establishment...	438	0	0
Contingencies...	24	12	6
Ordinary repairs...	5,950	0	0
Total disbursements.........	8,492	10	0
Net Revenue...	24,066	8	0

25. The returns of traffic on the Godavári and Kistna channels, and on the Eastern coast canal, which are to be found at the paragraphs of the report noted in the margin, will be published in the official Gazette for general information.

Paragraphs 60-68 and 124.

Madura District.

26. The operations on the Pámben channel, though costing little, have been very much to the advantage of the navigation. The channel is reported to be now practicable for laden vessels of 200 tons, with a draught of eleven feet. Its depth across the reef is on an average 12½ feet, and its width a hundred feet. Through the sand bank, the channel is twelve feet deep and 110 feet wide. The number of vessels which passed through the channel was 1,849.

Pamben channel, paragraphs 169-170.

Tinnevelly.

27. The conduct of the Sub-Overseers towards the coolies, mentioned in paragraph 178, has already come under the consideration of Government in Proceedings bearing date the 24th October 1859, No. 2499.

Paragraph 178.

Audit of Bills in the Central Office.

28. It appears from the report of the audit of bills preceding paragraph 232, that almost the whole of the bills *remaining at the* beginning of 1858-59 and received during that year, had been finally disposed of by the Chief Engineer. Contrasted with the work performed in this branch in the year preceding, there is a large increase in favour of the operations of the year under review, but this was owing to the large accumulation and clearing off the arrears shewn in the correspondence noted in the margin, which it is not necessary to notice in this place. The operations of 1858-59 are shewn below.

Paragraphs 232-233.

From Commissioners on public establishments dated August 1858.
Proceedings 6th Nov. 1858, No. 2341.
Do. 1st Dec. „ „ 2581.

			Rs.
Bills remaining on the 1st May 1858 and received in 1858-59...	10,843	......	117,76,407
Bills passed by the Chief Engineer	10,117	......	102,63,507
Recommended to Government for sanction... ...	431	......	5,45,471
Bills objected to and returned...	230	......	6,18,827
Total.........	10,778	......	114,27,805

Calculating the working days in the year at 300, the daily average of bills disposed of in the Central office is 33, or including all the bills investigated, 36. Looking to the circumstances under which this amount of work has been got through, the Government would only express the hope that a sufficiently careful scrutiny of the bills has actually taken place.

Operations of the Lithographic Department.

29. The work performed in the Lithographic department, between the 1st May 1858, and 30th April 1859, was as follows :

	Copies.	Impressions.
Maps and drawings...	48,319	46,624
Circular forms &c.	1,55,221	1,25,403
	2,03,540	1,72,027

Ordered that 200 copies of the report and statements, together with this review, be printed for distribution.

(Signed) T. PYCROFT,
Chief Secretary.

Pub. Works 1860 Deptt.
Pro. of Govt. 20: Jany.

No. 91

Pro. of the Madras
Government

Dated 12th January 1860.

From the Chief Engr. Dy.
23rd Feby. 1860. No. 498.

36

5- 25

From the Actg. Accountant General
10th October 60 No. 245 in Pro. 17th
Octr. No. 2156.

Reviewing the annual report on the operations of the Public Works Department for the Official year 1858-59.

No. 16 @ 18.

From
J. Dumphy
Superintendent and Manager
Government Lithor. Press
Central Office of P.W.

To
Lieutenant J. H. Bell
Chief Engineer Fort Saint George

Sir

I beg to submit, annexed, a Comparative Statement of work executed at the Government Lithographic Press of the Central Office of P.W. during the Official years 1857-58 and 1858-59.

I have this time shewn a classified valuation of the drawings, charging 35 Rupees per 100 for the large, and Rupees 15 per 100 for the smaller impressions in this branch of the work there is a small decrease, but in the Circulars, Forms &c there is an increase of 20843 impressions. The Memorandum at the foot of the Statement giving these and other particulars, exhibits a balance of Rupees 776-7 in favor of the Press, which though not so satisfactory as might be expected, will I trust, not only shew the value of the Press but also operate in my favor.

In the quality of the work also during the last year, there has been a marked improvement; especially in the impressions which have been taken from the Press, ready coloured. The specimens of the various branches of Lithography, which may be seen in the Department, will bear me out in this statement.

In again adverting to my present reduced salary, and to the sacrifice of my private Press by which I am, and have been for the last 2½ years, a considerable monthly loser and soliciting your favorable consideration and that of the Government thereto.

Govt. Litho: Press
Central Office of D.W.
Fort St. George
27th June 1859

I beg to remain
Sir
Your Most Obedient Servt.
(signed) J. Dumphy
Superintendent and Manager

Comparative.

	Maps No. Copies
Brought Over	381
ieutenant Taylors Cha for sale and Distribution	
ap to accompany the Fifty Budget of the Madras Presidency (sold also to the Public)	5
adras Observatory	"
nsulting Engineer for Railways	"
rincipal Civil Engineering College	"
hief Engineer Mysore	"
ibition of 1859	"
rector of Public Instruction	"
iscellaneous	"
Total	3
Average per Month	3

Memora

alue of Maps & other drawings 15995 large sized impressions at 35 Rupees per 100 i
30829 smaller sized impressions at 15 Rupees per 100
alue of Circulars & other forms 120403 Impressions at 7 Rupees per 100 impressions
alue of Colouring Work done in the Depart. 14,505 Copies, at an average of 1 anna

ost of Office Establishment for the Official Year 1858-59
Deduct Salaries of 3 Draftsmen exclusively employed in compiling District Maps; also the salaries of one Tracer and One Moochee
Add Contingent Expences incurred in working the Presses &c.
Balance in favor of the

Govern.t Litho: Press
Central Office of D.W.
Fort Saint George
20th June 1859

Compd. [illegible]

	1857-58			1858-59			
	Maps & other Drawings	Circulars Forms &c.		Maps & other Drawings		Circulars Forms &c.	
	No. of Impressions	No. of Copies	No. of Impressions	No. of Copies	No. of Impressions	No. of Copies	No. of Impressions
5	42338	170442	102200	33165	31220	139876	110009
300	300	"	"	1,300	1300	"	"
	2,500	"	"	"	"	"	"
	"	"	"	"	"	960	2,880
	"	"	"	50	100	"	"
	"	"	"	"	"	1250	139
	"	"	"	100	100	"	"
	"	"	"	10,082	10,082	"	"
	"	"	"	3,570	3,570	13,110	12,350
	"	"	"	50	50	25	25
28	27,438	1,70,442	1,02,200	48,319	46,424	1,55,221	1,25,403
59	3,953	14,222	8,683	4,027	3,887	12,937	10,250

Sum

pressions including cost of drawing } Rs 5528 - 4 - "
pressions ——— do ——— } -- 4624 - 5 - 7
including cost of writing ——— " -- 8428 - 3 - 4
phic fees copying ——— " -- 1,359 - 13 - 6 19940 - 10 - 5

——— Rupees 23,400
correcting and revising } -- 4986
——— 18414
——— Deduct Rupees ——— 750 - 3 - 5 ——— 19164 - 3 - 5
Department (by Circular and Printing branches. Rupees — 776 - 7 - 0

(Signed) J. Dunphy
Superintendent and Manager.

(True Copy)
Lt. Colonel
Chief Engineer

Copy in a letter. to C
d/ 10th February 1860 No 6.

1859 Depart

Appendix III

Enclosure in a letter from
the Chief Engineer

To

The Secretary to Government
P. W. D.

Dated 31st of August 1859

No ?

PWD 2305/59 No. 1436.

Comparative statement
of work executed at the Government
Lithographic Press of the Central
Office of P.W. during the Official
years 1857-58 and 1858-59 and
adverts to his present reduced
salary, and to the sacrifice of
his private Press by which he
has been a considerable loser.

Statement Shewing the Levelling, Surveying, and Mathematical Instruments and Drawing Materials &c. Issued to the different Districts &ca. from the 1st May 1858 to the 30th April 59 from the Chief Engineer's Stores

Names of Articles	Arcot North	Arcot South	Bellary	Canara	Chingleput	Coimbatore	Cuddapah	Ganjam	Godavery	Kistnah	Madras	Madura	Malabar	Nellore	Salem	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Total	Remarks
Apparatus for ascertaining velocity of Currents																													
Barometers Aneroid																2												2	
—— Mountain						2	3	2	2						4													13	
Boileau's Traverse Tables																												3	
Chains measuring with arrows																1												1	
Circumferentors with Stands			7		2	6		8											1		3						1	28	
Clinometers					4	4	2	3	2			2				4					1							22	
Color Boxes Complete 2nd size					4	1		2				1				1												9	
—— " —— Small		2	2		2		2		2		2					3						2	1	1	1			23	
Compasses Prismatic without Stands	2			3		12	10	10	20	12	8	4				6		2			80		20		1		1	131	
—— " —— with									2																			3	
—— Beam				2										2					1									6	
						1			2												1							—	
—— Comprehensive						2										3												5	
—— Proportional			2			2										2		5	1							1		13	
—— Brass fine points 4, 5 & 6											1					15		7										23	
Drawing Boards						2		1																				3	
Ebony rule brass edged 3 feet																2												2	
Eidographs Complete						1			1	1						1					1							5	
Folding rules 3 feet																6			1									7	
French Curves Sets								2								2												4	
Gregory Logarithms No.																1												1	
Levelling Instruments Y with stands				2		2	2		2	2		2	1	1		2			1				1					18	
—— " —— Dumpy								1	2	2						1										1		7	
Levels Pocket																1												1	
Mathematical Tables (Hutton's)							2									2												4	
—— Instt. Boxes brass Bound			2	3		2	2	2	3	2						4		4	1	1		1	1	1	1			30	
—— Cases fish skin	2		3	4		6	4	6	12	6	7	3				6		5			10						1	75	
—— —— 2nd Sort	4		3			6	10	8	12			3							1		40							87	
Parallel rulers of Sizes (Ebony)			9	7		26	10	8	24	18	7		1		1	19		3	3					2	2		1	141	
—— " —— (Brass)								3	3							3		1		1				1				12	
Perambulators				2						2				1	1	2												8	

Names of Articles	Arcot North	Arcot South	Bellary	Canara	Chingleput	Coimbatore	Cuddapah	Ganjam	Godavery	Kistnah	Madras	Madura	Malabar	Nellore	Salem	Trichinopoly	Vizagapatam	Central Office of P.W.	Garrison Engrs Office	Civil Architects Office	Civil Engineering College	Collector of Madras	Officers commanding Sappers & Miners	Executive Engr Bangalore	Commandt Engrs Office	John Maitland M.D.	Brinson Engr Supdt of Mofussil Police	Total	Remarks
Pentagraphs										1						1												3	
Plane Tables																1												1	
Plotting Scales Box Wood — Sets						8	4	4	8	8						6		2					12		1			53	
— „ — Sliding for offsets																1												1	
Pocket Sextants						1										1								1				3	
Protractors Ivory																5			1									6	
Protractors Brass Circular																1												1	
— „ — „ — Semicircular						3			1							2												5	
Quadrants Gunners				2		1	1											1										5	
Rain Guages	12				1			4			1		6	1			21									2		48	
Road Meters								1								1												2	
Scales Marquois — Sets			1			6		2								3		1			10							23	
Spare Drawing Pens						12		10	12	12						6		4					20	2				78	
Squares Optical						1		1								2												4	
— „ — T						2		1								1												4	
Sliding rules								1										1										2	
Staves Levelling						4	8					4	2						2									20	
Straight Edges Brass 3 feet								1	1							1						1						4	
Tapes Measuring			4			9	11	15	24	6		10	8		6	6		1	1			1						102	
Sand Glasses Minute																2												2	
Theodolites Complete 7 Inch								1								1					1							3	
Theodolites Complete 5 Inch						1	1		1	1		1										1	1					7	
Tracing Glasses																1												1	
Thermometers Maximum							1								2													3	
— „ — Minimum							1								2													3	
Tubes Glass with Mercury						2																						2	

Statement Shewing the Tools, Implements, Issued to the different Districts from the 1st May 1858 to the 30th April 1859.

Names of Articles	Arcot South	Bellary	Chingleput	Cuddapah	Godavery	Kistnah	Kurnool	Madras	Madura	Malabar	Nellore	Salem	Tanjore	Trichinopoly	Civil Architect	Division Engr.	Total	Remarks
Axes Pick Europe	100						500										600	
— Felling										24							24	
— Hand							50										50	
Anvils Iron Smiths		1					1										2	
Barrows Wheels with Iron Wheels					27	2				11				4			44	
Beams for Scales Iron Small to weigh 5 cwt.									1								1	
— " — Copper to weigh 14 lbs							1		1								2	
Bars Tamping Brass	4			12			10										26	
Beams for Scale Copper to weigh 56 lbs		1															1	
" — " — Iron to weigh 20 cwt			1														1	
Braces armourer with Bits																2	2	
Bellows Forge Europe															3	1	4	
Blocks Gin Iron with brass Sheave double		2															2	
Braces Carpenters with Bits								1						1			2	
Chains for Scales 8 per set to weigh 5 & 10 cwt.			1						1								2	
Crows Iron Common	100						30										130	
Chisels Cold													6				6	
Compasses Iron Carpenters large and small											9						9	
Chisels Carpenters Firmer											63						63	
— " — " — Socket											21						21	
— " — " — Mortice											11						11	
Dum Screws Carpenters		2															2	
Drivers Screw Carpenters														4			4	
Files of Sorts		6								2	156			12		48	224	
Gimblets Carpenters														12			12	
Hammers Small	100																100	
Hooks Bill Europe	60						50										110	
Hammers rivetting		1											2				3	
— " — Sledge		1					15									1	17	
— " — hand		1					10								4	2	17	
— " — claw							5										5	
Jumpers Iron Miners	10						20										30	
— " — Steel pointed				40													40	
Lathes 10" 12" bed with double Gear								1									1	
— " — Hand (6" 8 ft Bed)								1	1								2	

Names of Articles	Arct South	Bellary	Chingleput	Cuddapah	Godavery	Kistnah	Kurnool	Madras	Madura	Malabar	Nellore	Salem	Tanjore	Trichinopoly	Civil Architect	Garrison Engineer	Total	Remarks
Mamoties	300						500									2	802	
Needles priming		2					10										12	
— " — Tamping Copper										2							2	
Plates Screw with Taps large		1															1	
Planes of Sorts	4										24			6			34	
Stone Grinding Europe						3	1	1					1	1		2	9	
Scales Wooden Small to weigh 5 Cwt Pairs								1									1	
Scales Copper 14 lbs Pairs							1		1								2	
— " — Brass with Beam Stand and 10 brass weights to weigh letters																		
Saws Hand							2				6		1	4	2		15	
— " — Cross Cut		1					3						1	1			6	
Spoke Shave Carpenters Common		2															2	
Scales Copper 56 lbs Pairs		1															1	
Scoops Spoon Iron Miners 1" Bore							10										10	
Scales Wooden large to weigh 20 Cwt Pairs			1														1	
Saws Pit														3	4		7	
" — Whip								1									1	
Stone Oil Turkey											3			2			5	
Stocks with dies & Taps 9" & 6"											2						2	
Squares Carpenters with Steel blades 18"								1									1	
— Do — Do — 12"								1			3						4	
— Do — Do — 6"											6						6	
— Do — Do — 3"								1									1	
Stone Rag Blue											1						1	
Triangles for Scales Copper Small		1															1	
Tools Turners												1			2		3	
Tongs Smiths of Sorts																6	6	
Vices Iron Standing		1														2	3	
— " — " — hand Europe		2											1				3	
— " — Bench											3						3	
Weights Iron 56 lbs		1	40						10								51	
— " — " — 28-14-7-4-2-1-1/2-1/4 lbs		8	8						8								24	
— " — Braces — 4-2 & 1 lbs									3								3	
— " — " — 8-4-2-1/2-1/4-&1/8 Oz one of each									7								7	
— " — Brass - 14 & 7 lbs							2		2								4	
— " — " — 4-2 & 1 lbs							3										3	
— " — " — 8-4-2-1-1/2-1/4 Oz							6										6	
Wedges Steel		12					20										32	

Statement Shewing the Issues of Machinery to the different Districts from the 1st May 1858 to the 30th April 1859

Names of Articles	Arcot North	Arcot South	Bellary	Canara	Chingleput	Coimbatore	Gun Carriage	Ganjam	Godavery	Kistnah	Mint	Madura	Malabar	Nellore	Salem	Tanjore	Tinnevelly	Trichinopoly	Vizagapatam	Civil Architect	Garrison Engineer	Executive Engr. Bangalore	Total	Remarks
Apparatus Boring — Sets	4	"	"	1	"	2	"	"	"	"	"	"	1	"	"	"	1	2	"	"	"	"	11	
Blocks Iron Single	"	"	"	3	"	"	"	"	"	"	"	"	"	"	"	1	"	"	"	"	"	"	4	
" " Double	"	"	"	4	"	"	"	"	"	"	"	"	"	"	"	1	"	"	"	"	"	"	5	
" " Treble	"	"	"	6	"	"	"	"	"	"	"	"	"	"	"	"	"	1	"	"	"	"	7	
" " Snatch	"	1	"	6	"	"	"	"	2	"	"	"	2	2	2	3	"	2	2	"	2	"	24	
Circular Saw Tables	4	1	"	1	"	1	"	"	1	"	"	"	1	"	"	1	1	1	"	"	"	2	14	
Crabs Iron Single	1	1	"	1	"	"	"	"	"	"	"	"	1	"	"	"	"	"	"	"	"	"	4	
" " Double	"	1	"	1	"	"	"	"	"	"	"	"	1	"	"	1	"	"	"	"	"	2	6	
Cranes Transportable	3	"	"	1	"	2	"	1	"	"	"	"	1	"	"	1	2	1	"	"	"	"	12	
" Five (5) Ton	1	"	"	"	1	"	"	"	"	"	"	"	"	1	"	"	"	"	"	1	1	"	5	
Engine Steam Pile driving	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1	"	1	
" " Portable 4 Horse Power	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2	"	2	
" " " 6	"	"	"	"	"	"	"	"	"	1	"	"	"	"	"	1	"	"	"	"	2	"	4	
Jack Screws	"	"	"	2	"	"	"	1	"	"	"	1	"	"	"	1	"	1	"	"	"	"	6	
Machine Brickmaking	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2	"	"	"	"	"	1	"	3	
Mills Pug	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2	"	"	"	"	"	1	"	3	
Machines Punching and Shearing	1	"	"	1	"	"	"	1	"	"	"	"	"	"	1	"	"	1	"	"	"	"	5	
Plate Screw with Taps large	"	"	"	1	"	"	"	1	1	"	"	"	"	"	"	1	"	"	"	"	"	"	4	
" " with Taps small	"	"	"	1	"	"	"	"	"	"	"	"	1	1	"	1	"	1	"	"	"	"	5	
Rails Iron Bridge — feet	"	"	"	1000	"	"	"	"	6000	"	"	"	4000	"	"	4000	"	"	"	"	8780	"	23780	
Steam Dredging Vessels	"	"	"	"	1	"	"	"	1	2	"	"	"	"	"	1	"	"	"	"	"	"	5	
Tools Carpenters — Sets	"	"	"	1	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1	
Weighing Machine	1	"	"	1	"	"	"	1	1	1	"	"	"	"	"	1	"	"	"	"	"	"	6	
Pullies for Rams 12 Inch	"	"	"	"	"	"	"	"	"	"	"	"	2	"	"	"	"	"	"	"	"	"	2	
" " " 18 "	"	"	"	"	"	"	"	"	"	"	"	"	2	"	"	"	"	"	"	"	"	"	2	
Rams for Pile driving	"	"	"	"	"	"	"	"	"	"	"	"	2	"	"	"	"	"	"	"	"	"	2	
Monkies for Pile driving	"	"	"	"	"	"	"	"	"	"	"	"	3	"	"	"	"	"	"	"	"	"	3	
Crabs Single for Pile driving	"	"	"	"	"	"	"	"	"	"	"	"	1	"	"	"	"	"	"	"	"	"	1	
Set of Iron Work for Monkey Pile driving	"	"	"	"	"	"	"	"	"	"	"	"	1	"	"	"	"	"	"	"	"	"	1	

Fort Saint George
31st August 1859

A H Bell Lt Colonel
Chief Engineer

G. Sheary

Copy in to letter to E
d/10th February 1860 No 6

W. Y. Depart

Appendix II

Enclosure in a letter from
the Chief Engineer
To The Secretary to Govt
P. W. D.

Dated 31st
No. of August 1859

No 4436

PW 2395/59

Statements of the Issue
of Surveying and Mathematical Instruments, Tools
and Machinery &c to the
various Districts from
1st May 1858 to 31st July 59

Statement of Remunerative works for 1857/58.

Name of Work	Capital Outlay on Construction [illegible] Valuation Description	Amount up to the End of the past year	Amount for the Current year	Total	Revenue Charges Description	Amount up to End of the past year	Amount for the Current year	Total	Income Description	Amount up to End of the past year	Amount for the Current year	Total
		Rs	Rs	Rs		Rs	Rs	Rs		Rs	Rs	Rs
Godavery Anicut and its Subsidiary Works of the Rajahmundry portion	Outlay on original work and reconstruction	26,14,596	98,078	27,12,674	Interest on the Capital [illegible] per Cent	5,10,041	1,04,584	6,14,625	Gross proceeds from all sources	51,11,797	7,25,644	58,37,441
	Deduct deterioration by wear and tear per	.	.	.	Maintenance and repairs	9,48,132	2,56,024	12,04,156				
					Total	14,48,173	3,60,608	18,08,781				
	Balance of Capital	26,14,596	98,078	27,12,674	Balance [illegible]	.	.	.	Balance of Income	36,63,624	3,65,036	40,28,660
Godavery Anicut and its Subsidiary Works of the Masulipatam portion	Outlay on original work and reconstruction	5,04,929	63,510	5,68,439	Interest on the Capital [illegible]	44,317	20,197	64,514	Gross proceeds from all sources	1,57,054	48,679	2,05,733
	Deduct deterioration by wear and tear &c.	14,959	5,049	20,008	Maintenance and repairs	92,550	25,278	1,17,828				
					Total	1,36,857	45,475	1,82,332				
	Balance of Capital	4,89,970	58,461	5,48,431	Balance of Charges	..	..	.	Balance of Income	20,197	3,204	23,401

Name of Work	Capital Outlay on Construction/Dead Stock Valuation Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Revenue Charges Amount up to End of the past year	Amount for the Current year	Total	Income Description	Amount up to End of the past year	Amount for the Current year	Total	
		Rs	Rs	Rs		Rs	Rs	Rs		Rs	Rs	Rs	
Kistnah Anicut project.	Outlay on original works and reconstruction	1336,195	69,981	14,06,179	Interest on the Capital Rupees 1336,195 at 4 per Cent	119,698.	53,448	173,146	Gross proceeds from all sources.	209,115.	152,718	361,833	
	Deduct deterioration by Wear and tear &c	53,448	26,724	80,172	Maintenance and repairs	65,659.	30,611.	96,270					
					Total	1,85,357.	84,059.	2,79,416.					
	Balance of Capital	12,82,760	43,257	13,26,007	Balance of Charges				Balance of Income	23,758	68,659	82,417	
Pennair Anicut Works. in the District of Nellore	Outlay on original works and reconstruction	108,730.	19,404	128,134	Interest on the Capital Rupees 108,730 at 4 per Cent.	12,423.	4,349.	16,772.	Gross proceeds from all sources.	40,196.	1,175.	41,811	The deficiency in the Current year's Revenue arising by the Cyclone of November 1857 having breached most of the Tanks under the Anicut Channels.
	Deduct deterioration by Wear and tear &c	2,500	1,000	3,500	Maintenance and repairs.	7,420.	1,056.	8,476.					
					Total	19,848.	5,406	25,248					
	Balance of Capital	106,230	18,404	124,634	Balance of Charges		4230		Balance of Income	20853		16,618	

Name of Work	Capital					Revenue						
	Outlay on Construction of Dead stock Valuation					Charges			Income			
	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total
		Rs	Rs	Rs		Rs	Rs	Rs		Rs	Rs	Rs
Paular Anicut in the District of North Arcot.	Outlay on original works and reconstruction	4,51,128.	64,849	5,15,977	Interest on the Capital Rupees 4,51,128 at 4 per Cent.	20,125.	18,045	38,170	Gross proceeds from all sources	1,435.	1,532.	2,967.
	Deduct deterioration by Wear and tear	.	.		Maintenance and repairs	1,106.	497	1,603				
					Total	21,231.	18,542.	39,773				
						19,796.	17,010.	36,806	Balance of Income	.	.	.
	Balance of Capital.	4,51,128	64,849	5,15,977	Balance of Charges							
Penney Anicut in the Do	Outlay on Original works and reconstruction	46,509	972	47,481	Interest on the Capital Rupees 46,509 at 4 per Cent	1,860	1,860	3,720	Gross proceeds from all sources	5,329.		5,329
	Deduct deterioration by wear and tear &c				Maintenance and repairs	1,000.	750.	1,750.				
						2,860	2,610.	5,470.				
							2,610.	141.	Balance of Income	2,469		
	Balance of Capital	46,509	972.	47,481.	Balance of Charges							
Cheyar Anicut in the Do	Outlay on original works and reconstruction	10,916	1172	12,088	Interest on the Capital Rupees 10,916 at 4 per Cent.	436.	436	872.	Gross proceeds from all sources	7,896	.	7,896
	Deduct deterioration by wear and tear &c				Maintenance and repairs	828	414.	1242.				
						1,264	850	2,114				
						.	850	.	Balance of Income	1152.	.	5,782.
	Balance of Capital	10,916	1172.	12,088	Balance of Charges							

Name of Work	Capital				Revenue							
	Outlay on Construction of Dead Stock Valuation				Charges				Income			
	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total
		Rs	Rs	Rs		Rs	Rs	Rs		Rs	Rs	Rs
Lower Coleroon Annicut in the District of South Arcot	Outlay on original Works and reconstruction	129050	.	129,050	Interest on the Capital Rupees 129050 at 4 per Cent	98,078	5,162	103,240	Gross proceeds from all Sources	4,74,017	3,39,690	51,80,707
	Deduct deterioration by wear and tear &c	10,000	2,581	12,531	Maintenance and repairs	3,98,297	.	3,98,297				
					Total	4,96,375	5,162	5,01,537				
									Balance of Income	4,24,642	3,34,528	45,79,170
	Balance of Capital	119,050	2,581	116,469	Balance of Charges							
Vellaur Annicut in the Do	Outlay on original works and reconstruction	94,037	.	94,037	Interest on the Capital Rupees 94037 at 4 per Cent	30,092	3,761	33,853	Gross proceeds from all sources	6,08,432	65,859	6,74,291
	Deduct deterioration by wear and tear &c	10,000	1,881	11,881	Maintenance and repairs	99,169	564	99,733				
					Total	1,29,261	4,325	1,33,586				
									Balance of Income	4,79,171	61,534	5,40,705
	Balance of Capital	84,037	1881	82,156	Balance of Charges							

Name of Work	Capital				Revenue							
	Outlay on Construction / Dead Stock Valuation				Charges				Income			
	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Ragavien Channel in the District of South Arcot.	Outlay on original works and reconstruction	13,603		13,603	Interest on the Capital Rupees 13,603 at 4 per Cent	4,353	544	4,897	Gross proceeds from all sources	204,889	30,815	235,704
	Deduct deterioration by wear and tear &c.	5,000	580	5,550	Maintenance and repairs &c.	4,732	987	5,719				
					Total	9,085	1,531	10,616				
	Balance of Capital	8,603	580	8,023	Balance of Charges	.	.	.	Balance of Income	195,804	29,284	225,188
Tiruvady Annicut in the District of do.	Outlay on Original works and reconstruction	13,729	.	13,729	Interest on the Capital Rupees 13,729 at 4 per Cent	4,393	549	4,942	Gross proceeds from all sources	210,077	26,844	236,921
	Deduct deterioration by wear and tear &c.	2000	274	2274	Maintenance and repairs &c.	972	1165	2,137				
					Total	5,365	1,714	7,079				
	Balance of Capital	11,729	274	11,455	Balance of Charges	.	.	.	Balance of Income	204,712	25,130	229,842
Vieravandy Annicut in the Do.	Outlay on original works and reconstruction	15,016	.	15,016	Interest on the Capital Rupees 15,016 at 4 per Cent	992	601.	1598	Gross proceeds from all sources	.	2,587.	2,587.
	Deduct deterioration by wear and tear &c.	1,000	300	1,300	Maintenance and repairs.	.	413	413				
					Total	992	1,014	1996				
	Balance of Capital	14,016.	300	13,716	Balance of Charges	992	.	.	Balance of Income	.	1,583	591.

Name of Work	Capital				Revenue							
	Outlay on Construction / Dead Stock Valuation				Charges				Income			
	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total
Upper Coleroon Annicut in the District of Tanjore	Outlay on original Works and reconstruction	2,39,866		2,39,866	Interest on the Capital Rupees 2,39,866 at 4 per Cent.	1,53,536	9,595	1,63,131	Gross proceeds from all sources	8,76,151	1,11,378	9,87,529
	Deduct deterioration by wear and tear &c				Maintenance and repairs.	1,19,655	8,544	1,28,199				
						2,73,191	18,139	2,91,330				
	Balance of Capital	2,39,866		2,39,866	Balance of Charges				Balance of Income	6,02,960	15,93,239	6,96,199
Lower Coleroon Annicut in the District of Tanjore	Outlay on original Works and reconstruction	2,12,973	12,217	2,25,190	Interest on the Capital Rupees 2,12,973 at 4 per Cent.	46,674	8,519	55,193	Gross proceeds from all sources	2,71,341	19,511	2,90,852
	Deduct deterioration by wear and tear &c				Maintenance and repairs.	69,358	5,190	74,548				
						1,16,032	13,709	1,29,741				
	Balance of Capital	2,12,973	12,217	2,25,190	Balance of Charges				Balance of Income	1,55,309	5,802	1,61,111

Name of Works	Capital					Revenue						
	Outlay on Construction / Dead Stock Valuation					Charges			Income			
	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total
Varahalow Channel in the District of Trichinopoly	Outlay on original works and reconstruction	33076.	13807	46,883.	Interest on the Capital Rupees 33076 at 4 per Cent	2,523	1323	3,846	Gross proceeds from all sources	1,641	2,063	3,704
	Deduct deterioration by wear and tear	.	.		Maintenance and repairs	3,165.	154	3,319				
						5,688	1,477	7,165				
						4,047	.	3461.	Balance of Income		586	.
	Balance of Capital	33,076	13,807	46,883	Balance of Charges							
Chittanay Annicut across Vigay river in the Dist: of Madura.	Outlay on original works and reconstruction	15,995	.	15,995	Interest on the Capital Rupees 15,995. at 4 per Cent	14,312	640	14,952	Gross proceeds from all sources	105,457	4769	110,226
	Deduct deterioration by wear and tear &c.	.	.		Maintenance and repairs	17,170.	585	17,755.				
					Total	31,482	1,225	32,707				
									Balance of Income	72,975	3,544	77,519
	Balance of Capital	15,995	.	15,995.	Balance of Charges							

	Capital					Revenue						
	Outlay on Construction / Dead Stock Valuation					Charges			Income			
Name of Work	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Coneyempolliem Anicut in the District of Coimbatore	Outlay on original works and reconstruction	42,970	.	42,970	Interest on the Capital Rupees 42,970 at 4 per Cent	49,845	1,719	51,564	Gross proceeds from all sources	29,536	685.	30,221
	Deduct deterioration by wear and tear &c.	.	.		Maintenance and Repairs	9,829.	46	9,875				
					Total	59,674	1,765	61,439.				
"	Balance of Capital	42,970	.	42,970	Balance of Charges	31,138	1,080	31,218	Balance of Income	.	.	"
Coompta and Dharwar line Via Devimunny and Arbyle Ghaut in the District of Canara	Outlay on original works and reconstruction	234,081	.	234,081	Interest on the Capital Rupees 234,081. at 4 per Cent	9,363	9,363	18,726	Gross proceeds from all sources	11,427	3,715	15,142
	Deduct deterioration by wear and tear.	.	.	..	Maintenance and repairs	59,762	52,224	111,986				
					Total	69,125	61,587	130,712				
	Balance of Capital	2,34,081	.	2,34,081	Balance of Charges	57.698	57.872	115,570	Balance of Income	.	.	.

	Capital				Revenue							
	Outlay on Construction / Dead Stock Valuation				Charges.				Income			
Name of Work	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total	Description	Amount up to the End of the past year	Amount for the Current year	Total.
		Rs	Rs	Rs		Rs	Rs	Rs		Rs	Rs	Rs
Chowghaut Yennamakul Dam in the District of Malabar.	Outlay on original work and reconstruction	30,880	.	30,880	Interest on the Capital Rupees 30,880. at 4 per Cent	16,058.	1,235.	17,293	Gross Proceeds from all sources	28,469.	1,899.	30,368.
	Deduct deterioration by wear and tear &c	1544	618	2162	Maintenance and repairs	14,373.	411	14,784				
						30,431.	1,646	32,077				
	Balance of Capital	29,336	618	28,718	Balance of Charge	1,962	"	1,709	Balance of Income	"	253.	

Fort St. George
31st August 1859

Bell Lieut Colonel
Chief Engineer.

Lt Gray

Copy in a Letter to C.
d/10th February /60 No 6.

1859 Report

Appendix

Enclosure in a letter from
the Chief Engineer
to The Secretary to Govt
P.W.D.

Dated 31st
the August 1859

No 4436

CO 2305/59

Statement of [illegible]
Works for 1858-59

Central Office of Public Works
Fort Saint George, 31st August 1859.

No 4436

Public

From
The Chief Engineer
To
The Secretary to Government,
Public Works Department.

Sir,

I have the honor to submit for the information of Government The Annual Report on the operations of the Department of Public Works for the Official Year 1858-59.

Ex. Mins. Cons. No 1372. 17th July 1857.

2. The restriction upon Public Expenditure imposed in the year preceding was pretty fully maintained during that now under review, and consequently operations in New Works have generally been of a limited nature. At the same time however in those Districts, over which the Monsoon burst in great fury and made sad havoc of all Irrigation Works and lines of Communications within its influence, Repairs to a very large extent have been executed.

3. Under the Budget of 1858-59,

(Application was made for the expenditure of Rupees 71,77,575 including outlay at Hyderabad (since disconnected from this Presidency) under the following Heads.

Ex: Mins: Cons: No 208.
21st January 1859.

On New Works as per Statement No 1. Rupees 8,92,820
— Do ——— No 2. — 41.66.494.
— Repairs ——— 21.18.261.

exclusive of the Annual grant of Four lacs to cover emergent works and supplemental estimates.

4. This sum was sanctioned by the Madras Government under the following conditions vizt that the Projects included in Statement No 1 should not be begun until the sanction of the Supreme Government had been obtained to them, and permission to commence operations given by the Local Government,— that, of those undertakings entered in Statement No 2, none should be proceeded with except the Military Buildings specially ordered,— emergent works sanctioned, or those to be executed out of the one lac Fund, and others already, or that might thereafter be, exempted from restriction,— while all Repairs, except on Irrigation Works, should be limited as strictly as possible till further orders.

Ex: Mins: Cons: No 93
13th January 1858.

5. The Government of India however, in consideration of the Financial difficulties of the Country declined to affirm the resolution of the Local Government, and authorized an outlay upon New Works throughout this Presidency including Hyderabad of Rupees 14,59,256.— Adding to this, the sum entered in the Budget for Repairs Rupees 21,18,261 and what has been subsequently sanctioned Rupees 10,13,714 a Total of Rupees 45,91,231, available for expenditure in the year under review is obtained. As Hyderabad however has been disconnected from Madras, and none of the outlay there is entered in the subsequent Statements, the grants therefore, aggregating Rupees 1,35,413, fall to be deducted leaving a sum of Rupees 44,55,818. vizt Rupees 13,28,343 for New Works and Rupees 31,27,475 for Repairs.

Despatch No 4606
of date 23d Septr 1858—
Communicated in E. M. C.
Nos 2214 & 2594. dated 21st
Octr & 2nd Decr 1858—
and Despatches No 4645.
" 4765—
Communicated in E. M. C.
Nos 2135 & 2274 dated
12th & 28th October 1858—

14,59,256.
21,18,261.
10,13,714
45,91,231.

New Works Rs 1,30,913
Repairs " 4,500
Rs 1,35,413

45,91,231
1,35,413
44,55,818.

6. The entire expenditure, exclusive of Hyderabad, has been Rupees 45,08,433, thus exceeding the above sum by Rupees 52,615. In New Works the expenditure went beyond the allowance to the extent of Rupees 1,87,668, while in Repairs the outlay fell short

Rs 45,08,433
44,55,818.
52,615

short of the sum applicable thereto by Rupees 1,35,053.

7. The excess in New Works can be accounted for by the considerable number of Projects from which Restriction was removed in the course of the year, and by emergent works executed out of the Four lac Fund. The authorized amount for Repairs not having been fully expended by the close of the year is attributable to the large additional sanctions, amounting to fully 5 lacs, passed during the last quarter for the restoration of works, in the Southern Districts, damaged by the heavy floods.

8. Into the particulars of the outlay, I shall now enter as briefly as the subject warrants, referring to the Tabular Statements of the two Branches of Expenditure which will be found on succeeding pages for the separate Items upon which money has been spent, and to remarks under each District for full particulars of the works in progress during the past year.

9. The Total of each Branch of the Two Grand Divisions-

New

New Works and Repairs, is shewn to be as follows

I New Works

Irrigation Works —— Rupees	272,422.
Communications ——	349,944
Buildings ——	893,645
Total Rupees	15,16,011.

II Repairs.

Irrigation Works —— Rupees	19,22,764
Communications ——	7,97,735
Buildings ——	2,71,923
Total Rupees	2992422.

45,08,433	58-59
40,87,025	57-58
Rs 4,21,408	

10. The Expenditure of 1858-59 will be found upon comparison to have exceeded that of 1857-58 by Rupees 4,21,408, but the sums laid out on New Works and Repairs do not bear the same proportion as they did in the preceding year, when they were within Rupees 59,000 of each other. On the contrary in the one now under review the outlay upon Repairs is as shewn above in the proportion nearly of 2 to 1 of that upon New Works, that is, about 2/3rds of the entire expenditure last year were upon repairs.

11. In Irrigation Works the same Districts as in the previous year absorbed.

absorbed the principal share of outlay under this head, and are.

	New Works	Repairs
Ganjam	17,683	21,376
Godavery	49,379	270,938
Kistnah	53,545	104,481.
Nellore	56,344	237,913.
Cuddapah	16,807	79,066
Bellary	4,051	152,899
Chingleput	48.	97,409
North Arcot	26,343	38,711
South Arcot	7,190	80,426
Tanjore	5,607	456,698.
Trichinopoly	24,731	169,145
Madura	"	41,336
Tinnevelly	904.	51,454
Coimbatore	4,345	31,168
Salem.	2,783	55,005

12. Conspicuous among a number of very large sums stands the Item (of upwards of 4½ lacs) against Tanjore for Repairs. The circumstances which led to this are fully detailed in the remarks under that District and I shall only add that that amount is far in exceſs of what was expended in the Godavery Division last year when the repairs of its Annicut proved an important and costly Item.

13. Under the Head of Communications are included the following works.

	New Works	Repairs
Roads and Bridges	3,28,243	7,60,462.
Navigable Canals	7,813	28,057
Ports and Harbours	18,888	4,857
Ferry Boats	"	4359.
	Rupees 349,944.	Rupees 797,735.

and the Districts in which the Major part of these sums has been expended are with reference.

1. to Roads and Bridges.

	New Works	Repairs.
Ganjam	25,881	24,971
Nellore	19,040	35,127
Cuddapah	11,352	36,909
Bellary	1,217	53,985
Chingleput	26,262	108,995
North Arcot	47,472	57,569
South Arcot	3,534	61,849
Tanjore	4,971	44,598
Trichinopoly	6,788	53,684
Coimbatore	10,528	38,116
Salem	11,530	33,602
Canara	15,824	57,406
Malabar	53,170	31,446

2. to Navigable Canals.

	New Works	Repairs.
Godavery	6,313	8,741.
Chingleput	"	11,953.
Tanjore	"	5,344.

3. to Ports and Harbours.

Tanjore	4790	2,458
Madura	12,797	

In the latter of these is the celebrated Paumben Passage, which has attracted so much public attention. The operations upon it during last year will be found noticed under the Head of Madura.

14. The following are the various classes of Buildings with the amounts laid out upon them.

	New Works	Repairs.
Military	6,73935	1,12,661
Revenue	33,481	66,546
Public	72,772	60,074
Judicial	85,074	25,117
Ecclesiastical	6,473	6,537
Marine	19,800	575
Educational	2,110	2,413.

15. Barracks and other structures for the accommodation of Troops again constituted in the past year the principal works under this Head, and of course the magnificent edifice at Jackatalla, or rather series of erections composing it, is far above all other works as regards the sum laid out upon it. But as there have been large amounts expended in other Districts, it is as well that these should be brought prominently forward and they are accordingly here enumerated.

	New Works	Repairs
Bellary	42,909	8,410
Chingleput (the works at St. Thomas's Mount)	39,092	6,953
Trichinopoly	34,217	4,191
Garrison Engineer (Fortification of Fort St. George and other works)	72,175	53,007
Bangalore	1,00,163	14,433
Jackatalla	3,05,118	469.

16. Of the other Classes under this Head it is sufficient to say that in the Revenue and Public Buildings, the Civil Architect and Garrison Engineer's operations are of the largest amount,—while in the Judicial, the Salem Jail brings that District nearly equal to the Civil Architect's charge in point of outlay, these two

occupying the first place in this particular Item of last year's Expenditure.

17. The Traffic upon the various Navigable Canals of this Presidency, and through the Paumben Paſsage is the next point for consideration. The Navigable Canals or Systems of Canals are three in number viz: Those in the Godavery and Kistnah Divisions, and the Eastern Coast Canal.

18. The Traffic upon the first of these is ascertained at the Head Locks of the 3 Main Canals forming the one grand System. The full Returns from these as required by Government will be found in the General Remarks upon the Godavery Division, but it may be here stated that the results of the past year on the whole are most satisfactory. For, while in the Value of Goods conveyed on the Central Main Canal there was a Decrease of Rupees 43,485, in that upon the Eastern and Western Main Canals the Increase aggregated Rupees 9,66,406.

19. In the Kistnah Canals the return of the Value of Goods, paſsing the Bezwada and Seetanagrum Locks, also

also exhibits an Increase of Rupees 20,155. The Statement of this Traffic is shewn in the remarks upon that District.

6 Tables entered A. to F. and a General Statement prepared in this Office.

20. The Eastern Coast Canal Traffic, the various Tables of which as per margin, are embodied in the remarks upon Chingleput, exhibits a diminution in the number of Boats plying upon it during the past year, but a small increase in the Tonnage of Craft and in the Toll Dues collected, as the subjoined figures shew.

	Boats	Tons	Toll
1857-58.	9324	1,29,643	32,410-12.
1858-59.	9,111	1,30,236½	32,559-2.
	Decrease-213.	Increase-593½.	Increase-148-6.

21. The failure of the Traffic in Salt during part of last year, as mentioned afterwards, was most unfortunate, for had it been kept up throughout at a corresponding rate to what it was in the early months a large Increase in all points would have been the result.

22. The Report from the Paumben Channel for last year is not

so favorable as that of its predecessor, there being a decrease in the Tonnage of Veſsels paſsing through it to the extent of 49,571 tons. This arose from the disasters that occurred during the gales in May and November 1858, and to there being no Cargo procurable at the Ports of Tanjore from the failure of the Rice Crops. In consequence of the decrease in Shipping, the Revenue derived from Pilotage &ca has fallen off and was last year Rupees 2,661 beneath the amount of 1857-58.

A Statement of the Shipping which paſsed through the Strait in the course of 1858-59, with the Dues collected, forms part

part of the Report upon Madura.

23. Before entering upon the Administration Details of each District the following Tabular Statements of the expenditure upon New Works and Repairs under the various heads, will shew at a glance the amount of outlay on each individually, and also the sums expended in the respective Districts.

I

I

Expenditure on New Works during the year 1858/59.

		Communications				Buildings.							
	Irrigation Works	Roads and Bridges	Navigable Canals	Ports and Harbours	Ferry Boats	Military	Revenue	Police	Judicial	Ecclesiastical	Marine	Educational	Total.
Ganjam	17,683	25,881	.	221	.	627	1,090	5,397	3,704	1,535	4,833	"	60,971.
Vizagapatam	"	.	"	"	.	9,169	.	.	.	60	1,181	"	10,410
Godavery Division	49,379	.	6,313	130	.	44,245	6,247	7	32	744	774	.	107,871
Kistnah Do.	53,545	15,110	.	.	.	4,304	1,403	4,004	2,196	545	591	.	81,698
Nellore	56,344	19,040	.	.	.	457	.	1,136	115	.	"	.	77,092
Cuddapah	16,807	11,352	.	.	.	191	423	303	334	.	"	.	29,410
Bellary	4,051	1,217	.	.	.	42,909	3,198	1,555	218	.	"	.	53,148
Kurnool	"	20,882	.	.	.	7,255	120	402	.	"	"	.	28,659
Chingleput	48	26,262	.	.	.	39,092	906	5,551	.	1,512	"	"	73,371.
North Arcot	26,343	47,742	"	.	.	2,307	30	181	"	"	"	"	76,603
South Arcot	7,190	3,534	.	"	.	126	.	1,463	1,108	"	2649	"	16,070.
Tanjore	5,607	4,971	.	"	"	"	.	250	1,926	"	"	"	17,544.
Trichinopoly	24,731	6,788	.	4790	"	34,217	28	181	.	"	"	"	65,945
Madura	.	21,792	.	12,797	.	.	1,495	90	363	"	"	"	36,537
Tinnevelly	904	6,621	.	"	"	"	1,446	1,235	118	.	"	.	10,324
Coimbatore	4,345	10,523	.	"	.	400	34	3,005	214	788	"	41	19,350
Salem	2,783	11,530	.	"	"	2,435	10	985	36,891	"	"	1,780	56,415
Canara	.	15,824	.	630	"	1,925	7,500	.	"	"	"	"	25,879
Malabar	"	53,170	.	.	.	6,783	462	839	2,536	174	832	.	64,796
Madras { Civil Architect.	2,662	20,564	.	.	.	36	2,094	34,381	35,319	901	.	289	96,246
Madras { Garrison Engineer.	.	138	1,500	320	.	72,175	6,995	11,807	"	"	8,940	.	101,875
Bangalore	.	302	.	"	.	100,163	.	.	"	214	.	.	100,679
Jackatalla	"	"	"	..	.	305,118	"	.	.	..	"	.	305,118.
	272,422	323,243	7,813	18,888	"	673,935	33,481	72,772	85,074	6,473	19,800	2,110	1,516,011

Ganjam.— 24 The expenditure in Ganjam during 1858/59 has been Rupees 112,855 (against Rupees 99,092 of 1857/58) & is divided into

	New Works	Repairs
Irrigation Works	17,683	21,376
Communications	26,102	24,971
Buildings	17,186	5,537
	Rs 60,971	Rs 51,884

25 Several important new undertakings, from which the restrictions were withdrawn, or, as constituting "State" works freed by the sanction of the Supreme Government, were executed in this District in the course of the past year, and have been beneficial to it in a very considerable degree.— These accordingly will be noticed in the first place, and are as follow.—

26 The Aska and Russelcondah Road being 25 miles of the line from Berhampore to the latter place.— The Road between Berhampore and Aska had been completed with Bridges &ca before the close of 1857-58, but as Government coincided with the Commander in Chief in the

desirability of the frontier Station of Russel-Condah being connected with Berhampore and the Coast, a supplemental grant of Rupees 4,000 was sanctioned in April 1858 in order that this line might be fitted for the easy passage of Troops.— Before August 1858 / no fewer than between 80 and 90 Bridges having by that time been built / this new Road was opened, and attracted immediately a cart traffic, which soon became so enormous and valuable that, in January 1859, Government exempted from restriction the Balance of the estimate, in order that those parts out of repair might be metalled, and a 5 arch. Bridge constructed over the deep and rapid Loharatundee close to Russelcondah. The progress of these had been so favorable, that it was hoped the Road and Bridge would be finally opened for traffic in June. The sum expended amounted to Rupees 15,638.

27 The Road outside Town of Berhampore.— This work was freed from restriction in November 1858, and Rupees 3,628 were spent upon it last year.— It is a broad

broad Road 2 miles long, and was nearly completed at the close of the past year, the earth work being finished and the Tunnels built. It has already been found very useful in fulfilling the object for which it was designed, Vizt obviating the necessity for the heavy traffic upon this line to pass through the narrow crowded Streets of Berhampore.—

28. The Road from Nursannapettah to Calingapatam.— Rupees 4000 sanctioned in modification of the restrictions, Rupees 3,200 were laid out upon the improvement of this line which will be passable for carts before the Rains. The worst parts have been metalled and 39 tunnels built. In April 1859 the traffic averaged 317 bandies a day. This is the course taken in carrying the produce of the Kimedy Zemindary to the Coast, and formerly, as the country was impassable for carts, Coolies carried the grain &ca to the Port.—

29 The Road from Russelcondah via Sunharatole to Sonepore.— In August

1858.

1856 Government granted Rupees 9,635 for the examination trace and survey of this line, and after a personal inspection of the country in December and January last, the District Engineer and Captain Phillips decided upon the line by the Doorgapersad, Gongoir, Dorba, and Kalinghia ghats which has been traced throughout. It is now being cleared and widened; the soil has been found upon the whole to be favorable and the gradients easy, there are however some rocky parts in blasting which the assistance of Sappers will be required. The trace will not only prove valuable in future operations, but also as an important means of Communication for travellers, Brinjarries &c. who are now already availing themselves of it. Between January and April last 10 miles of Jungle and 2 miles of Ghaut had been rendered passable at a Cost for clearing and levelling of Rupees 130 per mile. As a large trade in Turmeric, Salt and Oil Seeds would pass along the line, it would be most advantageous to have a main road through the Khond

tracts

tracts to Sonepore, Sambhulpore and the Nagpore Territory. Were this constructed, with a few Choultries and wells upon it, and branch roads to principal villages, the Country would simultaneously be opened up to the Officers of Government, and enable them the better to exercise their authority for the suppression of the barbarous and revolting rites practised in the Hill Tracts of Orissa. At the same time, however, unless the road be continued in Bengal to Sonepore via Bispurriah, the full benefits of the line will not be obtained. The cost has not yet been finally computed, but Captain Harington estimates it at about Rupees 50,000 for the 40 miles to Sunnakarakul the limits of the Madras Presidency. A detailed Survey and Estimate will however be prepared for insertion in the next Budget. At Mojagodo, 8 miles from Russelcondah, on this Road a Choultry for native Travellers with a good well 24 feet deep attached has been built in the course of last year under Sub Overseer P. Bascarno.-

30 In Irrigation the Principal works have been

1 The Excavation of a new Head and the Construction of a Head Sluice to the Poorshotapoor Channel a cost together of Rupees 5690. The former of these was sanctioned in September 1858, and completed on 25th February last. The restriction on the latter was removed in November 1858, and it was finished on 7th March 1859. An Area of 1622 acres, paying a rent of Rupees 7,637, will be benefitted by this work

2. The embankment of the Mahanuddy River. 12 miles have been completed at Aska, and protection afforded to many detached pieces of land liable to be injured by floods. The expenditure during last year has been Rupees 7271.- The other operations under this head have consisted of the repair of 204 Tanks and Channels, and the construction of 24 Calingulahs and Sluices.-

31.

31 The Ports of Ganjam, Munsoorcottah, Sonapoor, Poondy and Calingapatam have each been furnished with a flag staff from 80 to 100 feet high with complete sets of Flags. Two Anchor Buoy moorings, promised by the Right Honorable the Secretary of State for India, will be fixed in the Munsoorcottah Road Stead when received

32 The Buildings, which have been in progress since February last, consist of the Choultry before mentioned. the Police Ameen's Cutcherry at Berhampore, the Moonsiff's Court Houses at that place and Palasa (decided improvements upon the present places of business, wretched native houses) and the Civil Dispensary at Berhampore - on this very important Building Rupees 2121 were expended and 15,000 Cubic feet of masonry were built.- Seven Wells have been constructed, 5 on the Northern Trunk Road, 1 at Gungapore on the Aska and Russelcondah Road, and 1 at Mojogodo as above stated.

33.

33 The communications of the District are almost entirely confined to Roads and Irrigation works. The former are very deficient both in number and state of repair. Lines leading to the principal ports of Bim-[illegible] and Calingapatam (to which may be added Sonapore, Barwa and Poondy) and to the Salt Pans of Ganjam Nowpada and Omravelly, are the most urgently required and will, when constructed, not only be of benefit to the people, but, remunerative to Government by providing means for the easy transport of grain and salt, the trade in which yields a direct profitable return, and will increase with extended facilities for traffic. There is no line of road from the Ganjam Salt Pans to the interior, though there are roads to both the North and South. The Pans at Now-pada are during the rains totally cut off from all intercourse; and those of Omravelly should be placed in direct

Communication

Communication with the port of Calingapatam. The sales of Salt have doubled within the last 5 years, and as the difference between the cost of its manufacture and the selling price ranges from Rupees 114 to 116 per garce, it is plain that the more approaches there are to those works, the better.-

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These lines have I observe been lately sanctioned.-

34 With regard to the condition of existing roads, the Northern Trunk Road from Chicacole to Itchapore is in such a wretched state as to be impassable - even for foot passengers at times - during the rains. The traffic upon this portion of the line, judging from what it is on that part which is in good order, would be enormous were it maintained in good repair.-

35. The Irrigation works; which have had little or no attention paid to them lately, owing to want of Funds, demand also a large amount of expenditure for repairs.-

36.

36 The expenditure of 1858-59 in this District amounts to Rupees 38,821, while that of the previous year was Rupees 35,545. But as will be observed from the Analysis it was confined chiefly to repairs and these were not more than sufficient to preserve the Structures though in excess of the previous year by nearly Rupees 11,000. The Items of outlay are

Vizagapatam

	New Works	Repairs
Irrigation works		11,460
Communications		6,722
Buildings	10,410	10,281
	Rup.s 10,410	Rup.s 28,411

37. The important new works, commenced prior to the year under review came almost entirely under the restrictive orders. Military Buildings being the only exception of any consequence, and upon these the sum of only Rupees 9,169 was expended.

38 The principal operations were 1.st the alterations and additions to the Hospital at Vizianagrum, which at the close of the Official year was nearly ready for tiling. 2.d The Seebundy Barracks and Hospital at Nursipatam. These have cost a much larger sum than was anticipated owing to the great rise in the price of labor and materials added to the difficulty experienced in finding workmen, both skilled and coolies, the former of whom had to be brought from a great distance and paid high wages.

39 The limited nature of the repairs has been stated above, and before entering upon the requirements of the District, it may be well to mention shortly what has been done by private Funds. The instances specially noticed by the District Engineer are the partial construction of a road from near the Gumberum Bridge to Bimlipatam and the repair of the line from Vizagapatam to Vamoolavulsa.

40. The requirements of Vizagapatam are principally roads, regarding

the paucity and unsatisfactory condition of which the District Engineer comments at considerable length. Upon its land-communications, Vizagapatam is wholly dependent, and were it not for the favorable nature of its soil, traffic would be at a complete stand-still, as the want of roads, or the bad state in which existing lines are, would oppose insuperable barriers to all intercourse –

41 The District Engineer enumerates those roads which he considers of most consequence, and of which the following are a few, viz., that from Vizianagrum to Bimlipatam, a portion of which is in very bad order, and toward the repairs of which, estimated at Rupees 6030, the Rajah of Vizianagrum has guaranteed Rupees 2000 – the road from Sagaram to Agnumpoody 8 miles, which, if completed, and a Bridge thrown over the Ferry at Vizagapatam, would render the District tolerably independent of the Trunk Road

Road to complete which nearly Rupees 40,000 would be required – another line recommended by Lieutenant Vertue is already stated to have been partially constructed from private funds, viz., from near the Gumbeeram Bridge to Bimlipatam, by which the great traffic between the latter place and Vizagapatam would be saved 6 miles. The circumstance, that it was merchants of Bimlipatam who subscribed upwards of Rupees 1000, by which the District Engineer had a road roughly made shews, how much they are in favor of the project –

42 In Irrigation works also, very important undertakings have not been commenced owing to the restrictions, which would if constructed be of immediate benefit to Government and the people. Three of these are – The Gullada Anicut – The project for throwing an additional 6 feet of water into the Kondakerla Ava – and the cultivation of the waste area of 3 to 4 square miles between Wattada and Pentacollah

43 [illegible] circumstances during last year connected however with the [illegible] conduct of the Public Works, [illegible] District generally, and most probably on the future operations, is alluded to by Lieutenant [illegible], and may also be mentioned here that the visit of the Collector of Vizagapatam to the Jeypore country has, in the opinion of the District Engineer who accompanied the Collector, set at rest question as to the best route to Jeypore, and dispelled the common idea that the climate is fatal to Europeans and the country impracticable on account of the unfriendly disposition of the Hill Tribes. The route chosen in this expedition was via Parvatipore, which has been found much superior in many respects to the one via Madugole.– A full report of the route and journey, however, has already been laid before Government, so that no further notice of the subject need be taken here.– 27

44 Drought to an extraordinary degree prevailed in this District last year – Scarcely 15 inches of rain having fallen. The prices of labor, Building materials, and Articles of Consumption have risen very much, and a further increase in the latter is most probable, especially should a much larger number of European Troops be stationed in the District.

Godavery Dt.

45 In this District during the Official year 1858/59, the expenditure has amounted to Rupees 4,12,529 (without deducting refunds) Vizt. on new Works Rupees 107,871. and on Repairs Rupees 304,658 – while in the preceding year, Rupees 537,167 were expended.– The difference is almost entirely under the head of new works, and may be accounted for by only 3 Items in this class being excluded from the restrictive orders.– These were: 1st The Barracks at Dowlaishweram for the Sappers and Miners.– 2nd The Custom House at Cocanada – and 3rd the Irrigation & Navigation Canal from Vyairo to Ellore.– A few remarks on each of these will be made before the general details of the District are entered upon.–

46

46 The Barracks were inspected by the Commander in Chief in the course of his tour, and are fully occupied by the Sappers and Miners, having been handed over to their Commanding Officer. The expenditure upon these Buildings in 1858/59 was Rupees 41,740. All the Bricks used in their Construction were made with Ransom's patent machine, two of which, turning out 10,000 a day each, were at work for 4 months. The Cost of the Bricks was 9 annas per mille, about the same as those of native make, but decidedly superior in quality.—

47 The Custom House at Coconada, it was hoped, would have been completed by the close of the Official year, but in consequence of the Brick Contractors having failed, both as regards the time of delivery and the quality of the material, these anticipations were not realized, it was expected however that the

the end of July would see it finished.—

48 In Irrigation, the only new work allowed to be prosecuted was as above stated the Canal of Irrigation and navigation from [illegible] to Ellore. Rupees 22,109, were during the past year expended in excavating to a width of 15 yards the 11 miles of the Canal, which had previously been done only to a partial extent, and in completing it so that water might be brought down to Condavoir, where the High Level Canal from Bezwada joins it.— The Ellore Canal was the reservoir, from which 30,000 acres were last year supplied with water & 14,000 of these were not originally intended to be irrigated from this source. But on account of the scarcity of rain, 30 inches only having fallen during the year, the tanks on which they depended could not furnish water sufficient for even the 1st crop

which [illegible] of the [illegible] [illegible] supplied [illegible] their 2nd crop [illegible] and for the [illegible]

49. [illegible] the supplies [illegible] attention [illegible] The works are in a satisfactory state.

50. The amount [illegible] repairs where [illegible] was required [illegible] has been 1,45[illegible] cubic yards [illegible] the weakest point, it has also been [illegible] to 30 yards.

51. The River [illegible] in the past year was for the first time used as a line of communication with the interior and the only channel that could be got

has

has been kept constantly plying upon it since last July, in conveying salt, Telegraph wire &c to inland stations, and in bringing to the coast firewood, and produce. The Lock at the First Barrier has been nearly finished, and although there has been less water in the River than for many years past, boats drawing 2 feet have been able to pass over the Shoals. This year it is expected that a still greater depth of water will be available.

52. As the Harbour Dredges have arrived, the Coringa River will it is hoped be improved, and the depth of the River at Cocanada increased, so that small craft may unload inside the Bar which is in a satisfactory state.

53. On river embankments and their protective works Rupees 10,143 were laid out. The operations consisting in 31,454 Cubic

yards

[illegible]

54.

[illegible]

and expected. During the ear[illegible]

part of the year [illegible]

the [illegible]

shop was not fully employed,

[illegible] in the last [illegible] months there was

large demand for work, [illegible]

[illegible]

[illegible]

[illegible] and the arrival of

[illegible] machinery from England

[illegible]ing an additional number of

[illegible]cations. In the Foundry 126 [illegible]

castings have been turned out.

55 The year under review has been a most prosperous one throughout this District; for, although the rain-fall, as noticed above, was very deficient; the anicut with its attendant works, rendering the country in a measure independent of local rain, was the means of preserving the crops, and along with the Navigation Canals of the Division proved the source of its wealth and prosperity. Never before have the utility and value of these magnificent works been so fully and satisfactorily displayed as on this occasion. The crops in Tanjore having totally failed, and a dearth occurring in the Southern Markets from the general scarcity of rain throughout the Peninsula, the Delta of the Godavery, where the crops, watered by artificial means, had been secured, became the emporium from which the wants of the country was satisfied, each village of the District contributed its quota till no less a quantity than 2400,000 Bengal Maunds of grain of various kinds had been meted out between July and December 1858 to answer the demands. This timely and most urgently

required supply would however have been of little avail, had the means of conveying it without delay to the coast not been at hand, and it was in this service that the benefit of the canals was so apparent. For, when the demand was first made, land transport could not have been used, and besides even though the country had been in a fit state for it, the enormous quantity mentioned could not have been conveyed the required distance in the short space of 6 Months. In affording therefore a "silent highway" for the transit of that amount of food to a distance of 50 Miles, the canals alone were in the District Engineer's opinion the means of effecting a saving to the Population in the single Item of transport of Rupees 10,30,000, which was, consequently so much money gained. Over and above this must be reckoned the net sum realized from the Crops, before the full benefit derived from the Irrigation and Navigation works of the District, can be seen, and Captain Rundall estimates that the ryots' profits amounted last year to

Rupees

Rupees 24 per acre.

56 The great inducement accordingly held out to agricultural pursuits operated injuriously on the Public Works, for an increase of 50 per cent to wages was not a sufficiently tempting bait to enable the District Engineer to obtain the amount of labor he required.

57 The export and Import returns from Rajahmundry as well as the traffic on the main lines of navigation will now be considered, as shewing from another point of view the prosperous condition of the Division

58 Firstly The value of Exports from Rajahmundry in 1858,59 amounted to no less than Rupees 40,32,359, which is more than 11 Lacs in advance of the proceeding year (Rupees 29,30,007, and more than double that of 1856.57. The articles on which the increase principally occurred were Rice, Paddy, Bengal Gram, and Pulses.

59 Secondly. The Imports into Rajahmundry last year were of the value of Rupees 7,71,420 besides Rupees 9,81,855 in specie landed at Cocanada, against . . .

Rupees 516899 and Rupees [illegible] in Specie of the previous year. In the article of twist alone the increase was Rupees [illegible]. In addition to the above Imports and Specie, Accountant-General's Bills to the amount of Rupees 1226000 were negotiated during the past year. This very large circulation of money vouches of itself for the healthy condition of the agriculturists' finances, and that the present Revenue of 27 Lacs is paid without any strain.

60 Thirdly. The Traffic on the main lines of navigation which is shown in the following Statements prepared under Extract Minutes Consultation 5th July 1858 No. 1110 is very satisfactory.

Statement

Statement of the Traffic shewing the Number of Boats and Rafts passing thro the undermentioned Locks in Godavery Division

Months	Grain		Other agricultural produce		Salt		Lime and shell Chunam		Firewood		Other Goods		Empty Boats	Total	Passenger Boats	Paddle Boats	Transit Boats	Total	Grand Total of Boats	Rafts of Timber		Rafts of Bamboo		Total Rafts		Total Value of Goods	Remarks
	Boats	Value	Boats	Value	Boats	Value	Boats	Value	Boats	Value	Boats	Value								No.	Value	No.	Value	No.	Value		
1858																											
Dowlaisweram																											
May	48	8573	190	71358	49	8338	5	160	12	349	113	29263	184	601	17	35	102	156	757	22	11324	97	1614	139	12958	130999	
June	66	12832	135	55098	61	12496	"	"	83	1388	170	53710	246	761	10	21	104	135	896	96	5805	96	2410	192	8215	143739	
July	78	15810	92	22412	64	15222	6	198	24	316	125	67181	246	655	4	14	108	126	781	153	3553	48	1133	201	4696	126035	
Augt.	223	28120	28	22824	70	17507	9	326	22	178	122	46609	351	825	5	24	130	159	1004	3	463	5	90	8	553	136220	
Septr.	286	104544	65	32109	42	10526	8	311	43	392	105	25543	586	1341	8	20	130	158	1499	20	2369	7	132	27	2501	176015	
Octr.	402	96801	87	60359	59	12663	8	171	36	380	83	39634	438	1123	6	26	130	162	1305	11	1357	11	165	22	1522	213543	
Novr.	191	40533	208	123478	51	12472	14	165	65	790	120	37296	478	1127	5	19	130	154	1281	59	11841	18	301	77	12142	228896	
Decr.	114	29118	126	60172	50	12034	11	535	50	340	136	22841	364	860	18	33	81	132	992	66	3839	39	1290	105	5129	137169	

Months	Grain		Other agricul. Rural produce		Salt		Lime and Shell Chunam		Firewood		Other goods		Empty Boats	Total	Passenger Boats	Cattle Boats	Travellers Boats	Total	Grand total of Boats	Rafts of Timber		Rafts of Bamboo		Total Rafts		Total value of goods	Remarks
	Boats	Value	Boats	Value	Boats	Value	Boats	Value	Boats	Value	Boats	Value								No.	Value	No.	Value	No.	Value		
1857																											
Jany	323	12118	84	50053	21	5172	12	163	33	350	58	23254	447	1103	16	33	104	156	[illegible]	96	6086	34	2144	130	8230	173568	
Feby	326	88415	117	15738	44	10800	11	240	78	808	126	22970	520	1234	17	38	120	175	1409	99	[illegible]	162	[illegible]	261	[illegible]	[illegible]	
March	72	13085	185	9474	24	5326	17	149	33	452	105	11373	316	752	22	25	127	174	928	22	350	33	2187	55	[illegible]	[illegible]	
April	86	17313	232	72324	49	9405	10	266	2	13	103	23818	303	785	~	17	[illegible]	150	935	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Bobburlunkah																											
May	35	5026	31	2182	9	2000	1	53	2	44	44	2033	79	[illegible]	[illegible]	23	~	33	233	1	160	12	2309	13	2479	31177	
June	46	7708	20	6786	12	2775	~	~	~	~	55	11414	73	231	14	11	~	25	256	8	606	11	3028	19	3634	37777	
July	45	8318	12	4712	10	2350	~	~	~	~	60	12312	75	202	10	9	~	19	221	14	1032	2	96	15	1128	31170	
August	24	5088	10	3754	8	1450	2	36	~	~	64	14899	56	164	2	[illegible]	~	[illegible]	173	~	~	~	~	~	~	25827	
Septr	[illegible]	3400	11	2639	4	1050	~	~	~	~	32	10332	39	102	2	10	~	12	114	2	16	1	6	3	22	17503	
Octr	10	1624	6	1747	11	8175	2	15	~	~	40	6378	35	104	4	12	~	16	120	5	363	3	374	8	737	18676	
Novr	[illegible]	1346	32	8263	15	3825	1	18	1	209	44	2247	88	188	10	9	~	19	207	1	109	13	1502	14	1611	19755	
Decr	2	280	14	2157	2	200	~	~	~	~	11	1211	18	47	1	8	~	9	56	2	138	2	130	4	268	6356	
Jany/59	9	1530	6	2602	11	2050	4	139	~	~	72	13019	91	193	7	14	~	21	214	4	1048	11	1208	15	2256	21596	
Feby	16	3536	12	4074	5	900	5	81	~	~	89	11302	132	259	4	20	~	24	283	8	1739	18	1621	26	3360	23253	
March	8	1648	36	13855	8	1700	8	195	~	~	62	9890	118	240	15	19	~	34	274	11	2967	25	9192	36	12159	39447	
April	2	360	31	13559	7	1713	9	237	4	209	85	16847	94	232	13	18	~	31	263	11	2316	23	1747	34	4063	36988	
Vizaisweram																											
May	136	25600	98	38769	25	3600	8	310	16	462	79	14756	212	574	56	16	~	72	646	4	1302	126	3167	130	4469	87966	
June	132	24270	75	30703	30	5110	~	~	4	67	131	50631	227	599	9	28	50	87	686	50	2132	50	966	100	3098	113879	
July	163	30925	55	20155	38	8260	18	383	10	306	111	38364	274	669	7	29	50	86	755	40	874	30	574	70	1448	99861	
Augt	272	59376	24	8070	44	8490	23	505	4	124	129	44438	503	999	3	26	50	79	1078	~	7	9	928	9	935	121998	
Septr	581	129152	28	12800	24	5720	13	353	[illegible]	315	77	25779	505	1297	5	22	48	75	1372	24	185	24	1108	48	1293	175412	

Octr

Months	Grain		Other agricultural produce		Salt		Lime and Shell Chunam		Firewood		Other Goods		Empty Boats	Total	Passenger Boats	Paddle Boats	Travellers Boats	Total	Grand Total of Boats	Rafts of Timber		Rafts of Bamboo		Total Rafts		Total Value of Goods	Remarks
	Boats	Value	Boats	Value	Boats	Value	Boats	Value	Boats	Value	Boats	Value								No.	Value	No.	Value	No.	Value		
Octr	453	115316	41	2141	39	9110	11	340	9	520	65	31704	409	1020	5	32	50	87	1114	83	1839	100	3365	183	5204	173635	
Novr	268	55175	135	66125	22	2690	18	584	9	464	83	29724	375	910	11	32	60	103	1013	8	3822	17	3846	25	7668	159231	
Decr	160	35304	88	36290	28	5580	13	532	9	386	102	12141	353	753	12	53	55	120	873	202	4028	118	3370	320	7398	96553	
Jany 59	365	92887	43	21757	19	3390	24	815	27	900	62	7870	381	927	9	41	53	103	1030	192	4153	160	3322	352	7475	139934	
Feby	433	104760	75	41865	28	5380	20	772	23	588	80	14759	440	1099	20	57	35	112	1211	162	3538	177	3668	339	7206	177322	
March	100	23018	122	59226	15	3010	30	1170	18	374	63	9775	286	634	12	21	31	64	698	232	7480	150	3249	382	10729	107302	
April	153	14774	208	68492	31	7000	15	530	30	514	115	[illegible]	283	835	6	22	[illegible]	[illegible]	926	332	6165	103	2104	435	8269	137545	

61 The results for the past year as compared with its predecessors are as follows

Eastern Main Canal

Dowlaishweram Lock

Boats	Tonnage	Rafts	Value	
11119	166785	1645	2001984	in 1858.59
7830	117450	1526	1561490	1857.58
Inc. 3289	49335	119	440494	

Central Main Canal

Bobbeelunkah Lock

2166	32490	187	310345	in 1858.59
2078	31170	164	353760	1857.58
Inc. 88	1320	23	Dec. 43415	

Western Main Canal

Vizaisweram Lock

10,307	154,605	2,399	1594,996	in 1858.59
7638	114,570	840	1069,084	in 1857.58
Inc. 2669	40035	1559	525,912	

62 From this it will at once be seen that there has been an increase during past year in each particular (the value of Goods carried on Central main Canal alone excepted) while at the same time that item in the Western main Canal has increased in a greater proportion than the number of Boats. Before quitting the subject of the Trade in this District it may be well to compare the aggregate Number and Tonnage of the Arrivals at and Despatches from the Ports of Coringa Cocanada Narsapore.

Increase during last [illegible] preceding &c

Arrivals [illegible] Departures

In 1857/58. 387 - 89,772 - 423 97,573 [illegible]

1858/59 - 245 - 122,213 - 456 - 125,5[illegible]

A very considerable increase is thus exhibited in this Branch of Traffic also.

63 Mr Dykes has during the year under review made the investigation ordered by Government into the extent of Land irrigated from the Anicut Channels, and the result is that the Returns by the Revenue Department have been found to be understated to the following extent: in Rajahmundry 5 per Cent, in Masulipatam 86 per Cent, while in seven Villages in Masulipatam [illegible] a discrepancy of 128½ per Cent has been shown. In the survey of Rajahmundry and Masulipatam Mr Dykes adhered to the strict letter of his instructions as to the number of Villages to be measured, while if he had acted in that as in other points in the spirit of the Orders, Captain Rundall has little doubt that the differences in the returns from these Districts would have been much greater. [illegible] however he is satisfied that the extent of land irrigated was in all about 700,000 Acres and the supply of water conveyed during the height of the cultivating season was at the rate of nearly one Million Cubic Yards per hour.

Kistna Dn 64 In this District the expenditure on new works and Repairs during the past year has amounted to Rupees 2,25,471, which includes a sum of Rupees 1995 from the Discretionary Funds. Besides this Rupees 33,952 were paid for Machinery and Rupees 2954 in conveying the same from Masulipatam Bay and fitting it up at Bezwadah. In Masulipatam District a further sum of Rupees 3726 were expended from the Local Ferry Funds in constructing 2 large new Ferry Boats, 6 punts, and several cattle ghauts, also in commencing a masonry one at Bezwadah. The total of these various Items comes to Rupees 2,66,103. The expenditure in 1857/58 was Rupees 2,61,997

65 The restrictive orders of Government, and the great difficulty in procuring a large supply of laborers in any one particular spot, have checked the operations of the Department to a very considerable degree in this District.

66

66 The last of these was felt most severely on the Masulipatam Canal, the works on which are now in a [illegible], and from various causes, the amount of labor, that it should absorb and command, is not available.- Notwithstanding this however much progress was made during last year and the Canal opened to Nedamole within 10 miles of Masulipatam.- Rupees 38,940 (including Rupees 1034 for machinery) were expended upon it in 1858/59. The operations consisting in the removal of 4,43,321 Cubic yards earthwork, the construction of a Syphon tunnel at Inampoody, a lock and Calingulah with accommodation Bridges (1 Brick arch of 20 and 3 of 5 feet span) at Vurumbay, and the Cuggommitty Sluice.-

67 The principal other works under execution during last year were.-

The operations for improving and strengthening the East Bank of the River Kistnah from Yennamalacoodroo to Mopidavy - 33 miles - Of the Earthwork

Earthwork of this undertaking, 102,503 Cubic yards were finished at a cost of Rupees 8746.-

The new Channel of Supply to Manulla, Malabarry, Aidingaroy and Yedlacodoos has been begun, and Rupees 1738 were spent in removing 26,048 Cubic yards of earth work, and constructing a fine 3 vent Head Sluice

The road from Ebrampatam to the Nizam's frontier is metalled and in very fair order for 50 miles. Rupees 14,298 were last year expended upon it, and besides 17 miles of metalling, and 11 Bridges built, 17 tunnels and 9 small road dams were constructed. It is however a matter of very great importance that this line of communication be extended to meet the fine road in Hyderabad, as soon as possible.-

68 Traffic throughout the Division has much increased during last year, and more particularly on the Hyderabad and northern line - but as the

greater portion of the traffic on this road passes during the night the returns cannot be relied upon as correct. On the River also the number of Boats (not belonging to Government) which passed through the Weir & Lock at Bezwarah and Sulamagnam was very much in excess of the preceding year. The following are the statements of the traffic on the Kistna during 1858/59 required by Government.

Statement

Statement of the Traffic shewing the Number of Boats and Rafts passing thro' the undermentioned Locks in Kistnah Division

Bezwarah Locks.

Months	Grain Boats	Grain Value	Other agricultural produce Boats	Other agricultural produce Value	Salt Boats	Salt Value	Lime and Shell Chunam Boats	Lime and Shell Chunam Value	Firewood Boats	Firewood Value	Other Goods Boats	Other Goods Value	Empty Boats	Total	Passenger Boats	Paddle Boats	[illegible]	Total	Grand Total No. of Boats	Rafts of Timber No.	Rafts of Timber Value	Rafts of Bamboo No.	Rafts of Bamboo Value	Total Rafts No.	Total Rafts Value	Total value of goods	Remarks
1858																											
May	13	2678	1	12	„	„	„	„	„	„	„	„	16	30	„	„	„	„	30	3	200	4	390	7	790	3480	
June	16	3585	3	72	„	„	„	„	„	„	„	„	35	54	„	„	„	„	54	14	2118	3	248	17	2366	6023	
July	12	2308	12	4905	„	„	„	„	„	„	25	„*	17	66	„	„	„	„	66	3	135	2	76	5	211	7224	*Containing Telegraphic Wire the value of which is not known
Augt	5	1132	38	31531	„	„	„	„	„	„	„	„	10	53	„	„	„	„	53	2	22	4	122	6	164	32827	
Septr	29	6812	25	23577	„	„	„	„	„	„	„	„	26	80	„	„	„	„	80	7	1972	1	30	8	2002	32391	
Octr	[illegible]	2544	34	36518	„	„	„	„	„	„	3	140	20	67	„	„	„	„	67	„	„	„	„	„	„	39202	
Novr	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	Closed for removing Silt:
Decr	8	1355	8	2858	„	„	„	„	„	„	„	„	23	39	„	„	„	„	39	1	21	„	„	1	21	4234	
Jany 59	8	917	„	„	„	„	1	45	„	„	„	„	14	23	„	„	„	23	23	4	255	2	245	6	700	1662	
Feby	1	60	„	„	„	„	„	„	„	„	„	„	10	11	„	„	„	„	11	7	479	17	1636	24	2115	2175	
March	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	Laid bare for the purpose of removing Silt.
April	4	375	„	„	„	„	„	„	„	„	„	„	19	23	„	„	„	„	23	3	206	9	1997	12	2203	2581	

Seetanagram Lock

1858	Grain Boats	Grain Value	Other Merchandize Boats	Other Merchandize Value	Salt Boats	Salt Value	Lime and Shell Chunam Boats	Lime and Shell Chunam Value	Firewood Boats	Firewood Value	Other Goods Boats	Other Goods Value	Empty Boats	Total	Passenger Boats	Paddle Boats	[illegible] Boats	Total	Grand Total of Boats	Rafts of Timber No	Rafts of Timber Value	Rafts of Bamboo No	Rafts of Bamboo Value	Total Rafts No	Total Rafts Value	Value	Remarks
May	22	5436	-	-	-	-	-	-	-	-	1	19	44	67	-	-	-	-	67	14	2598	8	353	22	2951	[illegible]	
June	22	4307	-	-	-	-	-	-	-	-	3	900	31	58	-	-	-	-	58	20	2965	17	1081	37	4046	[illegible]	
July	[illegible]	5189	5	1938	-	-	-	-	-	-	4	735	34	69	-	-	-	-	69	5	530	6	208	11	738	[illegible]	
Augt	27	3774	9	5188	-	-	-	-	-	-	1	301	31	58	-	-	-	-	58	1	125	5	57	6	[illegible]	[illegible]	
Septr	11	874	2	520	-	-	-	-	-	-	-	-	27	40	-	2	-	2	42	1	12	-	-	1	12	[illegible]	
Octr	23	3296	1	1480	-	-	-	-	-	-	1	30	9	34	-	-	-	-	34	-	-	-	-	-	-	[illegible]	
Novr	4	524	-	-	-	-	-	-	-	-	-	-	11	15	-	-	-	-	15	-	-	-	-	-	-	524	
Decr	4	375	-	-	-	-	-	-	-	-	-	-	2	5	-	-	-	-	6	4	128	4	226	8	354	730	
Jany 59	1	180	-	-	-	-	-	-	-	-	-	-	5	7	-	6	6	-	13	17	1526	20	2841	37	4367	4547	
Feby	4	201	-	-	-	-	-	-	-	-	-	-	5	10	-	-	-	-	10	17	4325	15	5655	32	[illegible]	[illegible]	
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Lock closed for the purpose of removing silt.
April	8	796	-	-	-	-	-	-	-	-	-	-	3	11	-	-	-	-	11	5	337	8	541	13	878	1674	

69 From these returns it will be seen that the first named Lock was twice closed in the course of last year for the removal of silt during the months of November 1858 and March 1859 while the second was shut during the latter month for the same purpose. From the subjoined comparative view of the number of Boats and Rafts with the value of goods which passed through these Locks in 1857/58 and 1858/59, it will be seen that all have increased considerably, notwithstanding the interruptions above mentioned

	Boats	Rafts	Value of goods	
Beggarah	446	86	131,299	
Seetanagram	423	159	56,258	
	869	245	187,557	in 1858-59
	338	231	167,402	" 1857-58
	531	14	20,155	

70 Irrigation has extended considerably in this District last year, which was a most favorable one for the Ryots and the land revennes of Musulipatam and Guntoor have accordingly advanced also.-

In the former the number of acres irrigated is stated by the Collector at 63,100 exclusive of dry Crops deriving benefit from the Kistna water, and the increased Revenue due to Irrigation at Rups 64,635. In the latter the area watered is retained at 44,190 acres and the Revenue on an average of 5 years prior to the Construction of the Annicut at Bezwada 120,826 - The Revenues of these Collectorates during last year and its predecessor were as follows.-

	1857/58	1858/59
Masulipatam	10,77,730	12,29,000
Guntoor	16,43,478	10,00,270

71 The Board of Revenue having interdicted a water cess being levied on the holders (either under Government or Enam) of "mamool wet" land, the Revenue in Masulipatam has not increased so much as it would otherwise have done; nor can an increase be looked for as long as that regulation is in force, for no one would take and irrigate dry land at a cost of Rups 3½ per acre for water Duty, if by any means he can obtain ground deriving the same benefit from the Annicut, and exempted from that Tax.

Nellore.

72. The Amount of Expenditure in Nellore in 1857-58 was Rupees 2,23,569, while during last year it rose to the very large sum of Rupees 3,55,371, the component parts of which are.

	New Works	Repairs
Irrigation Works	56,344	2,37,913
Communications	19,040	36,797
Buildings	1,708	3,567
In all Rupees	77,092	Rupees 2,78,277

73. On the construction and repair of Irrigation Works by far the larger portion of the above sum was expended, Rupees 2,94,257 having been laid out upon them. This was occasioned by the very extensive injuries sustained by that class of works in November 1857, and to the urgent necessity that existed for their being restored efficiently and without loss of time in order that neither the Government Revenue, nor the inhabitants of the District whose prosperity or adversity depend upon them, might suffer.

74. The principal work injured was the Pennair Annicut, and in its reconstruction almost the entire sum under

that head in New Works was incurred. This outlay however was of no permanent advantage, for after 3/4ths of the Annicut had been rebuilt at a cost of Rupees 51,327 it was seriously damaged in September 1858 by an unexpected fresh which carried away a portion of the cut Stone Aprons; and before the injury could be repaired and the work completed 2/3rds of the entire Annicut were swept away by the unusual and severe flood of October.- Government, deeming it unadvisable to reconstruct it a second time on the same section, in March 1859 instructed Colonel Cotton to inspect the site, and decide what should be done. After a careful investigation, a section similar to that at Bezoarah, which has successfully braved the heavy floods of the Kistnah, was fixed upon, and on 25th April Government sanctioned an immediate expenditure of Rupees 28000 for its construction. Previous to this however (on 15th March) preliminary operations had been commenced in the collection of materials &c., and

before

before the end of the Official Year Rupees 3802-2-10 had been disbursed on account of the New Work, which it is estimated will cost Rupees 74,500.

75. Of the other Irrigation Works damaged in 1857, (upwards of 400 in number and containing nearly 2000 breaches,) the Nellore and Ulloor Tanks are the largest and most important. The first of these was so far restored during the past year as to retain its full quantity of water, but as the heavy rains at the commencement of the monsoon breached the Ulloor Tank again at an unrepaired, but unlooked for, place 5/8ths only of the supply it could have held were preserved. The immense demand for labor could not be met, and thus the works did not progress as fast as was wished and required. However no fewer than 28,225 Cubic Yards of Tanks, Channels &c. were excavated and 35,95,918 Cubic Yards repaired.

76. On the communications of Nellore there are few remarks to be offered, as the restrictive orders have prevented any work of magnitude from

being proceeded with. 291 Miles however have been put in a satisfactory state of repair.

77. The only New Works executed have been upon Budget Nos 495, 374, 378, 499, and 87. regarding which a few words may be said. For the Masonry Works on Trunk Road No 6.- the first of the above - Rupees 20,000 were sanctioned in January - too late however for any thing being done before the close of the Official Year, beyond the mere preparation of materials, upon which Rupees 3919 were expended. On the second. the road from Ulloor to Nellore. an outlay of Rupees 5264 has nearly completed the metalling and emergent repairs have been effected. Of No 378 the road from Nellore to Gungapatam. 8 Miles with minor masonry works have been almost finished and most of the entire line opened for Traffic. Expenditure Rupees 1217. Of the 10 Tunnels on Trunk Road No 6. (No 499) 4 have been sufficiently advanced as to allow of the road being opened for Traffic. The Tunnel on same road consisting of 9 vents of 3 yards span sanctioned on 15th March 1858 and commenced on the following month was finished within the year at a total cost of Rupees 2501. No 87. The Bridge across the Muldavy, the completion of which was sanctioned on 8th April 1858, was finished in April 1859. Total Expenditure Rupees 3352.

Chief Engineer's Circr No 479 dated 15th January 1859.

Cuddapah.

78 The expenditure in this District during the Official year under review has been Rupees 148,017, and though exceeding that of the previous year (Rupees 109561) yet it has been in no degree commensurate with the requirements of the District. These however cannot be met as long as the restriction is kept upon so many important works. As will be seen from the subjoined classification the outlay of 1858/59 has been almost entirely upon Repairs. The Items are as follow.

	New Works	Repairs
Irrigation Works	16,806	79,066
Communications	11,352	36,909
Buildings	1,252	2,632
	Rupees 29,410	Rupees 118,607

79. The following short review of the operations and administration during last year will shew what has been done and what is still required.

80. The New Head with Sluice to the Genamalachintala Channel has been completed at a total cost of Rupees 5476.

81. The restoration of this Channel which was destroyed by the unusually heavy fresh on the Cheltravutty of May 1851 was not fairly commenced

till March 1857, in consequence of objections being raised by the ryots in the (Bellary) Districts to the new cut being made through their land; sanction was subsequently given to the project but at such a time, that when the river again rose, the works were not sufficiently advanced to resist it, and a portion was destroyed. It was however finally completed on 23rd April last.-

82 The Head Sluices and supplying Channels into the Ooparapully and Pullarole Tanks were also completed in April last, and proof has been already given of their utility, for though unfinished when the Pennair was in flood, they did good service and the revenue under them has increased from Rupees 562 in 1857 to Rupees 1,330 in 1858.-

83. The Road from Gundnapully to Seeglybyle 8 Miles and 3 furlongs. With the exception of some small works not included in the Estimate, this road 5 yards wide, and a good specimen of the communications required in Cuddapah, is finished with gravel, tunnels and road dams; when the additional 4 Bridges and 2 tunnels are built, the cost of the line will have been about Rupees 1,500 per Mile.-

84. Government having withdrawn on 18th December 1858, the restriction on the Road from Ootcoor to Cuddapah (2 Miles) it has been completed

and

and is of great advantage to the Traffic between Chittoor and Bangalore as it leads from Cuddapah towards the Goolcherroo Ghaut.-

Procs of Govt. Augt. 11th 1859 No. 1923.-

85. This Ghaut though in excellent order will be much benefitted by the parapet walls lately sanctioned, as the Bandy men are careless and accidents are not unfrequent.-

86. The maintenance allowance of Rupees 14,000 has enabled the District Engineer to keep the Trunk road No. 11 in repair, but Bridges are much wanted upon it, a part of the above allowance being unavoidably misappropriated in sloping the banks of the rivers, so that the line may be undamaged for traffic.-

87. The Roads from Cuddapah to the top of the Dorinal Pass on the one hand, and towards Bellary on the other have been much improved by the outlay upon them of Rupees 5,265 (the Annual sanction) and Rupees 7,950 respectively.-

88. The Repairs in the District have been almost entirely upon Irrigation Works and Communications the Items of which are as follows. 337 Tanks 48 Channels, and 285 Miles of roads. In the first of the above classes of works no fewer than 94 were seriously damaged in the South Eastern Talooks by the very heavy fall of rain on 16th October last. Of that number 55

were situated in the Sidhout Talook, and many of them were the same that suffered in 18[illegible].

89. Roads are the great desideratum in this District. Their want was more severely felt than ever during last year and operated most injuriously upon the welfare of the ryots, for owing to there being so few, and the bad state of existing lines, they were unable to send their grain to the Mysore Markets, where they could have realized a profitable return upon their Crops. The soil of the District is very favorable, so that roads for Cart Traffic could be made with a small outlay, and as Government has sanctioned a very considerable increase to the discretionary allowance for roads, existing lines will it is expected soon be put in better order and it is anticipated that next years Report will be more cheering as it will in all probability state that the communications have been put in good order, thereby meeting, as far as the restrictive orders will permit, the requirements of the District..

90. Two occurrences during the past year, connected with this District, claim notice. These are. The transfer to Kurnool of 3 of the Northern Talooks, and the commencement of the North Western Railway..

The

91. The Transfer to Kurnool of the Cumbum Doopaud and Koilgoontla Talooks has had the effect of reducing the area of this District to 9000 Square Miles. and has been the means of lessening, and, in some Cases, removing the very great inconveniences experienced by the District Engineer from the deficiency of the Communications in this immense District, where the distance between some of the works was upwards of 200 Miles.-

92. The Commencement of the North Western Railway is a circumstance which draws special attention to the State of the Communications of Cuddapah. It enters the District at Bandapilly, and proceeds towards Bellary passing through the Chitwail Talook and close to the town of Cuddapah. For 69 Miles of its length in this District the line runs between 2 Chains of Hills untraversed by any road, there not being one fit for the passage of a loaded Bullock. That the Country should be immediately opened up by roads to act as feeders to the Railway, and to Confer upon the people the benefits of this great National work, is a point upon which there Cannot be two opinions. Two very important lines are, from Royachoty via the Sannepoy ghat to Rajumpett where there is to be a Railway Station - And from Cuddapah towards

Kurnool and Secunderabad. The former will bring the produce of 6 large Talooks to a point of transport, and act as a stimulant to the trade of a large part of the District - the latter, though at present in a bad state of repair, (impassable during the Monsoon) will it is expected not long remain in that Condition, as Government have Called for an estimate for putting it in thorough order

Bellary

93. In the Official year now under con:sideration, the Expenditure in Bellary District amounted to Rupees 2,72,319, an increase of nearly 45 per Cent upon the outlay in 1857-58 (Rupees 1,88,863). The items of the past years Outlay are as follows

	New Works	Repairs
Irrigation Works	4051	152,899
Communications	1217	50,985
Buildings	47,879	12,286
	Rupees 53,147	Rupees 2,13,172

94 From this it will at once be observed that the attention of the Department has been engrossed chiefly by the repairs of the important Irrigation works of the District, as well as its Communications - The only new works of any moment being Military Buildings, which consisted mainly of

of the Hospital for European Troops at Bellary, and the Married Men's quarters at Ramandroog, in:volving an Expenditure of Rupees 42,908. These have progressed satisfactorily, notwithstanding that timber was with difficulty procured, as the Contractors in many cases were unwilling to fulfil their bargains, and even sold the wood in open Market, finding that the price there obtainable was higher than that specified in their Contracts, which had been entered into some years before -

95. In the Hospital the whole of the Ma:sonry of the lower storey is completed - the Upper storey nearly so - and the flooring between them well on hand - Of the Quarters at Raman:droog 3 Ranges are finished - the walls of the other 7 are well up - and Materials sufficient to Complete them Collected -

96. In the repair of Irrigation works as above shewn, the bulk of the Expenditure has been incurred, the larger portion of which has been in Executive ranges Nos 1. 5 and 6 - A few remarks upon the work done and the present state of the District are subjoined -

97. In executive range No 1. the Toongabu:dra Channels and Dargjee Tank are the only works requiring notice - The former are in a satisfactory state, with an improved Cultivation

under them - the latter has had its Calingulah raised 3 feet. but the District Engineer is of opinion that on further examination it will be found that at a small cost its capacity could be improved so that an additional quantity of 20 million Cubic yards of water could be contained in it.-

98. In Executive range No. 2 - 87 Tanks and 5 Channels have been repaired, but much still remains to be done. In No. 3 there are few Tanks, and the soil almost entirely black Cotton - No. 4 was sadly neglected by the Subordinate in charge, but it is hoped that Mr. Powell will soon have it in a very different state

99. In Executive range No. 5 the Anantapoor and Singanamullah Tanks have been put in thorough repair - It is proposed to add 3 feet to their Calingulahs and Bunds, and by the increased store of water to irrigate a large extent of land.-

100. The state of the Irrigation works in Executive range No. 6 is such that, al:though the large sum of Rupees 57,275 was

expended

expended upon them last year, further ex:tensive repairs are urgently required, last Octobers heavy rains having seriously injured them.-

101. The requirements of the District are Roads, Irrigation works, and European Supervision -- In Executive range No. 4 all the roads require bridges - The Toongabudra project, however, is the work that will confer most benefit upon this range. In No. 5 the Completion of Trunk Road No. 12, which is in abeyance owing to the restrictive orders, and of the line from Anantapoor to Tandputtry, are the most emergent, to which may be added the road from Dhurmaverum to Tandputtry via Tandmurry; however an allowance of Rupees 100 a mile would effect a great deal of good in this and the adjacent range, as the soil is favorable - In range No. 6, which is hilly but with a good soil, cross roads would

be of great service and Cuffunt[illegible] which would render the undermentioned lines, which at present are almost impassable, fit for Cart Traffic. These are

Road from Penagondah to Kota-pulamum .. 25 Miles
" " Agraharum to Dhurmavarum 18 "
" " Penacondah to Madukseerah 30 "
" " Madukseerah to Sevadee .. 20 "
" " Somunadapully to Hindupoor 18 "

102. The hot season of the past year in this District was very sickly - a great scarcity also prevailed as from May till October no rain fell - The people were in a state of great distress and suffered heavy losses in the first part of the year. One thing still remains to be mentioned, and that is the Transfer during the past year to Kurnool of the Punchapollium Talook which formed part of Executive range No. 4 of this District.

Kurnool.

103. The Sum expended in Kurnool during the Official year 1858/59 was only Rupees 67,132 exceeding by a little the outlay of the preceding one, which was Rupees 59,033. The Restrictive orders still in force have caused the expenditure to be so small and at the same time to be limited in a great measure to Repairs, and those the most urgently required, as will be seen from the following classified Statement.

	New Works	Repairs
Irrigation Works	"	16,915
Communications	20,882	19,400
Buildings	7,778	2,157
Rupees	28,660	38,472

104 The operations on the Nundy Cunama Pass, on the Bridge over the Hindree, and on the Cumbum Tank are the only Items in new Works that require notice. They will be considered in the first place, then the Repairs

in the district and its [illegible], a few months at the [illegible] of the fresh year being added.-

105. The Nundy Canama Pass is intended to be the line of communication between the Cumbum Taluk and the Western part of the District from which it is separated by the Yella Mulla Hills a chain which runs from the Kistna to the Pennair, and which, besides cutting off all communication, afforded a refuge to the Robber Bands of Chenchus and other predatory tribes. The undertaking was commenced in December last, but owing to a dread of sickness, labourers even with the inducement of high wages could not be prevailed upon to work. Consequently, although nearly all the earthwork of the Ghaut with the heavy cutting is finished, and 6½ miles of the Road opened, the masonry has made little progress, 14,415 Cubic feet of the Bridge at Mettu and a 40 feet span tunnel being all that has been accomplished.

Instead

Instead therefore of Rupees 20,000 as was anticipated having been expended upon it before the close of the Official year, Rupees 12,950-15-9 was the outlay incurred. The Mettu Bridge was expected to be finished in May 1859.-

106. On the Bridge over the River Pindree Rupees 6,000 only were laid out in the course of last year, and little progress was made, as work was suspended for the greater part of the time. Latterly however operations were pushed forward more vigorously. a Stone Quarry has been opened near the Bridge, and a tramway laid down between them, so that at no very distant date its completion may be looked for

107. The Destruction of the Fort at Cumbum was finally accomplished on 1st December last.

108. Although the following Irrigation works viz 88 Tanks 11 Channels and 8 wells have been repaired during the year under Review at a cost of Rs 16,915; yet -

the condition at present of the Tanks is
anything but satisfactory and many
of them are nearly in ruin. The works
of this Class in the newly added
Talooks Cumbum and Doopaud also
require constant and careful supervision
many of them are of great importance.

109. The expenditure of Rupees
19,400 upon the repair of 158 miles of
Road and 2 Bridges has maintained
the Communications in a very fair state.
The want of Bridges in the Rivers is
however detracts much from their value
to the District.

110. The requirements of Kurnool
are the Restoration of Irrigation works
which have fallen to Ruin. the thorough
Repair of those in existence, and a number
of new ones. the completion with bridges
of the present lines of Communication —
and the opening out of new ones, Cross
Roads to the principal villages as well
as main lines. Of the latter three may
be named. that over the Nuntiaral Conamah
Ghaut to Doopaud and Gurloor from Kurnool

towards

towards Cuddapah and Madras — and from
Kurnool to Hyderabad. The present Road
between the two last named places is totally
unfitted for such an important Military
line, as in the Rainy Season it cannot be
used for several successive Months.

111. The events of the past year which
will be noticed in the last place are. The
change that has taken place in the desig-
nation of the District, and the addition to
it of 4 Talooks from the adjacent Districts
of Cuddapah and Bellary.

112. On the 1st of July 1858 Kurnool
was converted into a Regulation District,
by the abolition of the single Office of the
Commissioner, who was chief Civil authority
in the Revenue and Judicial Departments,
and the appointment of a Collector
with his Assistants at Kurnool and
the Establishment of a Judge's Court
at Nundial.

113. The transfer from Cuddapah
of the Cumbum, Doopaud and Koil-
goontla Talookes, and from Bellary of
the Punchapollium Talooks has more

than doubled the area of the [illegible] District, and passes many valuable Irrigation works to it.-

Chingleput.

114. During the year 1858/59 Rupees 3,01,820 was the amount of expenditure in the District, while that of the previous year was Rs 270,864. But instead of the two Branches of outlay being within Rs 28,000 of each other as in 1857-58, that upon Repairs in the year under review was more than 3 times the amount expended on New works, as will be seen from the following Abstract:-

	New works	Repairs
Irrigation works	48	97,407
Communications	26,262	121,101
Buildings	47,061	9,939
Rupees	73,371	228,447

115 From the above it will be observed at a glance that new works have with a very small exception been limited exclusively

to

to Communications and Buildings, & these will be considered in the first place.-

116. The principal Items of Communications are.- The Road from Poonamallee to the Avady Railway Station on which Rs 16,962 was expended last year. This line is now metalled and completed throughout with Bridges and Tunnels. The Sairas Bridge which was mentioned in August 1858 was finished on 30th April 1859- Outlay during the year Rs 1065- The Bridge across the Kullaur on Trunk Road No 8 near Carangooly, to which 2 arches are to be added.- The abutments piers and wings have been completed at a cost of Rupees 2,076 and it is expected that the work will shortly be finished..

117 In Buildings, the main outlay (Rs 39,092) has been upon Military Buildings, the chief of which are the Married men's Quarters at St Thos Mount completed on 31st July 1858, the expenditure last year being Rs 15,484- The European Quarters at Poonamallee, on the partial

improvement of which Rs. 1,254 were spent. The Stables &c at St Thos. Mount for the use of the Royal Artillery, completed on 31st December 1858 at a cost of Rupees 2816, and the Buildings at the same place for the accommodation of the Horse Battery, finished on 21st Decr last.

118 The only other item under this Head deserving notice is the Civil Engineer's Office and works yard at Guindy, which were completed on 30th April 1859 at a total cost of Rupees 5283. Rs 5177 being the expenditure of last year.

119 The small sum of Rs 48 entered under Irrigation works may be explained before proceeding to consider the other matters connected with Chingleput. It was spent in maintaining the nursery for planting the sides of the Cumbum Cal. Channel a part of the Palar Anicut, the operations on which are in abeyance as the project is under the Restrictive orders.

120. Although the large sums of Rupees 97,109 and Rs 121,101 have been spent upon the repair of Irrigation works/1420 Tanks and

Channels

Channels/and Communications/200 miles of Roads and 110 of Canals, as well as 2 Bridges/ much still remains to be done. Trunk Road No 1, though in good order for Cart Traffic, is not fit for the passage of vehicles, as it is much cut up by Bandies, the drivers of which traverse the entire road, in place of keeping to their respective sides, regardless of the remonstrances of the people in charge of the line, who are too few in number to compel them. Trunk Road No 6 needs metalling, a bridge to be thrown over the Cortelliar, and a road made across the Poonjeddla Backwater. Trunk Road No 8 requires to be newly metalled for the last 10 miles of its length in this District, and a Bridge across the Palar where the old Causeway was laid. In September 1858 Government sanctioned Rupees 1,000 for the clearance of this track, which was nearly accomplished, when in the end of April last a fresh came down

and buried it again. In the way often occur
and at any moment, Repairs are urgently
Required, if the Traffic is to be maintained
unimpeded.- The Road from Chingleput
to Conjeveram is in very bad order, the
allowance of Rupees 11 per mile being
quite inadequate to put it in good repair,
as it has been seriously injured. Instructions
have been given by the District Engineer
for the submission of a full Report and
Estimate together with a Statement of
Traffic upon the Road.

121. The prosecution of [illegible] and
Irrigation works in [illegible] was Commenced
but at present under Restriction and
the construction of other new ones constitute
the Requirements of this District.-

122. During the past year the Supervision
of the Eastern Coast Canal, which had before been
a totally distinct charge, was added to the
duties of the District Engineer of Chingleput, as
the Office of Superintendent thereof was abolish+
ed on 1st July 1858 under instructions from
the Honorable the Court of Directors

+ Ext. Mi. Cons.
No. 1223 of 29th June /58
Despatch No. 5
of 12th May /58.

11.

123. The following are the State-
ments of Traffic &c. upon this line of
Communication Required annually by Govern-
ment, which have been prepared by the
Engineer of this District, and to which
is added the Statement called for under
Ex. Minu: Cons: 5th July 1856 No. 1110
prepared in the Central Office.-

Table A

Comparative Statement of Toll Collections on the Northern Branch of the E. C. Canal for the Official Years 1857-58 & 1858-59.-

Cargo	1857-58			1858-59			Relative Increase and decrease Decrease in Boats & Increase in Tonnage & Toll for the Off.l Years 1858/59			Remarks
	Boats	Tons	Toll	Boats	Tons	Toll	Boats	Tons	Toll	
Miscellaneous Produce	6909	75,058	18764 8 .	6,886	78,516½	19,629 2 .	-23	+3458½	+864 10 .	
Salt	2415	54,585	13646 4 .	2,225	51,720	12,930 . .	-190	-2865	-716 4 .	
Total	9,324	129,643	32,410 12 .	9111	130,236½	32,559 2 "	-213	+593½	+148 6 . .	

This Statement shews that while the number of Vessels plying during last year is 213 less than in the one preceding, the Tonnage of Goods and Tollage received therein have been increased in the aggregate. For although there was a large decrease as regards Salt in Boats, Tonnage and toll collection, and a diminution in the number of Boats conveying miscellaneous produce yet in the Quantity of the latter species of Cargo there was a large increase and a corresponding amount of Dues was levied accordingly. The Surplus in these Items being Tons 5935 and Rupees 1412. 6. respectively

Table B.

Table B

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Table B.

Comparative Statement showing the Increase and decrease of the Number of Boats Tonnage and the Amount of Toll Collected in each sort of Goods carried in the Colombo [illegible] passing through the C. C. Canal during the Official year 1857-58 and 1858-59.-

Names of articles carried	1857-58			1858-59			Relative Increase & Decrease for the Offl. Year 1858/59 Increase			Decrease			Remarks
	Boats	Tons	Toll	Boats	Tons	Toll	Boats	Tons	Toll	Boats	Tons	Toll	
Barks / Suwarnum													
Do / Vilum	2	21	5 " "	4	21	5 4 .	2	"	" " "	"	"	" " "	
Bones	13	83	20 12 .	7	31	7 12 .	"	"	" " .	6	52	13 " .	
Baggages	2	2	. 8 .	2	6	1 8 .	"	4	1 " "	"	"	" " .	
Baskets	"	.	. . .	2	17	4 12 .	2	17	4 12 "	.	.	. . .	
Bengal Gum	.	.	. . .	1	22	5 8 .	1	22	5 8 "	"	"	" " "	
Brooms	"	.	. . .	2	57	14 4 .	2	57	14 4 "	"	"	" . "	
Bangles	"	"	. . .	1	7	1 12 .	1	7	1 12 "	"	"	" " .	
Do Glass	1	13	3 4 .	"	"	" " .	"	"	" " .	1	13	3 4 "	
Bricks	1	7	1 12 .	"	.	" . .	"	"	" " .	1	7	1 12 .	
Chillies	1	1	. 4 .	"	.	" . .	"	"	" . "	1	1	" 4 "	
Cinnamon	180	2239	559 12 .	173	2184½	546 2 .	"	"	" " .	7	54½	13 10 "	
Chunam	60	339	84 12 .	74	433¾	105 7 .	14	94¾	18 11 .	"	"	" " .	
[illegible]	11	71	17 12 .	3	12	. . .	"	"	" " "	8	59	14 12 "	
Cocoanuts	1	27	6 12 .	2	30¾	8 13 .	1	3¾	2 1 "	"	"	. " "	
Cotton	5	8	2 . .	3	19	4 12 .	.	11	2 12 .	2	"	. " "	
[illegible]	1	19	4 12 .	1	20	5 . .	"	1	. 4 "	.	.	. . .	
Country Potatoes	3	38	9 8 .	4	64	15 12 .	1	26	6 4 "	"	"	. . .	
Crabs	8	56	14 . .	15	118	27 8 .	10	62	15 8 "	.	"	" " .	
Cocoanut Plants	92	92	23 . .	"	"	" " .	"	"	" " "	92	92	23 . "	
Drum Sticks	2	4	1 . .	"	"	" " .	"	"	" " .	2	4	1 " "	
Empty Boats	9	23	5 12 .	39	176	44 " .	30	153	38 4 .	"	"	" . .	
Do Rafts	137	175	43 12 .	97	139	34 12 .	"	.	. " .	40	36	9 " "	
Faggots	"	.	. " .	1	1	. 4 "	1	1	" 4 "	"	.	" " "	
Old Furnitures	1341	27,905	6976 4 .	1429	32125¾	8,031 7 .	88	4,220¾	1055 3 .	.	"	" . "	
Ghee Dubbers	8	8	2 " .	"	"	" " .	"	"	" . .	8	8	2 . "	
	"	"	. " .	1	3	" 12 "	1	3	" 12 "	"	.	" . "	
Carried over	1878	31,131	7782 12 .	1866	35473¾	8,868 . .	156	4,668¾	1167 3 "	168	326½	81 10 "	
	[illegible]	3	2/2 1 1	2	7/2	42 1 1	2	3	2/2 1 1	2	3	2 1 1	

Returns of articles Carried | 1857 | 1858-59

	Boat	Tons	Poll			Boat	Tons	
1857	1147	[illegible]	[illegible]	"	"	[illegible]	[illegible]	[illegible] 11 "
Shells	1473	23162	[illegible]	"	"	[illegible]	[illegible]	[illegible] 1 "
Salt fish	223	467	117	4	"	[illegible]	1113	[illegible]
Salt	2446	[illegible]	[illegible]	"	"	[illegible]	[illegible]	[illegible]
Sundries	225	300	75	"	"	60	167	427
Stone	45	524	131	"	"	31	[illegible]	[illegible]
Saffron	5	29	7	12	"	1	6	[illegible]
Soap	8	54	13	"	"	1	[illegible]	[illegible]
Spirits	3	9	2	"	"	2	4	[illegible]
Soap [illegible]	"	"	"	"	"	1	[illegible]	[illegible]
Sand	4	10	2	[illegible]	"	"		[illegible]
Tobacco	51	681	170	"	"	21	[illegible]	[illegible]
Turf	"	"	"	"	"	[illegible]	[illegible]	[illegible]
Tiles	"	"	"	"	"	1	[illegible]	[illegible]
[illegible]	"	"	"	"	"	[illegible]	[illegible]	[illegible]
[illegible]	"	"	"	"	"	1	[illegible]	[illegible]
Wood						[illegible]	[illegible]	[illegible]
	701	14226	3631	"	"	[illegible]	[illegible]	[illegible]
Total	9324	[illegible]	[illegible]	"	"	[illegible]	[illegible]	[illegible]

Relative Increase & Decrease for the Off. year 1858-59.

Remarks

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Increase					Decrease				
Boats	Tons	Poll			Boats	Tons	Poll		
275	5468	1367	"	"	339	1139¼	284	13	"
311	866½	216	9	"	"	"	"	"	"
24	539	134	12	"	"	"	"	"	"
"	"	"	"	"	190	2865	716	4	"
"	"	"	"	"	165	130¼	32	9	"
"	"	"	"	"	14	158½	39	10	"
"	"	"	"	"	4	33	5	4	"
"	71	17	8	"	"	"	"	"	"
"	28	7	"	"	1	"	"	"	"
1	29	7	4	"	"	"	"	"	"
"	"	"	"	"	4	10	2	8	"
"	"	"	"	"	20	332	55	"	"
25	35	8	12	"	"	"	"	"	"
1	3	"	12	"	"	"	"	"	"
4	4	1	"	"	"	"	"	"	"
1	17	4	4	"	"	"	"	"	"
"	"	"	"	"	132	1561¾	400	7	"
656	7013¾	1765	13	"	869	6419¾	1617	7	"

In this Table is exhibited the different descriptions of Goods landed at the Bunder during last year in comparison with 1857-58. The traffic in Jaggery, Shells, Ivory and Saltfish was larger while that in Salt, [illegible], Firewood and Tobacco had diminished. The aggregate quantity and value have increased.

	Tons	Value
1858-59	130,236 ½	Rs 32,569
1857-58	129,643	32,410-12

Pablo C.

Pablo C.

Table C

Statement showing the Number of Boats, Tonnage and the Amount of Toll Collected on each sort of Goods which arrived at the Cochrane Basin from each Village passing through the S. C. Canal during the Official Year 1858-59.

Names of Villages	Wood			Faggots			Shells			Salt			Grain			Miscellaneous Produce			Total No. of Boats	Tonnage	Amount of Toll paid at Madras
	Boat	Tons	Tolls	Boat	Tons	Tolls	Boat	Tons	Tolls	Boats	Tons	Tolls	Boat	Tons	Tolls	Boat	Tons	Tolls			
Athipet										575	15020¼	3755 1 4				6	6	1 8	581	15026¼	3756 9
Arumbaukum				77	1475	368 12	135	2779	694 12							17	71	17 12	229	4325	1081 4
Armagon																4	51	12 12	4	51	12 12
Boomarpaulam	4	72	18	117	2160	540	90	1830	457 8				1	6	1 8	56	273¾	68 7	270	4341¾	1085 7
Coromandel	1	4	1	76	351½	91 10	25	610½	152 10							123	212¾	53 3	225	1178¾	298 7
Cutlah Shubunvettah	102	2440¼	610 1	328	8419¾	2104 13							1	5	1 4	71	546¼	136 11	502	11411¼	2852 13
Canjee							2	8	2				1	4	1	5	19	4 12	8	31	7 12
Chinnamanagary Cil																24	46	11 8	24	46	11 8
Collom							210	1091¼	272 13										210	1091¼	272 13
Chunam Colum	1	5	1				28	228	57							5	29	7 4	34	262	65 8
Colangy							10	84	21										10	84	21
Caundoorpilly							64	192	48							2	9	2 4	66	201	50 4
Calivanel							3	21	5 4										3	21	5 4
Chittavaroorpum				1	3	12	1	3	12										2	6	1 8
Coryamoy																2	8	2	2	8	2
Carnodoi																1	3	12	1	3	12
Duggarazpatam	3	56	14										16	321	80 4	166	1518¾	379 11	185	1895¾	473 15
Ennore							77	141	35 4	339	7995	1998 12	1	5	1 4	222	263	65 12	639	8404	2101
Ellore	170	3694¾	923 11	99	2403¾	600 15							18	432¼	108 1	11	106	26 8	298	6636¾	1659 3
Ellavoor							145	2304	576							1	5	1 4	146	2309	577 4
Jetium	1	22	5 8				393	7319¼	1829 13							19	64	16	413	7405¼	1851 5
Kareewetteloor							199	3997¼	999 5										199	3997¼	999 5
Kimoorpaulam													2	45	11 4	18	139	34 12	20	184	46
	282	6294	1573 8	702	14827½	3706 14	1480	20588¼	5147 1	914	23015¼	5753 13	40	818¼	204 9	753	3371	842 12	4171	68914¼	17228 9

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Names of Villages	[illegible] Boats	Tons	Toll	[illegible] Boats	Tons	Toll	Shell Boats	Tons	Toll	Salt Boats	Tons	Toll	Grain Boats	Tons	Toll	Miscellaneous Produce Boats	Tons	Toll	Total Reg Boats	Tons	Amount of toll paid in [illegible]
B/fd	282	[illegible]	[illegible]	702	[illegible]	[illegible]	1510	[illegible]	[illegible]	914	23015¼	5753 13	40	818¼	204 9	753	3371	842 12	4171	68941½	17228 9
Kongoly																5	85	21 4	5	85	21 4
Mathoopaulaim							61	850	212 8							5	28	7	66	878	219 8
Mangodee													1	3	12	12	31	7 12	13	34	8 8
Moonapaulium	1	28	7													16	43¾	10 13	17	71¾	17 13
Mattalatillee																3	49	12 4	3	49	12 4
Naccathoorovoo																3	44	11	3	44	11
Ariah Samoodrum							103	816	204										103	816	204
Otthiladoo	1	4½	10 5																1	4½	10 5
Parumbaukum	2	54	13 8																2	54	13 8
Pulicat				4	37	9 4	65	294	73 8				25	118	29 8	1964	2592	648	2058	3041	760 4
Puzothevankum							6	99	24 12	403	7957	1989 4				24	27	6 12	433	8083	2020 12
Pumbly																8	23	5 12	8	23	5 12
Poniy Coopum	13	337½	84 7	334	8070½	2017 9										2	27	6 12	349	8435	2108 12
Parmadoo							7	123	30 12							1	5	1 4	8	128	32
Ramapurram	2	47	11 12	22	492	123	45	912	228							9	86	21 8	78	1537	384 4
Royavaroo Cundy	15	376½	94 2	3	77	19 4										8	96	24	26	549½	137 6
Rasiyapaulium							16	268	67							1	3	12	17	271	67 12
Shawvin Coopum																56	58	14 8	56	58	14 8
Tavia Coopum	134	2523¾	630 15	296	6874	1718 8							3	19	4 12	106	1293¾	323 7	539	10710½	2677 10
Shanthoopettay													2	57	14 4	9	173¾	43 7	11	230¾	57 11
Vullour										510	12446	3111 8							510	12446	3111 8
Voyaloor										398	8301½	2075 7				1	1	4	399	8302½	2075 11
Vanadoo				4	84	21	4	70	17 8							3	19	4 12	11	173	43 4
Yellapulavankum	130	3249½	812	64	1664	416							11	247	61 12	75	97	24 4	220	5257½	1314
Yaranavoor																4	4	1	4	4	1
Total	580	12951½	3237 11	1429	32125¾	8031 7	[illegible]	24010½	[illegible] 1	2225	51720	12930	82	1262¾	315 9	3808	8156¼	2039 3	9111	132236½	32559 2

The several villages on the banks of the Canal and the respective productions of each transmitted to the Board at Madras are here enumerated. It is observed in comparing this Return with the one for the previous year that the Stations from which there has been a large augmentation of Traffic are Beemarpollium, Cullair, Doorgarazpatam, Silloor, Itchum, Pondy, Coopum, Tusta, Coopum, Voyallore and Gollagalaroonahum, while that from Althupollt, Arrumbaukum, Cuchet, Steeharricottah, Ennore and Tirthapollum has materially diminished.

The traffic on the new Cut, since the Canal was opened to Doorgarazpatam, has been gradually improving, and amounted last year to 573 Boats and 3673 tons, or respectively 283 and 2251 in excess of 1857/58, and more than treble what it was in 1856/57.

Table D.

Table D.

List of Boats which carry Produce on the Northern Branch of the E. C. Canal.

Tonnage of Boats	Number of Boats of each kind	Total Tonnage of each kind	Increase on the Official year 1858/59	
			Boats	Tons
I	169	169	27	27
II	11	22	1	2
III	16	48	"	"
VI	10	40	3	12
V	13	65	2	10
VI	8	48	1	6
VII	16	112	1	7
VIII	3	24	"	"
IX	4	36	2	18
X	3	30	"	"
XI	4	44	2	22
XII	1	12	"	"
XIII	4	52	"	"
XIV	4	56	"	"
XV	7	105	1	15
XVI	33	528	1	16
XVII	16	272	1	17
XVIII	27	486	1	18
XIX	35	665	2	38
XX	22	440	"	"
XXI	21	441	"	"
XXII	16	352	"	"
XXIII	24	552	3	69
XXIV	15	360	1	24
XXV	13	325	3	75
XXVI	35	910	3	78
XXVII	27	729	5	135
XXVIII	22	616	2	56
XXIX	20	580	8	232
XXX	10	300	1	30
XXXI	4	124	1	31
XXXII	7	224	3	96
XXXIII	4	132	2	66
XXXIV	"	"	"	"
XXXV	1	35	1	35
Total	625	8934	78	1135

While the increase of Boats in 1857-58 over the preceding year was only 56 representing 859 Tons, the above Statement shows during last year an addition of 78 Boats and 1135 Tons. Besides this the largest size Boat before 30th April 1858 was a 33 Tons and of these only 2, whereas by 30th April 1859, 2 others of that Tonnage and one of 35 Tons had been constructed.—

Table E.

Statement showing the additional Toll levied on Boats exceeding 10 feet in breadth which are launched on the [illegible] Canal since Octr 1858

	Months	No. of Boats	Total Tonnage	Amount of Toll under one anna per ton	Remarks
				£ | s. d	
1858	October	2	53	3 5 "	
	November	5	79	4 15 "	
	December	10	276	17 4 "	
1859	January	15	418	26 2 "	
	February	19	496	31 " "	
	March	21	547	34 3 "	
	April	56	1,510	94 6 "	
	Total	123	3379	211 3 "	

[illegible] 6th Septr/58 No 1815

This table shows the Amount realized under the additional Toll of one Anna per ton, levied from all Boats launched since October last of a greater breadth of Beam than 10 feet. This Toll however has subsequently been removed.

[illegible] June 3/59 No [illegible]

Table F

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Table F.

Detailed Account of the Receipts and Disbursements during the Year 1858/59

Receipts

Months	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Total	[illegible]
1858 May	587	6761	1672 4 "	366	3500	2127 " "	917	15209	3502 4 "
June	436	2310	725 "	547	2447½	2077	833	11077½	2759 1 "
July	576	4941	1150 4 "	500	1212 6	2031 8 "	676	14567	[illegible]
Augt	635	6111	1527 12 "	677	2829	2022 " "	4111	[illegible]	[illegible]
Septr	690	7527	1531 12 "	1200	2577	6497 " "	774	[illegible]	[illegible]
Octr	686	7252½	2213 4 "	11	2007	[illegible]	[illegible]	[illegible]	[illegible]
Nov	378	4221	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Decr	629	1596	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1859 Janry	570	16827	4720 10 "	50	457	[illegible]	741	[illegible]	[illegible]
Feby	501	7901	1550 4 "	400	720	200 " "	550	[illegible]	2001 "
March	577	4772¼	1697 7 "				577	4772¾	1697 1 "
April	669	7575	1143 4 "	220	2035½	1277 2 "	889	12914½	5240 6 "
Total	6886	78516½	16929 2 "	2225	8470	12930 " "	9111	130236½	32589 2 "

Expenditure

Months	Toll Office Establishment	Toll Office Contingent	Lock Establishment	Lock Contingent	[illegible]	Total
1858 May	167 " "	2 10 "	37 " "	2 13 6	903 3 10	1112 11 4
June	167 " "	2 10 "	37 " "	2 13 6	1232 5 1	1444 12 7
July	167 " "	2 [illegible] "	37 " "	2 13 6	1034 15 4	1244 " 10
August	167 " "	5 2 6	37 " "	2 13 6	330 2 7	545 5 7
September	167 " "	2 13 "	37 " "	1 3 6	212 9 3	420 15 2
October	167 " "	2 13 "	31 " "	1 12 5	524 " 9	526 8 "
November	167 " "	2 13 "	37 " "	1 12 "	189 14 7	398 7 7
December	167 " "	8 11 3	37 " "	1 13 "	37 11 5	302 3 8
1859 January	167 " "	2 13 "	37 " "	1 12 "	172 10 11	399 2 11
February	167 " "	20 9 "	37 " "	1 10 3	592 3 6	608 6 6
March	167 " "	2 13 "	37 " "	1 10 3	461 3 [illegible]	704 8 6
April	167 " "	6 10 9	37 " "	1 10 3	576 8 4	788 6 4
Total	2004 " "	75 12 6	438 " "	24 12 6	5950 " "	8492 10 "

Thos

This [illegible] the [illegible] of [illegible] the [illegible] Officer [illegible] that [illegible] the [illegible] Lock [illegible] the [illegible] 8360 [illegible] done in April 1858 [illegible] April 1859 [illegible] accounts for the [illegible] that [illegible] and the [illegible] 3 [illegible] Commenced [illegible] large [illegible] four months [illegible] 1859.

The disbursements in account of the E. C. Canal during the past year are also shown in the foregoing Table, so that the [illegible] may be as compleat as possible.—

[illegible]

124 Statement of the Traffic shewing the Number of Boats & Rafts passing thro' the Eastern Coast Canal

Months	Grain		other agricultural produce		Salt		Lime and Chelacho-nam		Firewood		other Goods		Empty Boats	Total	Passenger Boats	Pattele Boats	Gramasit Boats	Total	Grand total No of Boats	Rafts of Timber		Rafts of Bamboo		Total Rafts		Total Value
	Boats	Value	Boats	Value	Boats	Value	Boats	Value	Boats	Value	Boats	Value								No	Value	No	Value	No	Value	
1858																										
May	1	140	12	4400	360	53120	140	4050	184	15134	63	2736	8	768	179	"	"	179	947	"	"	"	"	"	"	179580
June	"	"	15	9400	397	73280	71	990	102	7427	63	3744	5	653	180	"	"	180	833	1	150	"	"	1	150	194991
July	1	312	14	5600	500	218280	171	2130	156	11893	47	2484	6	895	181	"	"	181	1076	"	"	"	"	"	"	240699
Augt	3	1555	28	16300	379	167880	192	3300	171	18629	54	2318	11	838	176	"	"	176	1014	1	100	"	"	1	100	205080
Septr	3	2444	20	11600	124	46810	213	4710	183	16037	83	3192	8	634	160	"	"	160	794	"	"	"	"	"	"	84593
October	11	10844	37	19650	11	3720	175	4570	241	22379	37	1884	3	515	102	"	"	102	617	"	"	"	"	"	"	63067
Novr	4	2494	37	19150	18	7080	80	1890	104	8897	40	3516	4	287	108	"	"	108	395	1	20	"	"	1	20	43047
Decr	14	8820	49	30650	92	35060	112	3060	208	18690	47	2676	13	536	194	"	"	194	730	1	20	"	"	1	20	95966
1859 Jany	29	14980	30	24100	80	32700	124	3750	168	16156	27	1704	2	460	194	"	"	194	654	"	"	"	"	"	"	93390
Feby	8	1350	12	8500	44	16560	127	3630	194	18158	48	2448	7	440	145	"	"	145	585	"	"	"	"	"	"	50646
March	5	1050	13	14300	"	"	144	3690	152	14658	59	1548	2	381	196	"		196	577	"	"	"	"	"	"	35246
April	1	87	12	6350	220	95880	234	5520	153	14007	31	1584	23	674	213	"	213	213	887	"	"	"	"	"	"	123428

Remarks

221

This Statement shows the Total monthly Traffic by the number of Boats and value of Goods conveyed upon the Eastern Coast Canal in the Official year 1858/59.

Upon comparing it with the previous years Return it is observed that in May, June, July, August and Dec/58 and January and February/59 there was a very large increase of Traffic over the corresponding months of the previous year amounting in aggregate value to Rupees 2,13,940 but on the other hand, in September, October and November 1858 Traffic fell off so much more than it had done in the same Months of 1857 and in March and April/59 it had not again increased to the same extent as in /58, that the Decrease during these periods surpassed considerably the very great Increase above mentioned as the following figures will show

Increase in the 7 Months	R 2,13,940
Decrease in the Remaining 5 Months	2,22,161
Leaving a deficiency of Rupees	5221

Total Value of Traffic
in 1857/8 R 11,20,944
" 1858/9 " 14,12,723
Decrease R 5221

i.e. the aggregate value of Goods conveyed in the E.C. Canal during 58/59 as compared with that of 57/58.

The failure in the single article of Salt noticed in the Remarks on the previous Table sufficiently explains this Result. Had the same value of that Commodity been transported during March & April/59, as was the case in these months of the preceding year, last year's Traffic, instead of being a Minus would have been Plus by the no inconsiderable sum of Rs 120,000.

It may also be mentioned that the value of Rafts in place of being Rs 5,180 as in /57-58 was last year only Rs 290.

125. With Reference to that portion of the Canal from the Adyar to Sadras no Tolls have as yet been levied upon its Traffic. Mr Kennedy has however been instructed to ascertain the particulars of Arrivals at the Wooden Bridge 2½ Miles from the Adyar River. The expenditure during last year in the repairs of this part of the E.C. Canal amounted to Rs 4,533.

North Arcot.

126. In this District the expence of last year amounts to Rupees 1,79,905, against Rupees 2,17,553, of 1857/58. The Items in 1858/59 are,

	New Work	Repairs
Irrigation Works	26,343,	38,711,
Communications	47,742,	57,569,
Buildings	2,518.	7,022.
Rupees	76,603	1,03,302

127. In the first of the Branches the only new work that calls for notice is the Palar Annicut, as upon it nearly the whole (Rupees 23,969) of the outlay was incurred. The Bridge piers have been raised on an average to the height of 4 feet, and various Channels have been opened.

128. Of the expenditure on Communications, the Chief portion was upon the Bridge over the Palar on the line between Vellore and the Railway. Upon this Rupees 30,401 were spent last year, but the Parapet Walls and part of the flooring remained to be completed, 14 Arches having been built last year. In

its unfinished state the very heavy and important traffic of that road has passed along it since September last, without the occurrence of a single accident, the loss of one bullock excepted, and the Parapets have since been erected.

129. The road from Gooriattum to Pullicondah and Palmanair is the one on which the next largest outlay (Rupees 12,360) has taken place. The approaches of a tunnel, the plastering of the Tapoor Bridge, and 33 yards of the Causeway are all that are wanting to complete it. On the line from Wallajahnugger to Banaverum, Rupees 2,915 were spent, the Roadway is finished, except the Metalling, and on the seven miles of the Vellore and Arnee Road, made last year, Rupees 1,403 were expended.

130. As the buildings do not call for any remarks, the Repairs that have been executed in the District will now be considered. In Irrigation works, the Cauverypauk Tank and its supplying Channel, the Govindravady and Dannel Channels have been the principal ones under repair, and they were all put in good order. The sanctioned allowance

however was not wholly expended.

131. With reference to the Roads, the amount Sanctioned for their repair was not availed of to the full extent. Trunk Road No. 1 is in good order, and the line from Pullicondah to Palmanair from that line has been much improved by the erection of parapets on the ghat, by the steep gradients being reduced, and the narrow parts widened. When some repairs are executed, it will be a preferable road to the one by Mooghee. Trunk Road No. 10, requires a larger Annual allowance, and Metal laid down on that part of it which, during the Monsoon, gets into a very bad state. The Traffic on this line has increased enormously since the Railway was pushed on to Gooriattum, and the Palar Bridge opened; but the very reverse has been the result of this, as regards Trunk Road No. 1.

132. The requirements of the District are principally roads to act as Feeders to the Railway, and by means of which increased facilities for traffic will be afforded to Brinjarries and others. Some are already partially made, but require metalling, and

bridges to complete them. In irrigation works, the Palar, Poiney, and Cheyaur Annicuts, with their works, should be finished as soon as possible.

133. The operations in the Railway have caused the price of labor and materials to rise very much, workmen had to be procured from neighbouring Districts at advanced rates of wages, and Madras had to be resorted to for the latter commodity, the cost of which was of course much increased by the Charge for Carriage. The prevalence of Fever in the hilly parts of this District, and also the small number of laborers, cause works to hang long on hand..

South Arcot.

134. In South Arcot the expenditure during 1858/59 was Rupees 1,59,656, not differing very widely in the aggregate from the previous years (Rupees 1,52,525,) but the same ratio is not found in the respective outlays on new works and repairs in those years, not half the amount expended on the former class in 1857-58 was spent upon it during last year, while that upon repairs exceeded the previous years outlay by nearly Rupees 60,000. The following is the Analysis of the past years operations.

	New Works —	Repairs. —
Irrigation Works	7,190.	80,426.
Communications	6,183.	60,849.
Buildings	2,697.	2,311.
Rupees	16,070.	1,43,586.

135 The very small sum expended on new works may be accounted for by the operation of the restrictive orders, which at the commencement of the year were in full force, and continued so throughout, with trifling modifications. Still however last year was a peculiarly favorable one and a large revenue will be the result..

Rs 6,750,
Rs 440.

136. The only Items of the Irrigation expenditure were the Calingulah at the North end of the Permal Tank and the Sluice across the Valavanoor Surplus Channel - These works were at the beginning of 1858/59 under restrictions, but subsequently exempted. The Calingulah was fixed in May but not completed by the end of last year, as its progress

was much retarded by the want of materials, the sanction of exemption not having been received till after the close of the season for making [illegible]. Besides this the heavy [illegible] in November [illegible]ed the [illegible] Tank, and one of the [illegible] of the [illegible] was completely [illegible] rebuilt by the end of April and [illegible] remained to be done. It was too near the close of the Official year before the [illegible] was completed for any thing to be done upon it except the collection of materials.

137 Of Communications the [illegible] Bridge and Cuddalore Harbour works alone call for remark. Upon the former Rupees 2320 were expended in building and plastering the parapet walls. The structure as originally designed, was almost finished when the River altered its course during the late Floods, and as it now bears even more obliquely than formerly upon it, some additions and alterations are necessary, which will cause the Estimate to be exceeded. The operations for opening a better passage between Cuddalore Harbour and the Sea were successfully carried out last year, the Balance of the Estimate having been expended upon them. During the November floods the channel became partially silled up and its banks were breached, but, as the bar remained stationary, it will now be cleaned, the cost being [illegible] the Annual Sanction for that purpose of Rupees 1,000.

138 The extensive repairs in the District have with few exceptions, been satisfactorily executed. Those upon Irrigation Works, for which Rupees 75,800 were originally sanctioned, were mostly of an ordinary character. The Embankments in the Southern Talooks however suffered such an amount of damage by the Floods in November that a further grant of Rupees 14,000 was made for their restoration.

Fully

139. Fully two years ago the Roads in South Arcot, were divided into Main and District Roads— the one set maintained by Government, and the other constructed and kept in order by the local fund. For the former class the annual provision is Rupees 52,780, besides the sum [illegible] Grants aggregating Rupees [illegible], were last year made specially for repairing Breaches in the line to the [illegible] Combaconum caused by the floods of the Vellaur and [illegible] in November. The outlay, accordingly of upwards of Rupees 60,000 in 1858/59 has effected a marked improvement in the Communications of South Arcot. Three Superintendents have been employed to look after the expenditure of the District Road fund, out of which also they were remunerated, and the country has benefitted largely by the sum laid out, Viz.t Rupees 25,460, upon 23 Roads.

From

140. From Special Funds the Choultrum near the Vellaur Anneicut, commenced in the preceding year, has been completed. Schoolhouses have also been built at Villapoorum and Virdachellum, towards which Government Contributed Rupees 1600, and Rupees 1127 Respectively.

141. Nearly all the works that are required to render the Communications of the District perfect, have been sanctioned, but are owing to the state of the finances of the Country, under restriction.

142. The practice of executing works by Contract has been introduced in this District, and nearly all

all the Repairs to Irrigation works have been done in that way - the Executive Agents of the Collector making the payments, keeping their Books at the same time in strict accordance with the Departmental form. The pernicious system of giving advances to Contractors from which arose the reciprocal one of presents, have been strenuously opposed by the District Engineer, seconded by Mr Wright and Mr Brosnahan, and with a successful issue in the Ranges of these Subordinates, the latter of whom states that, to him grievances are not more than names, and then only by those who do not intend to execute the work.

143. The Native Revenue Officials in this District render no assistance whatever to the P.W.D. which fortunately does not stand in much need of their aid. —

Tanjore 144 In this most important District the Expenditure during the past Official year amounted to the very large sum of Rs 5,36,735 being much more than double what was spent in 1857-58 (Rupees 2,22,619-). While the outlay on new works during last year was less than half what it was in the previous one that on repairs was nearly triple.

The particulars of the Expenditure of 1858-59 are.

	New Works	Repairs
Irrigation Works	5606	4,56,698
Communications	9,762	53,472
Buildings	2,176	9,021
Rupees	17,544	Rs 5,19,191

145 Before proceeding to consider the very heavy sums Expended on Repairs, the most important of the few Items of new works will be noticed.

146 In the Irrigation works the only one that need be mentioned is the improvement of the Irrigation Drainage connected with the Tulnoyer Cotagum. On this Rupees 4509 were

spent last year and with the irrigation of a small portion of the [illegible] [illegible] it is limited. Until however this valuable work be fully completed the adjacent lands cannot reap the benefit to be derived from it.

147 Of communications the Extension of the Lower Coleroon Anicut and the construction of a Bridge across it on Trunk Road No 9, together with the operations at the Port of Tranquebar alone merit remark. On the former Rupees 4,871 were expended last year, and the metalling of the road over the north branch is all that remains to be done — On the improvement of the Sea groynes at Tranquebar, the outlay was Rupees 520,- Nos 1. 2. 5. 6. & 7 have been extended as follows Nos 1 & 2 have had 12 & 24 feet respectively added to them, while the latter three have been lengthened 30 feet each. Nos 3 & 4 have been strengthened. Operations upon all of them are still in progress.

148 The heavy Expenditure upon repairs, to Irrigation works more

particularly

particularly, was caused by the devastation inflicted upon this District by the hurricanes which visited it in October and November 1858 — The larger rivers already swollen by the mountain torrents from the western ghats, and increased in their course by the local rains, burst their banks, roads were cut up, minor Embankments vanished, and the smaller irrigating and surplus channels were choked — In November however the greatest amount of injury was done, for then much of the country was inundated — whole villages were under water, and a loss in human life, cattle, and property to a large Extent, was the result — Bridges also and other masonry works gave way, of which the following were of most moment.

The upper anicut breach 312½ feet and 8 arches

The 5 Arch Bridge across the Vellyaur at Valengaumy

Aqueduct

[illegible] at [illegible] road
[illegible]
Surplus Weir at Nagoody
[illegible] Calingulah in the
[illegible] River
The Bridge of 2 Vents on road
(No. 36) from Negapatam to
Tranquebar.

and

The Jetty at Negapatam, 127 feet
of which were destroyed.

The fact that Rupees 3,45,877 were expended during the last 7 months in executing repairs will also give an idea of the damage done by the Storms.

149 Before these events took place, the only operations on hand were the few new works free from restriction, and the repairs in the District generally – Subsequently however the whole Staff of the Public Works Department were fully employed in making good the injuries sustained by the various classes of works. In this they were assisted by the Revenue Department, to which was entrusted in the first place the repairing of the Breaches in the River Banks and Irrigation works, but subsequently the communications, – the Department of Public Works undertaking the restoration of Embankments and masonry works.

150. Operations were pushed forward with such alacrity, in spite of delays caused by the Pullars being engaged during a great part of February and March in reaping an unusually large "amany" harvest, that great hopes were entertained of the early completion of repairs. These however were disappointed by the disastrous 4 days hurricane in the end of April

(23d to 27th) which again submerged a portion of the district, but still comparatively speaking little damage, which vouches for the satisfactory progress made, and the efficient execution of repairs. The injuries were confined to the opening of some of the old Breaches, the loss of building material, besides damage done to the minor Channels and some of the Roads.

Cultivation

Cultivation however, it was anticipated, would not suffer by this calamity as the more important Irrigation Works (except those already mentioned) were in good order, and the repairs that were necessary would before these be sufficiently advanced, should no unforeseen occurrence take place.

151 The District Engineer submits a long list of sanctioned works, now under the restrictive orders which he requests may be exempted for execution, as they are necessary for the development of the resources of Tanjore. He considers that the New Department has won the confidence of the people and can perform whatever it is called upon to do, adducing in support of this the fact of the before mentioned large outlay in the cou of the last 7 months, of which Rupees 117,653 were expended in April alone.

152. Its prospects for the future he also thinks are shown to be most encouraging by the Expenditure during the past year of upwards of 5½ lacs, when the Department was numerically weak. But one or two matters require to be attended to in order that operations may not be unduly hindered. These are - The discontinuance of the removal of Officers and Subordinates from District to District; and also the employment of temporary Subordinates. The Establishment of a Small

Cause Court in the Mofussil, or the conferment of similar powers on the Assistant Collector, where, or before whom, Contractors and others receiving advances may be sued for non-fulfilment of Contract, and recovery of money advanced - and a system of supervision to check the cultivation of the Pudoogay, the cutting through of Embankments and other encroachments by Meraſsidars &c.

153. As the last named is a very serious grievance a few words regarding it may not be out of place. The cultivation of the Pudoogay which the Meraſsidars claim as their own is under the River and Channel Banks which rest upon that land very insecure as in doing so, these people plough and cut away the very slopes of the Banks. Another practice of these people is to make a cut through a River or Channel embankment to water their garden or plot of nunjah land, as the channel which ought to supply it has become choked at the head from not being cleared out. For the purpose of irrigating his own little bit of land a Meraſsidar often erects a temporary Dam acroſs a channel, and never thinks of removing it after he is served, which naturally leads to the course becoming silted up, either there or at some other place. These matters will be taken in hand and specially reported upon.

154. One matter more which will add very greatly to the welfare of this District remains to be

be noticed viz. The introduction of Free labor. This, which will prove of incalculable value, will it is confidently expected ere long be brought about by the instrumentality of the great Southern of India Railway Company, whose Civil Engineers report that their instructions are to procure their workmen without the intervention of any contractor. Should they succeed, by the inducement of constant employment with good pay in practicably exemplifying to the Pullars as has been done in Tinnevelly, that they are independent of the Meraſsidars in this respect, the result will be that the present baneful system will be extinguished, and instead of the degraded population now in the District, it will be occupied by free and wealthy inhabitants as a natural consequence, rates of labor and Materials will rise, but this consideration is of no moment in comparison with the liberation of the people from the yoke of slavery.

Trichinopoly 155. The Outlay in this District during the year ended 30th April last is nearly double that of the preceding one thus - in 1858/59 it was Rs 2,06,610
in 1857/58 ———— 1,52,340

The large increase is under the head of Repairs, the amount of which alone is more than half as much again the latter sum as will be seen from the following Abstract of 1858/59 Expenditure.

Irrigation.

	New Works	Repairs
Irrigation Works	24,731	169,165
Communications	6,788	53,693
Buildings	34,426	7,807
Rupees	65,945	Rs. 230,665

156. The causes of the small amount of Expenditure on New Works were the restrictive orders being still in force, and the heavy repairs necessary in Irrigation works and communications. But before entering upon this Branch of last year's operations, there are some of the New Works that require notice; and proceeding in the above order, the New Irrigation works will be briefly considered in the first place.

157. The Tunnel beneath the Muthyaur for conveying water from the Caleroon into the Ponairy channel and Tank. On this most difficult undertaking the outlay last year was Rupees 14,287, and after the operations has been frequently interrupted by freshes in the Muthyaur, the work was completed in October last, but was again seriously damaged by the floods of the Caleroon in that month and the succeeding one, notwithstanding the protection of earthbanks thrown up for that purpose.

On the Perovallay Channel, Rupees 4,705 were expended when the work was stopped owing to a substratum of granite being discovered, the excavation of which would be more costly than the anticipated

advantages

advantages warranted. A report upon this subject has been called for.

The Breach in the Wayacondaun Bank was closed on 5th October last at a cost of Rupees 2,056, but reopened by the heavy flood of April 1859. The extension of the Calingulah which might have saved this was not completed in time. The outlay on this was Rupees 2,414.

158. The Communications call for no Special remarks, but the most important Items of the Buildings may be mentioned.

The tiled portion of the European Infantry Barrack half completed ——— Outlay ——— Rs. 7,022.
Cavalry Hospital at Trichinopoly completed 26th February 1859 ——— Outlay ——— 4,983
Reconstructing 5 Ranges of Temporary Barracks completed 31st August 1858 ——— Outlay ——— 6,860
Erecting Canteen for the Artillery Barracks completed 23rd March 1859 ——— Outlay ——— 4,051.
Sick Horse Stables No. 9 Horse Field Battery. In progress ——— Outlay ——— 2,537

159. The repairs have been by far the most important and costly of the operations during last year, as they were repeatedly executed upon the

same works. The scarcity of Teakwood and other materials together with the difficulty of procuring carriage added much to their expense and impeded progress. They were rendered necessary by the 4 heavy floods which swept over this District during the past Official year; vizt. in the beginning of May 1858. in October and November last, and in the end of April 1859.

160. The 3 last were the most severe and the fall of rain during the past year was double that of 1857/58. The following is quantity that fell in the Storms.

Of May 1858 ——— 10.7
October 1858 ——— 10.
November 1858 ——— 0.7
April 1859 (from 25th to 27th) ——— 11.35.

161. In November the Cauvery was 7 feet 3 inches higher than it had ever been known to be, the embankments gave way, and long breaches appeared in the banks of the Main river. The flood spread over the country for miles, and in Trichinopoly the water was 6 feet deep beside the wall of the old burial ground

162. The further effects of the inundation may be glanced at. The bridge over the Iyaur on the road to Salem was utterly destroyed as also the

the protective Embankment to the Laulgoody Tank. This caused the submersion of the low land and the loss of the Bridge over the Coolyaur, together with the Trunk Road in the valley of the Coleroon. The Madura and Tanjore Roads were seriously damaged, and of the Dindegul road in the valley of the Coyaur scarcely a trace remains. Irrigation channels did not escape - the large ones were breached and the smaller ones choked, - in some instances entirely buried.

163. Had it not been for the hurricane of November, the state of the District would in all probability have been prosperous, as by the great exertions of the Revenue and Public Works Departments, there was every promise of a good crop after the freshes of May, and even when the Cauvery rose in October, a quarter of a foot above any of its previous known levels, there seemed to be no great cause for any apprehension.

The Progress here has been very unsatisfactory -

Bridge over the Ambrawelly - Expenditure Rupees 3942.-

The structure suffered from the Floods in April 1858, - 4 unfinished arches being swept away.-

Part of Road between Battagamtale and Pullyakully - Expenditure Rupees 2523 -

No Superintendence was available for this line during the latter half of 1858/59 - progress anything but satisfactory.-

169 On the Paumben Channel, Rupees 12797 have been expended, and that valuable communication (at present under Captain Brine's Superintendence), is now available for laden vessels of 200 tons, with a draught of 11 feet; while 5 years ago craft of more than 80 tons had to discharge part of their Cargo before they Could go through the Passage. Its depth across the Reef is now on an average 12½ feet and its width there is 100 feet and through the Sand Bank the Channel is 12 feet deep and 110 feet wide, 68,414 Cubic feet of sand and Stone having been removed from the former & 6,43,420 Cubic feet of sand & mud from the latter in the Course of last year. During 1858/59 however the Traffic through it has fallen off in Comparison

Comparison with the year previous for which two reasons are ascribed by Captain Brine viz. the losses sustained by wreck and damage to vessels during the gales of May and November 1858, - and the failure of the Crops in Tanjore, in Consequence of which no freight Could be obtained at the Seaports of that District -

The respective returns of Tonnage passing through the Channel, and Government Share of Dues in 1857-58 and 1858-59 are as follows.

	Tonnage	Dues
1857-58	187,912	Rupees 11692
1858-59	138,341	9031
	49,571	Rupees 2661

Dues	8516
Hire of Warps & grapnels	515
	9031

170 The following Table shows the various Classes of vessels which used the Paumben Channel in the Course of last year, and the Amount realized for Pilotage and the use of Warps and grapnels. Government receiving 3/4ths of the former and the whole of the Hire for the latter. -

Statement

164. The last gale (April 1859) stopped the operations in progress and ~~caused~~ some injury to Works, so that the attention of the Department in year 1859/60 will be very much engrossed in furthering the repairs commenced and putting the Irrigation works in such a state of efficiency as will enable the cultivation of the country to be advantageously undertaken. With reference to this, the District Engineer reports that proper regulation of the drainage falling into the Weyacondaun is urgently required. a powerful discharging Sluice near the Pooloor Calingulah appears to him to be most speedy means of putting it in order.

165. The District stands woefully in need of good roads, to Salem, Madura, Combaconum, Lalgoody &ca. The Trunk Roads to Madras and Caroor are in progress.

In

Madura

166. In Madura the expenditure of 1858-59. Rupees 93,684 exceeded Considerably that of the previous year (Rupees 80,288), and this excess has been on new works. The different Items of Outlay last year are.

	New Works.	Repairs
Irrigation works	1,936	39,401
Communications	34,589	13,868
Buildings	1,948	1,942
	Rupees 38,473	Rupees 55,211

167. Of the new works, those under Communications alone Call for remark. Of the Sum Specified as expended thereon, Rupees 21,792 were on Roads and Bridges, and the Balance upon the Paumben Channel.

168. The principal operations in the former were.

Road from Madura to Dindigul Expenditure Rupees 9,840.

This made fair Progress until the removal of the Subordinate to another District in December last, since which time no work has been done. Had he Continued in Charge, the line would have been Completely finished before the end of the Official year.

Road from Dindigul to Trichinopoly Expenditure Rupees 3,504.

The Progress here has been very unsatisfactory-

Bridge over the Ambravilly- Expenditure Rupees 3942.-

The structure suffered from the Floods in April 1858,- 4 unfinished arches being swept away.-

Part of Road between Buttaguvilah and Pullapully- Expenditure Rupees 2523 -

No Superintendence was available for this line during the latter half of 1858/59 - progress any thing but satisfactory.-

169. On the Paumben Channel, Rupees 12797 have been expended, and that valuable Communication (at present under Captain Brines Superintendence), is now available for laden vessels of 200 tons, with a draught of 11 feet; while 5 years ago. Craft of more than 80 tons had to discharge part of their Cargo before they Could go through the Passage. Its depth across the Reef is now on an average 12½ feet and its width there is 100 feet and through the Sand Bank the Channel is 12 feet deep and 110 feet wide. 68,414 Cubic feet of sand and Stone having been removed from the former & 6,43,420 Cubic feet of Sand & mud from the latter in the Course of last year. During 1858/59 however the Traffic through it has fallen off in

Comparison

Comparison with the year previous for which two reasons are ascribed by Captain Brine vizt: the losses sustained by wreck and damage to vessels during the gales of May and November 1858,- and, the failure of the Crops in Tanjore, in Consequence of which no freight Could be obtained at the Seaports of that District.-

The respective returns of Tonnage passing, through the Channel, and Government Share of Dues in 1857-58 and 1858-59 are as follows.

Dues -	8516
Hire of Warps & grapnels	515
	9031

	Tonnage	Dues.
1857-58	187,912	Rupees 11692
1858-59	138,341	9031
	49,571	Rupees 2661

170. The following Table shows the various Classes of vessels which used the Paumben Channel in the Course of last year, and the Amount realized for Pilotage and the use of Warps and grapnels. Government receiving 3/4 ths of the former and the whole of the Hire for the latter.-

Statement

Statement shewing the Number of Vessels and Pilotage &ca from 1st May 1858 up to 31st April 1859.

Months	Steamers	Barques	Brigs	Schrs	Dhonies	Boats	No. of Vessels	Total Tonnage	Govt 3/4 Share	Pilots 1/4 Share	Total Amount	Hire at Rs 1 each Warps	Hire at Rs 1 each Grapnels	Amount of Total W. & G.
1858.														
May	·	9	46	11	23	"	89	7.933	390 13 6	130 4 6	521 2 "	14	6	20 " "
June	1	19	75	27	23	-	145	13.776	915 9 9	305 3 3	1220 13 "	74	37	111 " "
July	"	14	104	31	30	1	180	15.775	972 " "	322 12 "	1294 12 "	31	26	57 " "
August	2	11	108	29	28	2	180	15.549	975 13 6	325 4 6	1301 2 "	31	18	49 " "
September	2	4	76	26	30	2	140	11.160	734 10 9	244 14 3	979 9 "	19	22	41 " "
October	"	4	67	37	58	5	171	12.091	796 1 3	265 5 9	1061 7 "	21	11	32 " "
November	"	1	54	23	92	5	175	11.875	655 8 9	218 8 3	874 1 "	29	16	45 " "
December	"	·	19	11	23	1	54	8.744	217 8 "	72 8 "	290 " "	13	4	17 " "
January 1859	"	"	30	15	97	2	144	8.591	500 2 6	166 11 6	666 14 "	52	21	73 " "
February	"	2	52	24	84	"	162	11.254	710 10 "	236 14 "	947 8 "	42	20	62 " "
March	"	4	50	26	127	15	222	13.473	850 14 "	283 10 "	1134 8 "	1	1	2 " "
April	1	7	53	28	94	4	187	13.120	795 14 3	265 4 9	1061 3 "	3	3	6 " "
Total	6	75	734	288	709	37	1849	138.341	8515 10 3	2837 4 9	11352 15 "	330	185	515 " "

171 The heavy amount of Repairs upon Irrigation works was caused by no fewer than 570 breaches having been made in them during the last North East monsoon. All were however made good without loss of time, and the requisite supply of water furnished to the crops.-

172 The damage done to Roads was also serious-5 very important lines suffering much from the rains- The repairs have been very limited as no maintenance allowance was sanctioned for this District, but for the restoration of the roads above referred to, a separate grant of Rs 25,000 was made on 18th March last.- Ex: Min Con: No 338.

173 The exceedingly unsatisfactory progress in operations last year arose from the paucity of Officers and upper Subordinates, compared with the requirements of the District, preventing that supervision from being exercised, which is absolutely necessary over the majority of the Sub Overseers in Madura, who are

not equal to the charge of important duties.

174. In this District the outlay last Tinnevelly year was Rupees 90521 - that upon Repairs being nearly 8/9th of the whole, and more than the entire expenditure of 1857-58 — Rupees 77729-/ as is seen from the following Statement - - -

	New Works	Repairs
Irrigation Works - -	924 - - -	51454
Communications - - -	6621 - - -	25650
Buildings - - -	2779 - - -	3073
	Rupees 10324	Rupees 80177

175. The small amount expended on new works may be accounted for by the restrictive orders being in force, the delay to operations caused by heavy rain at the commencement of the Official year. And to many of the Executive being for a time unable to attend to duty from attacks of Fever, which raged throughout the District. -

176 The only new operations worth mentioning are -

The Tuticorin Beach Road completed 19th April 1859, Rupees 3315 -

Numbecaum Bridge - Bridge finished - approaches nearly so - - - - Rupees 1865

Travellers' Bungalow at Palamcottah " - 1235

Hoozoor Treasury - - - - - - - - - - " - 1325

177. For the Repairs of Tinnevelly the District Engineer applied to Government for grants of Rupees 20,000 on account of the Roads, and Rupees 28,000 on account of the Irrigation, both in addition to the Original Sum sanctioned for expenditure of every description Rupees 72,680 - The first named Sum was sanctioned at once, but of the latter only Rupees 12,000 after a long correspondence, and when it was too late in the season to commence the general repairs necessary - The emergent masonry works had however been previously executed from the unexpended Balance of the Original and first Supplemental grants, so that as far as was possible satisfactory repairs have been executed - The expenditure of Rupees 25,601 upon the

Roads however has scarcely been sufficient to effect the repairs most urgently needed, some of the lines are in a very bad state, and a large sum will be required to put them in order. Road No. 10 particularly calls for a considerable expenditure, as its importance, being continuation of the high road from Madras to Travancore, demands that it should not only be rendered passable (which now it scarcely is in many parts) but be made perfectly unexceptionable. The Cotton Roads are in very good condition but their value is much lessened by their not extending to the Sea Port. The tract between their terminating point and Tuticorin, being entirely Sand, the traffic is very much impeded. An Estimate for completing the road over this tract has been received.

178. The generality of the native Revenue Subordinates, and the Tehseeldars, almost to a man, are still intensely prejudiced against the new Department, and consequently operations do not progress at the pace they ought. The conduct of many of the Sub

Overseers

Overseers also tends to the same result. For their men, from the numerical weakness of the Department in higher Officials, have in many cases to disburse Pay to the Coolies, and those of the Brahmin and Soodra Castes, deeming it beneath their dignity to place the money in the Pullar's hand, throw on the ground at a distance in front of themselves, what *they* consider due to him, thus neither giving the Pullar any explanation of the amount paid, nor an opportunity of remonstrating were he disposed. The consequence of course is that these Sub Overseers experience the greatest difficulty in procuring voluntary labor, as these poor creatures prefer to earn in peace at their own villages a bare subsistence, rather than take the chance of more profitable employment with the treatment above described. On this subject a reference has been made to the District Engineer.

Coimbatore 179. In this District the outlay on Public Works last year amounted to Rupees 94,393, of which the following are the particulars.—

	N. Works	Repairs
Irrigation Works -	none -	24,156
Communications - -	1,622	33,111
Buildings -	4,432	3,137
	Rupees 7,551	Rupees 70,422

180. In consequence of the Public orders, the expenditure on new works was very limited, and in Irrigation works confined to the improvement and extension of the Calingarayan Channel, the Bund of which has been made nearly strong enough to carry down a full supply of water.—

181. The principal communications on hand were - The Bridge over the Annamallay at Marchnaickenpolliem - and the new trace into Malabar - The reconstruction of the former, which fell in April 1858, was commenced in October last, and has progressed favorably - a sum of Rupees 4,166 having been spent upon it - The arches however, instead of being semi-elliptical as the original ones were, are segmental, that form being better adapted when first rate materials, and workmanship are not to be had - The line into Malabar has now been entirely traced, the expenditure last year upon it was Rupees 5,029. The operations on the Vylanthavalan Bridge and the Hasanoor Ghaut are not in that state of forwardness which they ought to have reached. The contractors were to blame with reference to the first - and the work has been taken out of their hands, while the unhealthiness of the locality affected the progress of the latter, which will be a very valuable and important line of Communication with Mysore, when opened.—

182. The conservatory in the Public Gardens at Ootacamund has been finished at an expenditure last year of Rupees 1,478 making the total cost Rupees 5,542, and the improvements on the School House at Coimbatore have been completed.—

183. The Repairs also in consequence

of the petitions, was limited to what was required to preserve existing works, and maintain the Revenue at its ordinary figure. The Irrigation works and Communications were all seriously damaged by the very heavy floods in the Ambravutty, Unnamally, Bhowany, Cauvery &c — These rivers, overflowing their banks, breached some anicuts and washed away others swept over the Paddy lands carrying all before them, destroyed the heads of channels and breached Tank bunds. Portions of the roads were also washed away, while in other parts, (such as the two principal Ghats leading to the Neilgherries) they were rendered impassable by landslips, or from being blocked up by masses of rock detached from the hill sides by the rain, which also in some instances carried away the retaining walls. The Bridges did not suffer material damage.

184. Good order was quickly being restored when the storm of 26th 27th and 28th April 1859 burst over the

District

District, and in a great measure undid all the repairs that had been effected, more particularly in the eastern and north eastern parts of the District, where the worst of the hurricane fell. The rain-fall on this occasion noted at Ootacamund was 15 and at Coonoor 30 inches.

185. The requirements of the District consist of the improvement of roads, and the addition of new lines particularly in Collegal Range, a tract of country of nearly 2000 sq miles at an elevation of from 2000 to 4000 feet remarkable for the production of silk and possessing, a rich, deep, well watered soil, admirably adapted for the cultivation of every kind of grain. To connect this part of the District with the Railway by a road with cross lines, say from Collegal to the Station at Erode would be most advantageous and as the Hassanoor Ghat in its lower part lies in the South corner of it, a branch road from it might also be constructed to open it up

Still further - In this tract are the remains of innumerable irrigation works, and the inhabitants point to them in sorrow as shewing that at a former period it was not so neglected as now.-

186. Besides roads Coimbatore stands much in need of Annicuts, Tanks and Channels, or of large reservoirs, whereby the water poured into the lowlands by the rivers rising in the hills may be turned from being the instrument of destruction, into one of unspeakable benefit to the District.- For these works would provide the means of checking the uncontrolled rush, which in time of rain at present sweeps over the country carrying desolation, and enable the land to be irrigated during the dry weather, thereby securing the crops. The District Engineer has observed that large reservoirs would be easily constructed in the valleys of the Bhowany, Moyaur, Ambravutty, and the streams which have their source in the Annamalays, and the places he alludes to in these

Valleys

Valleys are by nature suited for that purpose. The restoration, which could be effected at a small cost, of the various Tanks &c. throughout the District would advance its prosperity very much.

187. The condition of the European Stations upon the Neilgherries demands instant attention and improvement. Ootacamund — especially, where the drainage is very deficient.- This could be remedied to a great extent, if the Lake were improved by a weir at its lower end, and a Bridge under the Willow Bund. Coonoor and Kotagherry, though in less degrees, need rectifying also in this matter.-

188. In connection with the management of this District the separation of the charge of the magnificent and costly work - the European Barracks at Jackatalla - from the control of the District Engineer is the principal event of note during the past year. This was in terms of Government order of 17th August 1858.- No 1647

While

189. While in 1857-58 the expenditure in Salem was Rupees 198,18[illegible], during last year, it amounted to Rupees [illegible], the Items of which are

Salem

	[illegible]	Rupees
Irrigation Works - -	2,782	35,005
Communications - - -	11,539	33,602
Buildings	42,193	5,068
	Rupees - 56,514	Rupees 73,675

190 The items of outlay in Communications and buildings (new works) alone call for any notice, and these will be briefly detailed, and state of the work mentioned with the expenditure during last year.

191 In communications they are

The Road from Yercaud to Railway Station at Mullapooram - expenditure Rupees 5,225

In order to complete this Road the unexpended Balance of the Estimate was exempted from restriction - in the following month operations were recommenced, and a line fit for cart traffic having

Ex. Min. Con. No. 1516 - 11th Augt. 1858.

an

an average width of 4 yards, has been nearly finished to Addyvaram ¼ of a mile from the base of the Shevaroy Hills -

The Road between the Town and Railway station of Vaniembaddy with the requisite alterations on Trunk Road No. 1. Expenditure Rupees 4,642.

Disputes regarding the compensation to be given for the very valuable land occupied by this line has delayed the progress of the first part of the work. Of the second part, about half has been accomplished. The whole will however be completed ere the Railway is open to that station -

The Bridge over the Hullaur at Naikondy - Expenditure Rupees 2263 -

This work was not fairly begun until January last, owing to the misconduct of the subordinate who first had charge of it. The two piers and flooring between them are however completed, and materials for the abutments have been collected.

192 The principal new Buildings which were on hand are -

The new Jail at Salem - Expenditure Rupees 25,253 -

This has progressed very well during last year. The three large blocks containing 27 cells each are now completed. One of the small ones (of which there are to be three, having 21 cells each) is nearly finished, and the remaining two well forward. The foundations of the Hospital Blocks have been finished, and the lower room of the main guard House almost ready for roofing.

The new Court Houses at Salem Expenditure Rupees 4,019 -

Of this Building with a frontage of 220 feet. The walls are now 13 feet high. The wood work is progressing and it is expected that by October next the structure will be finished.

The

The District Engineer's Office &c. Expenditure Rupees 472 -

This is expected to be completed shortly - as it is being roofed -

The new Sick Stables at the Hosoor Remount Depôt - Expenditure Rupees 1727 -

Owing to the want of Bricklayers and efficient superintendence, these Buildings, sanctioned by Ex: Min: Con: Emergent No 2786 dated 23d December 1850 have unfortunately made little progress.

193. The heavy rains which prevailed in this District - as well as in Trichinopoly and elsewhere - rendered extensive Repairs to the Irrigation works and Communications necessary, and consequently the outlay upon this Branch of Public Works was much larger than last year, which was a season of great drought.

The

194. The outlay in Canara on [illegible] during the official year 1856-57 has been Rupees 39,811, or nearly 50% advance upon that of the foregoing year (Rupees 26,552) the increase being about the same in both Branches of expenditure. The following are the details of last year's operations.

	New works	Repairs
Communications	15,822	2,606
Buildings	10,055	11,326
	Rupees 25,877	Rupees 13,932

195. The most important item of Communications is the valuable line between Honore and Coompta, which was completely restored in December last with efficiency and promptitude by Lieutenant Dreier at a cost of Rupees 8,688, during last year, while the others

deserving

deserving of mention are, – the operations on the Gairsuppah Ghaut, which are nearly finished – Rupees 2697 having been laid out on them – and the metalling of the Sumpajeh Ghaut, whereon Rupees 4409 were expended – but Cholera having broken out on the Coffee Estates adjacent to this line the workmen fled, and even when the visitation had subsided they came forward in such small numbers that very little progress was made.

196. Of the Buildings, the only one that calls for a few remarks is the Barracks at Sircy. Upon their construction much care was bestowed by Lieutenant Dreier, who also executed the work with great expedition, whereby its usefulness

was much enhanced - The Barracks were completed on 31st July 1858, and from that month till February 1859, they were occupied by a Detachment of the 66th Regiment, who, during their stay suffered very little from sickness, a proof of the excellent manner in which the work was performed - The good service done by the early completion of these Barracks consisted in saving the troops from being exposed under Canvas during the monsoon -

197. Besides the special cause which delayed the metalling of the Sumpajih Ghaut, the duration of the monsoon for two months beyond the usual time, retarded generally all operations in Canara during the past year -

198. Of the sum expended on the Repairs of Communications

Rupees

Rupees 27,773 were laid out upon the Dharwar and Compta Road, and the result is, that it is now in first rate order - By the judicious allowance sanctioned by Government, the District Engineer is enabled to have organized bands of labourers, who reside along the line, for the purpose of maintaining it in its present efficient condition -

199 Trunk Road No. II has benefitted much by the repairs executed upon it - though a good deal, in the way of draining it, still remains to be done - The annual sanction for Trunk Road No. III is insufficient to effect all that is required upon it - The Arbyle Road and others, which are maintained out of the Road circuit sanctions, (formerly Rupees 38,000 and last year Rupees 15,000 only,) now only partially repaired,

will, unless ~~the~~ Original Amount be again allotted to them, revert to ~~the~~ same deplorable condition in which they were at the commencement of the past year.

200. Of all the works that would be calculated to advance the prosperity of the District, ~~the~~ the following may be enumerated. The Tuddry and Coomptah Canal, which besides being a part of the projected Coast Canal, would be of great benefit to the cotton merchants. ~~the~~ The Bhutkal Harbour, with lines of communications from it to Dharwar and other places

Malabar 201. While during the Official Year 1857/58 the expenditure in Malabar was Rupees 60,533, in that now under review it amounted to Rupees 1,13,708, (independently of the cost of Ferry Fund Works Rupees 13,597, and the sum paid to Ferry men as compensation Rupees 6,162) or not very much leſs than double. The Items of this outlay are.

	New Works.	Repairs.
Irrigation Works	"	1019.
Communications	53,171.	31,669.
Buildings	11,625.	16,224.
	Rupees 64,796.	Rs. 48,912.

202. The largest sum in the expenditure on communications was Rupees 19,738 on the Timber Truſs Bridge over the Irrity, which would have been completed before the close of last year, had sickneſs not driven away the laborers. It was however very nearly finished.

203. The Road from Calicut to Palghat, on which Rupees 13,298 were expended, next demands attention. This line will be completed (with the exception of the Bridges) in the course of another year. The earth work is finished as far as Malliapooram, and will be metalled and completed with Tunnels after the monsoon.

204. On the Pramboddy Ghaut and Road (Trunk Road No. 4) the outlay last year was Rs. 9,536. The Ghaut and a few miles of the Road have been

metalled and the former can now be traversed by Bandies during the Monsoon.

205. The trace of the Tambrachary Ghat, for which Government sanctioned Rupees 10,000, is now being made into a road 8 feet wide, Sappers aiding in the work. Rupees 4,576 were laid out upon it in the past year, and the line, 3 miles at the foot of the Ghat, and about 2 miles at and near the top of it, have been finished. The natural difficulties of the line are being overcome, and the Sappers will it is confidently expected be successful in blasting the harder species of granite that will be met with. As this is believed to be the easiest line for traffic, the prosecution of the undertaking, until a perfect road is constructed, is of first moment, as then Wynaad will be in direct communication with the Port of Calicut, and Mysore will possess the same advantage.

G. M. C. No. 1300 7th July 1857.

206. Rupees 3256 were laid out on the Cholakul and Poovoor Road with satisfactory result, as, with the exception of a small portion, it has been opened out.

207. In Buildings the largest outlay on one work was Rupees 2,228 on the Paling round the European Cantonment at Malliapooram, which has been nearly finished. The other Items do not require to be separately noticed. The Elephant Shed, Reading Room

Room &c.a at the above Station and other Military Buildings at Cannanore Cochin &c.a have all progressed favorably.

208. The repairs upon Communications have been extensive. 400 miles of roads, 150 Bridges and 22 miles of Canals having undergone repair. The last Season was a very wet one even for Malabar. The rains, which had extended far into the Month of November, recommenced in March and continued during the most of April. They proved fatal to the completion during last year (as had been expected) of the Nerugumpully Bridge, three of the Arches of which, in course of being turned, were destroyed by the rising of that river.

209. The progress of operations in this District is much retarded by the feverish nature of most of the localities where Roads and Bridges are situated. The workmen are very apprehensive, and so prejudiced against these places that at times, though sickness is not prevalent, they can scarcely be induced to work, no matter what amount of pay is offered to them.

210. The rates of Wages and Materials in Malabar have been much increased by the great demand for all descriptions made by the Madras Railway, which between Beypoor and Coimbatore passes through no fewer than 4 Talooks of the District in its Centre and Southern Divisions. That undertaking however is

being pushed forward with great vigor; so that the influence it exerts in impeding Public Works, as well as in increasing their cost cannot be of long continuance.

Madras.

211. The Public Works at the Presidency during the year under report were placed under the Superintendence of Officers, respectively designated, The Civil Architect at the Presidency, and The Garrison Engineer of Fort Saint George. The first named had charge of all Civil Buildings &c. at Madras, and to the latter, in his capacity of an Officer in the Department of Public Works, were entrusted the whole of the Buildings within Fort Saint George; also the lines at Vepery and Perambore, together with the Gun Carriage, and Minie Bullet Manufactories; but the works outside the Fort have since been transferred to the Civil Architect.

212. The aggregate Expenditure of these Officers during last year amounted to Rupees 3,36,600 against Rupees 2,36,325 of 1857/58; but instead of the great disparity between the outlay by each, which in the previous year amounted to rather more than half a lac, the Expenditure of the two Branches approximated to within Rupees 2000.

213. The following is a Statement of the sums laid out during the year under review by

	The Civil Archt.	The G. Engineer.
On New Works	96,246	101875
On Repairs	73021	65458
Rupees	160267	Rs. 167333

The

The principal Items of each will now be considered.

214. The Civil Architect's Expenditure may however be further subdivided, thus.

	New Works.	Repairs.
Irrigation Works	2,662	5,397
Communications	20,564	14,219
Buildings	73020	53405
	96246	73021

and his most important operations are the following.

The purchase of ground and Buildings for the extension of the New Road from the South Beach near the Chepauk Palace to Triplicane High Road. Completed in April 1859	16,194
Extending 4 Cross Drains and widening the Metalled Portion of the Island road between the Government and Wallajah Bridges. Completed in September 1858	3,134
Making the requisite alterations and additions for rendering the Penitentiary a Secure Jail for Madras. Nearly completed	2,329
Erecting 4 flanking Towers or Bastions of Pentagonal Shape at the Angles of the Penitentiary. completed in December 1858	3,321
Erecting a long Verandah in front of the Jail Ward adding two upstair ranges of European cells and raising 4 Night Guard Rooms. Under execution	6,042

Fixing Water Trunks on Exterior of several Government Buildings to prevent inconvenience to the Public by the discharge of rain water from the roof into the Streets. completed ——— 3,286

Erecting outer Compound Walls in West, South and South East sides of the Penitentiary - nearly completed ——— 9,092

Erecting a Quarter with Outhouses, complete, for the permanent residence of the Apothecary attached to the Penitentiary. Finished with the exception of the Paint Work ——— 5,555

Enlarging Copper cleaning Room at the Mint. completed ——— 2,060

Constructing an Upper Room over the Turner's Department at the Mint. completed ——— 2,550

Extending Stamping Room at the Mint. completed 4,700

The purchase of Ground for a New Burial Place for Mussulmen in Kistnampettah. Completed ——— 1,178

Extending 2 additional Male Wards with privies and Compound Walls attached, on South East of Leper Hospital. In progress ——— 5,154

215

Under the Garrison Engineer the annexed are the principal Works which have been on hand.

Rebuilding a portion of the Sea face of the Fortifications of Fort Saint George. South of the Flag Staff. Rs 10,815

Do ——— Do ——— North of the Flag Staff ——— 9,874

Rebuilding

Rebuilding part of North East Orellon demi Bastion on Sea face of Fortifications of Fort Saint George ——— 10,678

——— Do the Saint Thome Caponniere of the Fortifications of Fort Saint George ——— 3,632

In these sums, which amount in all to Rupees 34,999, are included an advance of Rupees 13,000 to the District Engineer of Malabar for the purchase of Piles, and Rupees 5,143 laid out on the Brickfield at Shadiencoopum, and the Cement Factory in course of Erection below the Basin of Cochrane's Canal.

The Estimated outturn of the Brickfield is stated at 4 lacs of extra sized, superior Bricks per Month.

Besides the above, other works deserve short notice such as

The Sea Custom House Sheds ——— 6,816

These are very nearly finished, and answer every purpose.

The Minie Bullet Factory which has been completed with the exception of rebuilding a small portion of the rampart Wall ——— 2,342

Constructing a Cistern, Lightning Conductor, Supdt's Office &ca. in the above Building ——— 5,654.

All nearly completed.

The Sheds near the "Boatmen's Gate" for the Stowage of Government Coal &c., for the Marine Depts. — 8,940.

With the exception of the Tramway from thence to Clive's Battery, which is in abeyance,+ this work is fully finished.

Ex. Minr. Consn. No. 1854 dated 9th September 1858.

The construction of the Gas works for lighting the European Barracks in Fort Saint George —— 5,562.

This was specially sanctioned by the Supreme Government and is progressing so rapidly that it will probably be finished by next September. The Barracks are to be furnished with 100 lights and sufficient Gas for 300 street lights in addition has been provided for. It is an experiment designed by Dr. Mayer who has examined and approved of all the details and plans. The expense is estimated at 3½ pice per light per night, an immense reduction from the cost of the present system which comes to nearly 11 pice.

Ex. Minr. Consn. No. 1808 dated 4th September 1858.

The Additional Buildings to the Government Office to accommodate a larger number of printing presses with their requisite machinery, and also for the accommodation of the Telegraph Department.

The full sanction of Rupees 10,570 for the execution of this work has not been required it having been completed for Rs. 10,349.

Bangalore.

216. The Expenditure by the Special Executive Engineer at this Station during 1858/59 amounted

amounted to Rupees 1,21,279 while that of the preceding year was only Rupees 95,759. The amount spent in repairs last year was more than 13 times as much as in the year before. The Analysis of the outlay is

	New Works.	Repairs.
Communications	302.	6,000
Buildings	100,377	14,600.
Rupees	100,679.	Rs. 20,600.

217. The sum of Rupees 302 under the Head of New Communications was devoted to marking out the New Cantonment and Planting Trees.

218. Of the very large sum expended on New Buildings the whole (with the exception of Rupees 214 on Mootcherry Church) has been laid out upon Military Works which will now be enumerated with remarks as to the progress made.

Married Men's Quarters in the Old Dragoon Barrack Square —— Expenditure Rupees 17,911

Sixty Quarters in Progress 20 of which are nearly completed; of other 16 the walls are well up and part of the Verandahs roofed - of the remaining 24 the foundations are laid. It is hoped that by September all will be finished.

European Horse Artillery Barracks —— 9,244

2 Blocks completed during last year.

Old Dragoon Barracks —— 25,309

Five ranges complete - two in hand.

New Dragoon Barracks __________ 2,0010

After one range had been completed and seven more were in progress, the work was stopped at the beginning of the best part of the Working Season, whereas, had this not occurred the work would have been far advanced

Ex: Mins: Cons: No 118 dated 17th Jany 1859. (D. W. E: Military)

Color Serjeant's Quarters __________ Rupees 2,030

As these are built upon the site of the old ones, only one block can be on hand at a time. The walls of 16 Quarters are nearly finished with the foundations and Basements of other 16 laid

Armourer Serjeant's Quarters __________ Rupees 7,000

Three fourths complete

Wash Houses to Ranges 5 and 6, Old Dragoon Barracks, [illegible]84

Drains thereto __________ 1,498

Four of the Wash Houses are finished, and 2 in progress. The Main Drain and a covered one completed.

Staff Serjeants (Nat: Light Cav.y) Quarters ____ Rs 3,850

With the exception of the Compound Wall which is still unbuilt, these are finished.

Staff Officers' Offices __________ Rupees 6,431

The Offices of the Dy. Assistant Quarter Master and Adjutant General are nearly finished, while the Ground floor of the Paymaster's Office is up and covered in.

219. The Repairs to Communications, effected by means of the Annual Allowance of Rupees 6,000 granted by Government, have caused a very marked improvement in the Roads of this Cantonment.

Ex: Mins: Cons: No 1382 dated 16th July 1858.

220. The Repairs to buildings, Costing Rupees 4,433, were rendered necessary by the very heavy Monsoon which caused every house in Bangalore to leak. All however have been put in thorough order.—

221. The great demand for Timber last Year occasioned the introduction of a large quantity of green wood into the works, requiring increased strength in section to be given to rafters. On observing this, the Executive Engineer took upon himself the responsibility of laying in a large stock to Season, and reports that at the close of the Official Year under review he had fully Rupees 10000 worth in the Yards.—

222. The prices of Brick and Chunam have increased very much, and will likely rise still higher as the Railway approaches Bangalore, the Branch line to which will soon be commenced.—

223. That obnoxious System of advances, which prevailed here prior to Captain Mayne's arrival, has given way before his steady refusal

to grant them, aided by an plan of regular weekly payments, which he has instituted.—

224 Jackatalla

Upon the Barracks for the accommodation of European Soldiers now in course of erection at this station, the sum of Rupees 3,05,725 was laid out during 1858/59, (about Rupees 12,000 under the expenditure in the preceding Year,) of which the following are the particulars.—

On New Works —— Rupees 3,05,118.
— Repairs —— 607.

225. E. M. C. No. 1147. 17th August 1858.

During the past Year the Officer in Charge of this undertaking has been exempted from the control of the District Engineer of Coimbatore, and is now responsible to the Central Office direct, under the designation of "Special Executive Engineer," as laid down in Circular Order Book Page 583. para 15.—

226

In Moodoomallay wood a great loss is reported during the past Year, but as means have been adopted for rectifying some of the causes which led to it, a similar occurrence will it is hoped not again take place. Amongst the Cattle also there has

has been both great mortality, and a number of accidents - 27½ pairs of Bullocks died in the course of the Year, and 29 pairs were rendered unfit for hard labor.—

227

The very severe storm of rain which swept over Jackatalla on 26th to 29th April last did a great deal of damage to the Buildings, and occasioned the loss of 11 Lacs of unburnt Bricks, valued at from Rupees 4,000 to Rupees 5,000.—

228. E. M. C. No. 790. 1st February 1859.

A Special Report upon the cost and Progress of the Works in connection with these Barracks was called for by Government from Lieutenant Colonel Lawford, who arrived at Jackatalla for the purpose of instituting the necessary enquiries upon the 11th of March — That Officer's investigation was not concluded prior to the close of the past Official Year, but since then his Report containing full details of what has been accomplished, what still remains to be done, and the difficulties with which the Executive Officers have had to contend in prosecuting the work - together with

Statements shewing the cost of labor and Materials at that elevated station, has been submitted to Government — This however did not form part of the operations during the Year under review —

229. The Wages of Cooly as well as skilled labor have risen very much in the Course of 1858/59 with the universal demand for Workmen, both by private individuals and public Companies, and this has not only increased the cost of operations, but has also to a very considerable extent retarded their progress.

The

Report of Audit of Bills for Public Works Expenditure in the Chief Engineer's Office from 1st May 1858. to 30th April 1859.-

Districts	Bills remaining on the 1st May 1858		Bills received during the Official Year 1858/59		Total		Bills passed by the Chief Engineer		Bills recommended to Government		Bills objected to and returned		Total		Bills remaining on the 1st May 1859		Remarks
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Ganjam	279	1,50,682 4 3	198	1,31,358 13 5	477	2,82,041 1 8	475	2,84,449 1 9	3	1130 8 10	-	15 6 6	478	2,85,595 1 1			The variations between the totals of Columns 7 and 15 is owing chiefly to revised Bills to the extent of 2 lacs and upwards having been taken into account along with original Bills in Rajahmundry, and to several Bills having been sent for disposal to the Court of Wards, as explained in a Note to the Audit Report for November 1858.—
Vizagapatam	68	1,79,662 10 -	49	31,180 14 7	117	2,10,843 8 7	107	1,93,281 1 11	7	6341 8 3	2	6537 12 6	116	2,06,160 6 8			
Rajahmundry	385	15,66,186 3 7	303	3,25,330 5 4	689	[illegible]	840	14,59,792 12 9	9	2,34,092 1 10	12	1,99,734 9 4	861	18,93,619 7 11			
Masulipatam	177	3,24,253 7 9	444	1,99,007 13 6	621	5,23,261 5 3	619	5,12,512 10 4	-	-	3	23,067 8 9	622	5,35,580 3 1			
Guntoor	128	91,490 15 8	350	84,282 3 4	478	1,75,772 3 -	480	1,80,139 8 1	-	-	1	314 12 -	481	1,80,454 4 1			
Nellore	102	4,07,227 2 7	420	3,72,892 11 8	522	7,80,120 1 3	513	7,65,887 8 9	4	8234 7 4	-	3,082 8 5	517	7,77,204 8 6			
Cuddapah	168	3,87,503 5 8	435	1,34,265 7 11	603	5,21,768 13 7	580	5,07,412 12 7	10	6,615 6 5	14	7,380 12 10	604	5,21,408 15 10			
Bellary	252	3,93,900 3 7	358	2,31,384 4 11	610	6,25,284 8 6	579	5,74,170 8 9	6	35,640 2 7	22	52,002 13 8	607	6,61,873 9 -			
Canara	84	2,77,757 3 7	175	2,80,981 10 7	259	5,58,738 14 2	199	4,63,531 3 7	2	2,584 1 5	3	9,130 4 4	204	4,75,245 9 4			
Kurnool	37	15,698 5 7	83	2,21,943 4 -	120	2,37,641 9 8	112	2,35,000 - 3	4	1,746 11 8	5	5257 12 10	121	2,41,998 8 9			
North Arcot	415	3,72,346 14 6	404	3,01,654 - 5	819	6,74,000 14 11	798	6,22,339 13 3	6	11,805 11 11	17	40,357 4 2	821	6,74,502 13 4			
Chingleput	243	3,29,658 7 3	309	3,16,857 5 9	612	6,46,515 13 -	629	6,10,307 - -	10	8,197 12 11	5	27,519 15 7	644	6,46,024 10 6			
South Arcot	103	2,74,994 14 6	257	2,29,728 1 7	360	5,04,723 - 1	356	5,02,930 5 7	-	-	5	1551 4 -	361	5,04,481 9 7			
Salem	342	71,854 15 4	421	1,21,091 8 4	763	1,92,946 7 8	749	1,94,919 14 -	3	538 15 -	9	7038 5 2	761	2,02,497 2 2			
Trichinopoly	87	1,71,565 - 10	1354	3,19,114 1 8	1441	4,90,679 2 6	1389	4,64,140 10 10	-	-	52	25812 1 10	1441	4,89,952 12 8			
Tanjore	3	2,557 8 7	347	59,778 5 -	350	62,335 13 7	348	59,562 4 3	1	357 6 6	1	2480 2 5	350	62,399 13 2			
Malabar	111	1,20,430 - 5	125	1,20,475 1 8	236	2,40,905 2 1	212	1,89,259 15 4	4	3,021 14 6	13	40,141 7 9	229	2,32,423 5 7			
Coimbatore	285	6,10,568 14 9	324	4,33,829 4 10	609	10,44,398 3 7	544	8,57,311 5 6	33	63,893 6 9	31	95,780 6 3	608	10,16,985 2 6			
Madura	83	60,491 - 2	146	61,448 9 1	229	1,21,939 9 3	229	1,21,323 5 6	-	-	1	616 3 9	230	1,21,939 9 3			
Tinnevelly	41	1,46,598 1 5	48	89,596 4 1	89	2,36,194 5 6	73	1,76,339 1 7	-	-	8	13,159 7 9	81	1,89,498 9 4			
Civil Architect	211	1,81,998 4 7	201	1,31,236 15 -	412	3,13,235 3 7	194	1,80,005 6 6	196	1,05,634 6 7	12	2,686 5 11	402	2,88,326 3 -			
Eastern Coast Canal	4	20,783 5 2	7	18,047 8 11	11	38,830 14 1	11	38,829 12 1	-	-	-	1 2 -	11	38,830 14 1			
Mysore	46	79,292 5 7	38	21,246 10 5	84	1,00,539 - -	67	92,223 10 1	13	7159 11 6	6	1259 8 9	86	1,00,642 14 4			
Hyderabad	26	4,19,464 8 9	89	4,41,706 11 -	115	8,61,171 3 9	65	7,88,421 11 9	40	18,773 14 9	8	53,905 7 10	113	8,61,101 2 4			
Upper Godavery	4	11,173 2 10	-	-	4	11,173 2 10	4	11,491 - 5	-	-	-	-	4	11,491 - 5			
Garrison Engineer	48	19,805 - 4	160	1,57,166 11 8	208	1,76,971 12 -	127	1,55,960 2 10	79	20,462 8 1	-	-	206	1,85,422 10 11			
Saugor	1	38 6 11	-	-	1	38 6 11	1	38 6 11	-	-	-	-	1	38 6 11			
Miscellaneous Bills	-	-	53	22,844 11 10	53	22,844 11 10	47	21,925 12 3	1	240 - -	-	-	48	22,165 12 3			
Total	3734	66,67,986 14 2	7109	51,08,419 11 10	10,843	1,17,76,405 10 -	10,117	1,02,63,506 15 5	431	5,45,470 12 10	230	6,18,827 6 4	10,778	1,14,27,805 2 7			

Appendix No. I.

230 The accompanying Table of Remunerative works which will form a part of the Annual Progress Report is submitted now, in order that Rule 12 laid down by the Governor in Council in Extract Minutes Consultation No. 989. dated 17th June 1856. may be complied with. The continuance of the restrictive orders has prevented non-remunerative Works of any Magnitude from being commenced or prosecuted during the past Year -

231. With regard to the rates of labor, and Materials, beyond what is stated under the head of each District, whose Engineer reports upon the subject with reference to the operations of the past Year, I can add nothing, as the Report called for by Government upon this matter is still incomplete

Returns from the following Districts not having yet been received, although reminders have been repeatedly issued.

Form A. being Statement of Prices, has not been furnished up to this date from

Chingleput

North Arcot

Coimbatoor

Civil Architect

Bangalore and

Jackatallas

and Form B. Statement of Rates is also still wanting from all the above except Jackatallas. I may however here mention that an almost universal increase has taken place both in the Wages to Workmen, skilled and Cooly, and in the cost of all Materials necessary for the prosecution of Public Works.

Report

232 The foregoing Report of Audit of Bills for expenditure in this Department during the past year exhibits a very marked difference at its conclusion from its commencement. The Bills remaining on hand at 1st May 1858 amounted to Rupees 66,67,886-14-2 while on 30th April 1859 not a single Bill remained unaudited.

233 The following is a comparative view between the operations of last year and its predecessor, from which it is at once apparent that a very large increase has taken place in the number and amount of Bills passed by the Chief Engineer, and Recommended for the Sanction of Government, and at same time a very marked decrease in that of Bills Returned for Correction or explanation.

	Bills passed by Chief Engineer		Bills Recommended for Sanction of Govt.		Bills returned as objectionable	
	No.	amount	No.	amt.	No.	amt.
1857-58	2037	50,28,014-5-11	334	2,21,852-0-9	475	12,36,330-13-1
1858-59	1017	1,02,63,506-15-5	431	5,43,470-11-10	236	6,18,827-6-4

Statement.

234 Statements of the Issue of Surveying and mathematical Instruments Tools and Machinery to the various Districts during the past year accompany this Report. All Indents for Instruments and Tools have been passed at once and the articles supplied as they were called for. Upon the issue of Machinery, however, more cautious and guarded restriction was laid by Government until they were satisfied that each District was duly provided with sufficient means to cover and preserve it — consequently the amount furnished to the Districts has been very trifling.

Appendix No II

G. O. M. Cons. No 1864 7th Sept/55

235. I have now to wind up the Annual Report of the P. W. Departt for the Official year 1858/59 by submitting copy of a Report by Mr. L. Dunphy on the working and Cost of the Lithographic Press, attached to the Central Office, during that period.

Appendix No III

It will be observed that a Balance in favor of the Department of Rupees 776-7-- is shewn from the work of last year, / while the results of 1857/58 was a deficit of Rupees 2086-8-9 / and that the amount of work done during 1858/59 was of

Maps and other Drawings

No of Copies	48,319
" " impressions	46,624

Circulars, Forms &c.

No of Copies	155,221
" impressions	125,403

I have the honor to be
Sir
Your Most Obed Servant
J H [illegible] Lt Colonel
Chief Engineer

Fort Saint George
31st August 1859

G. Gray

Copy in a letter to Eq
d/ 10th February/60 No. 6

No. 16

P.W. 1859 Depart.
Pro. of Govt. 20th January/60
No. 2305

From
The Chief Engineer

To
The Secretary to Govnt.
D. P. W.

Dated 31st August 1859
Recd. 1st

No. 4436

Enclo. B

Submits the Annual Report of the D. P. W. for 1858-59.

P. 91 - 12th Jany/60

Central Office of P.W.
Fort Saint George
15th October 1859.

No. 6171.

From
The Chief Engineer
To
The Chief Secretary
to Government

Sir,

I have the honor to forward herewith the Statement of Charges on account of the Establishment of the Department Public Works for the past official year, as called for in your Memorandum per margin. No. 276 d/ 30th Septr./59.

2 In transmitting this Statement I would observe that the amount therein shewn differs from the sum stated in my Progress Report for 1858/59. the present Returns having been compiled as far as the Staff Pay and other Civil charges are concerned, from a Statement furnished to me by the Civil Auditor, the Military Pay being taken from the Accountant General's Statement which was the source from which I took the amount stated in my Progress Report as the Cost of Establishments. The difference I imagine arises principally from the Civil Auditor's Statement being

In Annual Progress Report ---1692070
In accompanying statement --1664788
- 27282

being that of all Bills passed for payment during last year, while the Accountant General's exhibits all sums actually paid during that period including arrears of Pay for the preceding year.–

3 Had the Accountant General's Statement shewn the Civil Pay and Allowances subdivided under the Heads which you wish to be specially mentioned, I should have adopted his figures, and so saved the above discrepancy, but as it does not contain that information I availed myself of the Civil Auditor's returns in order to comply with your request.–

4 In the accompanying Statement the percentage of Civil Pay and Allowances to the expenditure in each District is shewn, but the Military Pay is added in one sum at the end, as I do not possess the information necessary to enable me to apportion it among the Districts.

I have the honor to be,
Sir,
Your most Obed^t Servant,

Fort Saint George }
15 October 1859 }

J. H. Bell Lieut^t Colonel
Chief Engineer

To
The Chief Secretary
to Government.

[illegible]

Copy in a letter to Eo dy 10th Febeuary/60 No 6

Public Works Department
Pres: of Govt 20th January 1860.
2711.

From
The Chief Engineer
To
The Chief Secretary
to Government

Dated 10th } October 859.
Received 17th }

1 Enclo. No 6171

- Reply 7/17th Jany/60

Forwarding with estimates statement of charges on account of [illegible] for the [illegible] 1858-59.

No 17.

e 14 December 1861

Statement shewing the various Items of Charges on account of the Department of Public Works during 1858/59.

	Cost of Professional Establishment	Cost of Office establishment including Rent	Travelling Charges	Batta	Contingencies	Total	Expenditure upon New Works and Repairs	Percentage of charges to expenditure	Remarks.
Central Office	73964	77570	4397	2559	15306	173796			The Pay and allowances of the Mechanical Engr. are included in the Items under Central Office. In the Contingencies is included the Gratuity equal to 3 Months salary paid to Colonel C. E. Faber.
Do. Lithographic Press	"	23460	"	"	1838	25298			
Ganjam	✓ 28553	9482	8018	"	530	46583	1,12,855	41·276	In Professional Establishment is included Conservancy Establishment —— Rs. 732
Vizagapatam	15933	5398	4379	"	424	26134	38,821	67·319	
Godavery Division	✓ 1,14,733	18,017	19221	1917	1,212	1,55,100	412,529	37·597	In Professional Establishment are included Conservancy Establishment —— Rs. 4968 Irrigation Establishment —— 12993 Navigation —— 12063 Rupees 30024
Kistnah Division	✓ 80,220	16,634	16,992	50	486	114,382	2,25,471	50·730	In Professional Establishment are included Annicut Establishment —— Rs. 4704 Delta —— 11279 Rupees 15983
Nellore	✓ 32943	11,879	12,652	"	2,258	59732	3,55,371	16·808	In Professional Establishment is included Annicut Establishment —— Rs. 1056
Cuddapah	36722	11,711	12814	"	781	62028	148017	41·905	
Bellary	37,701	12,310	11,764	"	2,753	64528	272320	23·695	
Kurnool	16,208	5,980	5646	"	888	28,722	67,131	42·784	
Chingleput	✓ 31,207	8669	6,873	"	749	60,857	3,01,820	20·163	Charges in Chingleput —— Rs. 47,498 Do. Eastern Coast Canal —— 13,359 Rupees 60857
Eastern Coast Canal	8,687	2637	1,678	"	357				
North Arcot	✓ 49,818	11,489	9,654	"	411	71,372	1,79,905	39·672	In Professional Establishment are included Conservancy River Channel Establishment —— Rs. 742 Cheyaur Annicut —— 1091 Cauverypauk Tank & Channel —— 346 Doosamamundoor Channel —— 173 Rupees 2352
South Arcot	✓ 3,1832	10391	10,393	"	1,358	53974	1,59,656	33·806	In Professional Establishment is included [illegible] Establishment —— Rs. 1773
Tanjore	✓ 49,017	13768	14,054	18	1,683	78,540	5,36,735	14·632	In Professional Establishment is included [illegible] Establishment —— Rs. 5547
Trichinopoly	✓ 34,773	9496	8,398	"	834	53,501	2,96,610	18·037	In Professional Establishment are included Conservancy Establishment Lalgoody Channel —— Rs. 3833 Establishment for Clearing [illegible] Channels in different Talooks —— 1779 Rupees 5612
Madura	27,276	10,093	7,720	108	597	45,794	93,684	48·881	
Tinnevelly	28804	10,886	8,582	"	356	48628	90,521	53·720	
Coimbatore	41,013	11,094	7,904	241	613	60865	94,373	64·494	
Salem	22,650	8,017	8085	"	607	39,359	1,50,090	26·223	
Canara	29,330	9,844	9,355	"	1,118	49,647	95,211	52·144	
Malabar	24,652	7,255	6924	"	811	39,642	1,13,708	34·862	
Civil Architect	8403	9,044	68	"	1,766	19,281	1,69,267	11·39	
Garrison Engineer	9,246	9,144	5	"	321	18,716	1,67,333	11·184	
Bangalore	9,262	2,601	202	"	88	12,153	1,21,280	10·02	
Jackatalla	10,041	3,013	1,706	"	"	14,760	3,05,725	4·827	
	8,02,988	329,882	197,484	4,893	38,146	1423392	4508333	31·55	
Military Pay to Officers in the (D. P. W.)									
Superintendent of Stationery	2,13,232					2,13,202			[illegible]

			[illegible]	"	1,038	[illegible]	1,59,656	33.806	In Professional Establishment is included mara — Rs 1,773 Establishment
	[illegible]	13768	14,054	18	1,683	78,540	5,36,735	14.632	In Professional Establishment is included [illegible] In Professional — Rs 5,547 Establishment
Trichinopoly	34,773	9,496	8,398	"	834	53,501	2,96,610	18.037	In Professional Establishment are included conservancy Rs 3,838 Establishment Laulgoody channel Establishment for Conservancy [illegible] } 1779 Talooks — Rupees 6612
Madura	27,276	10,093	7,720	108	597	45,794	93,684	48.881	
Tinnevelly	28804	10,886	8,582	"	356	48628	93,521	53.720	
Coimbatore	41,013	11,094	7,904	241	613	60,865	94,373	64.494	
Salem	22,650	8,017	8,085	"	[illegible]	[illegible]	[illegible]	[illegible]	
Canara	29,330	9,844	9,355	"	1,118	49,647	95,211	52.144	
Malabar	24,652	7,255	6,924	"	811	39,642	1,13,708	34.862	
Civil Architect	8403	9,044	68	"	1,766	14,281	1,69,267	11.39	
Garrison Engineer	9,246	9,144	5	"	321	18,716	1,67,333	11.184	
Bangalore	9,262	2,601	202	"	88	12,153	1,21,280	10.02	
Jaulnah	10,041	3,013	1,706	"	"	14,760	3,05,725	4.827	
	8,52,988	3,29,882	1,97,484	4,893	38,146	14,23,392	45,08,333	31.55	
Military Pay to Officers in the D.P.W.	2,10,202	"	"	"	"	2,10,202			Debitable to D.P.W. per Government Notification in Official Gazette of 23 June 1857 Circular Order Book page 472.
Superintendent of Stationery	"	"	"	"	28,974	28,974			
Barrack Master - Fort Saint George	2220	"	"	"	"	2,220			
	10,65,410	3,29,882	1,97,484	4,893	67,119	16,64,788	45,08,333	36.926	

Central Office of P.W.
Fort Saint George
15th October 1859

J H Bell Lieut Colonel
Chief Engineer

Corrt

1859 Department
No.

Enclosure in a letter from the Chief Engineer to the Chief Secretary Government dated 15 October No. 6171

Copy in a letter to C. Dated 10th February 1860 No. 6.

P.W. 2714/59

Statement shewing the various Items of Charges on account of the Deptt of Public Works during 1858/59.-

PUBLIC WORKS DEPARTMENT.
Public.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following letters from the Chief Engineer.

(Here enter 31st August and 15th October 1859, Nos. 4436 and 2714.)

ORDER THEREON, 12th January 1860, No. 91.

Paragraph 1. The Chief Engineer lays before Government the usual annual report on the operations of the Public Works Department for the official year 1858-59.

2. The expenditure of the year amounted to Rupees 45,08,433 and was distributed among the different descriptions of works in the proportions shewn below.

	New works.	Repairs.	Total.
	Rs.	Rs.	Rs.
Irrigation works ...	2,72,422	19,22,764	21,95,186
Communications...	3,49,944	7,97,735	11,47,679
Buildings	8,93,645	2,71,923	11,65,568
Total......	15,16,011	29,92,422	45,08,433

3. The expenditure of 1858-59 exceeded the expenditure of the preceding year in the sum of Rupees 4,21,408.

1857-58 Rupees	40,87,025
1858-59 „	45,08,433
Increase in 1858-59......	4,21,408

4. The cost of superintendence, of office establishments, travelling and other charges incidental to the department as exhibited in the statement received with the Chief Engineer's letter of the 15th October was as follows:

	Rs.
Cost of professional establishment	10,65,410
Travelling charges	1,97,484
Cost of office establishment	3,29,882
Batta to do.	4,893
Contingent charges	67,119
Total......	16,64,788

Per centage of travelling charges to cost of professional establishment	19 per cent.
Per centage of batta to cost of office establishment	1½ „ „
Per centage of superintendence to expenditure on work performed	36 „ „

5. The cost of the establishment is swelled by the pay of the Mechanical Engineers, employed in this presidency in the care and management of dredges and other machinery, and not in the performance of the work included in the statement. These persons do not form a part of the Public Works establishment proper, and neither they nor the establishments maintained as conservancy &c. come within the term professional or can properly be included under that head. It is desirable that these and other similar items should be shewn separately in future annual statements.

Conservancy.
Anicut.
Channel
Navigation.
Delta.

IRRIGATION WORKS.

New works.

6. The largest expenditures on single new works were in the Godavári divison on account of the Weyairoo and Ellore channel Rupees 33,109; in the Kistna division on account of the canal opened to Nedamale Rupees 38,940; in the Nellore district on account of the re-construction of the Pennair anicut Rupees 51,327; and in North Arcot on account of the Palar anicut Rupees 23,969. The expenditure in the other districts being on works of less important character do not require special notice.

Repairs.

7. The large expenditure on repairs is ascribed to the violence of the monsoon and the consequent damage to many irrigation works and roads. In Tanjore and Trichino-

poly the expenditure on irrigation works amounted to Rupees 4,56,698 and 1,69,145 respectively; in the adjoining districts of Madura, Salem and South Arcot, it was Rupees 41,336; 55,005; and 80,426. In Nellore the repairs amounted to Rupees 2,37,913; in Cádápah 79,066; in Ballári 1,52,899; in Chingleput 97,409; and in Tinnevelly 51,454. In the Godavári and Kistna divisions the expenditure was Rupees 2,70,938 and 1,04,481 respectively. In the other districts it was limited.

8. The violent storms with which some of the southern districts were visited during the year under report account for a large increase in the outlay for repair of irrigation works, but it seems proper to direct the attention of the Chief Engineer to the large augmentation observable in this item since the establishment of the new Public Works Department.

9. The average expenditure on irrigation works and repairs in Tanjore in the 35 years closing with 1850-51 was on an average a little more than a lakh of Rupees,* that of the highest year (1850-51) being Rupees 1,73,395. In the year under review the expenditure for repairs amounted to four and a half lakhs of Rupees.

* Appendix 5 Public Works Commissioner's 1st report.

10. A similar result is found in other districts as will be seen from the subjoined statement extracted from the annual reports.

	Average of the five years to the close of 1850-51 taken from P. W. Commissioner's report.	Repairs in		
		1856-57	1857-58	1858-59
		Rs.	Rs.	Rs.
Nellore...	40,743	1,13,643	1,17,747	2,37,913
Cádápah...	23,245	33,900	35,122	79,066
Ballári...	52,695	53,493	80,182	1,52,899
Chingleput...	77,523	31,136	41,415	97,409
Trichinopoly...	74,136	1,22,606	76,681	1,69,145
Tanjore...	1,17,602	1,95,780	1,65,965	4,56,698

11. The Government are aware that there are valid reasons why the outlay on these repairs should have increased to some extent; in particular the inadequacy of the former outlay in most districts, and the consequent bad condition of the works; and the increase which has certainly taken place of late years in the cost of labour and of materials. The present observations are intended to call the attention of the Chief Engineer as well as of the Collectors to the necessity of watchful care to guard against a lavish and wasteful expenditure.

COMMUNICATIONS.

12. The sums laid out under this head comprize

	New works.	Repairs.	Total.
Roads and bridges..........	3,23,243	7,60,462	10,83,705
Navigable canals..............	7,813	28,057	35,870
Ports and harbours...........	18,888	4,857	23,745
Ferry boats......................	...	4,359	4,359
Total......	3,49,944	7,97,735	11,47,679

of these, it will be sufficient to notice the first. The expenditure on account of roads was large in each of the thirteen districts named in paragraph 13 of the Chief Engineer's report, the largest amount for repairs is Rupees 1,08,995 in Chingleput, which contains parts of several costly trunk roads. In Ballári, North and South Arcot, Trichinopoly, Canara, it was upwards of half a lakh in each; in the other districts it was below that amount, the smallest expenditure being Rupees 24,971 in Ganjam.

BUILDINGS.

13. The expenditure on buildings was chiefly on account of the military works at Jackatalla Rupees 3,05,118; Bangalore Rupees 1,00,163; and Madras 72,175. The expenditure for military buildings has also been large in the Godavári division, Ballári, Chingleput, and Trichinopoly.

14. The Government now proceed to notice, in the order of their arrangement, those parts of the report relating to works and projects of more than ordinary interest and importance.

Ganjam District.

15. This is a road of considerable importance and has formed the subject of correspondence with the India and Home Governments. According to the present report the tracing of the whole line has been completed and is now being cleared and widened; ten miles of jungle and two miles of ghát have also been rendered passable and Brinjáries and others are already using the road. A fuller account of the progress and prospects of this line was furnished in the Deputy Chief Engineer's letter of the 5th August 1859, No. 3508, and its accompaniments, and the orders passed upon it on the 26th idem will have informed the Chief Engineer of the willingness of Government to give consideration to an estimate for a second class road to Sunkarabole. It is only necessary to add that the expediency of continuing the road beyond the Madras frontier to Sohnpore has been represented to the Government of India.

Road from Russelkondah viâ Sunkarabole to Sohnpore, paragraph 29.

P. W. Despatch from Home Govt. 6th May 1859, No. 7. p. 5 c. 8.
Proceedings 29th June 1859, No 1593, p. 3.
From Deputy Chief Engineer, 5th August 1859, No. 3508.
Proceedings 26th August 1859, No 2043.
To Government of India, 26th August No 2044.
Despatch to Home Govt. 26th do „ 41.

Trunk road from Chicacole to Itchapoor.

16. The description given of the condition of this portion of the northern trunk road, is anything but satisfactory. It is not stated whether any remedial measures are about to be applied, if not the subject should receive attention at a proper opportunity.

Paragraph 34.

Godavári Division.

17. The account in paragraph 46 of the advantages obtained by the use of the patent brick-making machine is very satisfactory. The barracks at Dauléswarum were constructed with bricks manufactured with Ranson's patent machines, two of which it is stated turning out ten thousand a day were at work for four months manufacturing the bricks at a cost about the same as that of native manufacture viz. 9 annas a thousand.

Brick-making machines, paragraph 46.

18. Bricks manufactured at Jackatalla by machines, it is believed of a similar description, cost 8½ Rupees per thousand being nearly double that of the low country; but special circumstances were advanced to account for the increase. Still making allowance for all circumstances the Government cannot but think that the cost of the bricks manufactured at Dauléswarum is understated, and they would wish to receive further explanation on the subject in particular whether all items of cost are included.

Public Works 7th September 1859, No. 2151, paragraph 3.

19. The statements in paragraphs 55 @ 63 go far to prove the prosperous condition of the Rajahmundry district, attributable in a great measure to the large irrigating works in it. These have enabled the district to supply the deficiencies of the southern market, and it is represented, that no less a quantity than 24 lakhs of Bengal maunds of various kinds of grain have been exported, and that the canals afforded the means of cheap transit to the coast. The export and import trade have also largely increased and the traffic on the main lines of navigation is further evidence of prosperity. The extent of land irrigated, is set down at seven lakhs of acres, but no information is given as to the data on which this computation has been arrived at.

Paragraphs 55 @ 63.

Kistna Division.

20. The extension of irrigation consequent on the works executed in this division are shewn to have advanced the revenues of the two districts of Masulipatam and Guntúr.

Paragraph 70.

Chingleput District.

Cochrane's canal.

21. The traffic from the northward by Cochrane's canal for the year 1858-59 exhibits a slight increase in tonnage and tolls in comparison with that of the previous year, and a small decrease in the number of boats, or rather in the number of their trips.

	Boats.	Tons.	Tolls.	
			Rs.	A.
1857-58,	9,324	1,29,643	32,410	12
1858-59,	9,111	1,30,236½	32,559	2
Increase in tonnage and toll	......	593½	148	6
Decrease in boats	213	......	...	...

The chief items which contributed to the traffic of the year were the following:

	Boats.	Tons.	Tolls.	
			Rs.	A.
Chillies	173	2,181½	516	2
Charcoal	74	413¾	103	7
Firewood	1,429	32,125¾	8,031	7
Passenger boats	2,029	2,118	529	8
Paddy	71	1,163¼	290	13
Shells	1,784	24,008¼	6,002	1
Slatfish	252	1,008	252	0
Salt	2,225	51,720	12,930	0
Straw	31	365½	91	6
Tobacco	31	349	87	4
Turf	35	35	8	12
Wood	569	12,722¼	3,180	9
	8,703	1,28,213¼	32,053	5
Other commodities	408	2,023¼	505	13
Total......	9,111	1,30,236½	32,559	2

22. Comparing the traffic of 1858-59 with that of the previous, the following results appear.

Tons. Increase.	Increase in	Tolls.	
		Rs.	A.
Firewood	4,220¾	1,055	3
Paddy	539¼	134	13
Shells	866¼	216	9
Saltfish	539	134	12

Tons. Decrease.	Decrease in	Tolls.	
		Rs.	A.
Jungle sticks	153	38	4
Red-wood	422¾	105	11
Rafts of timber	163	40	12
Salt	2,865	716	4
Straw	158½	39	10
Tobacco	332	83	0
Wood	1,801¾	450	7

23. The number of boats plying on the canal in 1858-59 was 625 boats of the total tonnage of 8,934, being an increase of 78 boats and 1,135 tons.

24. The receipts and disbursements of the year on account of the canal are shewn in table F to be as follow:

Receipts in 1858-59.	Rs.	A.	P.	Rs.	A.	P.
Toll on miscellaneous produce... ...	19,629	2	0			
Do. salt... ...	12,930	0	0			
Total receipts Rupees......				32,559	2	0
Disbursements in 1858-59.						
Toll establishment...	2,004	0	0			
Contingencies...	75	13	6			
Lock establishment...	438	0	0			
Contingencies...	24	12	6			
Ordinary repairs...	5,950	0	0			
Total disbursements.........				8,492	10	0
Net Revenue...				24,066	8	0

Paragraphs 60-68 and 124.

25. The returns of traffic on the Godavári and Kistna channels and on the Eastern coast canal, which are to be found at the paragraphs of the report noted in the margin will be published in the official Gazette for general information.

Madura District.

Pamben channel, paragraphs 169-170.

26. The operations on the Pamben channel though costing little, have been very much to the advantage of the navigation. The channel is reported to be now practicable for laden vessels of 200 tons with a draught of eleven feet. Its depth across the reef is on an average 12½ feet and its width a hundred feet. Through the sand bank, the channel is twelve feet deep and 110 feet wide. The number of vessels which passed through the channel was 1,849.

Tinnevelly.

Paragraph 178.

27. The conduct of the Sub-Overseers towards the coolies mentioned in paragraph 178 has already come under the consideration of Government in Proceedings bearing date the 24th October 1859, No. 2499.

Audit of Bills in the Central Office.

Paragraphs 232-233.

From Commissioners on public establishments dated August 1858.
Proceedings 6th Nov. 1858, No. 2341.
Do. 1st Dec. " " 2581.

28. It appears from the report of the audit of bills preceding paragraph 232, that almost the whole of the bills remaining at the beginning of 1858-59 and received during that year had been finally disposed of by the Chief Engineer. Contrasted with the work performed in this branch in the year preceding, there is a large increase in favour of the operations of the year under review, but this was owing to the large accumulation and clearing off the arrears shewn in the correspondence noted in the margin which it is not necessary to notice in this place. The operations of 1858-59 are shewn below.

	No. of Bills.	Amount of Bills.
		Rs.
Bills remaining on the 1st May 1858 and received in 1858-59...	10,813	117,76,407
Bills passed by the Chief Engineer	10,117	102,63,507
Recommended to Government for sanction... ...	431	5,45,471
Bills objected to and returned...	230	6,18,827
Total.........	10,778	114,27,805

calculating the working days in the year at 300, the daily average of bills disposed of in the Central office is 33, or including all the bills investigated 36. Looking to the circumstances under which this amount of work has been got through, the Government would only express the hope that a sufficiently careful scrutiny of the bills has actually taken place.

Operations of the Lithographic Department.

29. The work performed in the Lithographic department between the 1st May 1858, and 30th April 1859, was as follows :

	Copies.	Impressions
Maps and drawings...	48,319	46,624
Circular forms &c.	1,55,221	1,25,403
	2,03,510	1,72,027

Ordered that 200 copies of the report and statements together with this review be printed for distribution.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary

To the Chief Engineer.

Exd. T. O'Connor.

Total 1516011	2992422	4508433

No. 91

P.W.D.

Proceedings of the Madras Government Under date the 12th January /60.

Read the following letters from the Chief Engineer.

(Here enter 31st Augt. and 15th October 1859 Nos. 4436 & 2714)

P.1. The Chief Engineer lays before Government the usual annual report on the operations of the Public works Departt. for the official year 1858-59.

2 The expenditure of the year amounted to Rupees 4,508,433 and was distributed among the different descriptions of work in the proportions shewn below.

	New works Rs	Repairs Rs	Total Rs
Irrigation works	2,72,422	19,22,764	21,95,186
Communications	3,49,944	7,97,735	11,47,679
Buildings	8,93,645	2,71,923	11,65,568
Total	1516011	2992422	4,508,433

3 The expenditure of 1858-59 exceeded the expenditure of the preceding year in the sum of Rupees 4,21,408.

1857-58 Rs	40,87,025
1858-59	45,08,433
Increase in 1858/59	4,21,408

4 The cost of superintendence, of Office establishments, travelling and other charges incidental to the department as exhibited in the Statement received with the Chief Engineer's letter of the 15th October was as follows.

Cost of professional establishment Rs	10,65,410
Of Travelling charges	1,97,484
Cost of Office establishment	3,29,882
Batta to Do	4,893
Contingent charges	67,119
Total	16,64,788

Per centage of travelling charges to cost of professional Establt.	19 per Cent
Per centage of Batta to cost of Office establishment	1½ "
Per centage of Superintendence to expenditure on work performed	36 "

5 The cost of the establishment is swelled

by

Conservancy
Annicut
Channel
Navigation
Delta

by the pay of the Mechanical Engineers, employed in this presidency in the care and management of dredges and other machinery, and not in the performance of the work included in the Statements. These persons do not form a part of the Public Works Establishment proper, and neither they nor the establishments maintained as conservancy &c: come within the term professional or can properly be included under that head. It is desirable that these and other similar items should be shewn separately in future annual statements.

New works

Irrigation works

6 The largest

expenditures on single new works were in the Godavari Division on account of the Wyairoo and Ellore channel Rupees 33,109; in the Kistnah Division on account of the canal opened to Nedamale Rupees 38,940; in the Nellore District on account of the reconstruction of the Pennair Anicut Rupees 57,327; and in North Arcot on account of the Palar anicut Rupees 23,969. The expenditure in the other districts being on works of less important character

do

The accounts of these
works have been completed
& have been previously
reported [illegible]

do not require special notice.

Repairs. 7. The large expenditure on repairs is ascribed to the violence of the monsoon and the consequent damage to many irrigation works and roads. In Tanjore and Trichinopoly the expenditure on irrigation works amounted to Rupees 4,56,698 and 1,69,145 respectively; in the adjoining Districts of Madura, Salem and South Arcot, it was Rupees 41,336; 55,005; and 80,426. In Nellore the repairs amounted to Rupees 2,37,913; in Cuddapah 79,066; in Bellary 1,52,899; in Chingleput 97,409; and in

Tinnevelly 51,454. In the Godavari and Kistnah divisions the expenditure was Rupees 2,70,935 and 1,04,481 respectively. In the other districts it was limited.

8. The violent storms with which some of the southern districts were visited during the year under report accounts[†] for a large increase in the outlay for repair of irrigation works, but it seems proper to direct the attention of the Chief Engineer to the large augmentation observable in this item since the establishment of the new Public Works Deptt.

9 The average expenditure on irrigation works and repairs in Tanjore in the 35 years closing with 1850/51 was on an average a little more than a lac of Rupees,[*] that of the highest year (1850/51) being Rupees 1,73,395. In the year under review the expenditure for repairs amounted to four and a half lacs of rupees.

10. A similar result is found in other Districts as will be seen from the subjoined statement extracted from the annual reports.

	Average of the five years to the close of 1850/51 taken from PW Com's Report	Repairs in		
		1856/57 Rs	1857/58 Rs	1858/59 Rs
Nellore	40748	1,13,643	1,17,747	2,37,913
Cuddapah	23245	33,900	35,422	79,066
Bellary	52695	53,493	80,182	1,52,899
Chinglepat	77,523	31,136	41,445	97,409
Trichinopoly	74,136	122,606	76,681	1,69,145
Tanjore	1,17,602	1,95,780	1,65,965	4,56,698

11 The Government are

[*] appendix 5: Pub: W. Comrs 1st Report

are aware that there are valid reasons why the outlay on these repairs should have increased to some extent; in particular the inadequacy of the former outlay in most Districts, and the consequent bad condition of the works; and the increase which has certainly taken place of late years in the cost of labour and of materials. The present observations are intended to call the attention of the Chief Engineer as well as of the Collectors to the necessity of watchful care to guard against a lavish and wasteful expenditure.

Communications

12 The sums laid out under this head comprize.

	New works	Repairs	Total
Roads & Bridges	3,23,243	7,60,462	1,083,705
Navigable canals	7,813	28,057	35,870
Ports & harbours	18,888	4,857	23,745
Ferry boats	"	4,359	4,359
	3,49,944	7,97,735	11,47,679

Of

Of these it will be sufficient to notice the first. The expenditure on account of roads was large in each of the thirteen districts named in para 13 of the Chief Engineer's report; the largest amount for repairs is Rupees 1,08,995 in Chinglepat, which contains parts of several costly Trunk roads. In Bellary, North and South Arcot, Trichinopoly, Canara, it was upwards of half a lac in each; in the other Districts it was below that amount, the smallest expenditure being Rs. 24,971 in Ganjam.

Buildings

13 The expenditure on buildings was chiefly on account of the Military works at Jackatallah Rs. 3,05,118; Bangalore Rs. 1,09,163; and Madras 72,175. The expenditure for Military buildings has also been large in the Godavari Division, Bellary, Chingleput, and Trichinopoly.

14 The Government now proceed to notice, in the order of their arrangement, those parts of the report relating to works and projects of more than ordinary interest and importance.

This

Ganjam District

Road from Russelkondah via Sunkarabolle to Sohnepore para 29.

15 This is a road of considerable importance and has formed the subject of correspondence with the India and Home Governments. According to the present report the tracing of the whole line has been completed and is now being cleared and widened; ten miles of jungle and two miles of ghaut have also been rendered passable & Brinjaries and others are already using the road. A fuller account of the progress and prospects of this line was furnished in the Deputy Chief Engineer's letter of the 5th August /59, No. 3508, and its

accompaniments, & the orders passed upon it on the 26th idem will have informed the Chief Engineer of the willingness of Govt. to give consideration to an estimate for a second class road to Sunkarabole. It is only necessary to add that the expediency of continuing the road beyond the Madras frontier to Johnpore has been represented to the Govt. of India.

P.W. Des. from Home Govt. 6th May/59 No. 7 p. 508
Pro: 29th June 1859 No. 1573 P3
From Dy. Chief Engr. 5th Augt./57 No. 3508
Pro: 25th Augt./57 No. 2043
To Govt. of India 25th do - 2044.
Res. to Home Govt. 25th do - 41.

Trunk road from Chicacole to Itchapoor
Para 34.

16 The description given of the condition of this portion of the northern trunk road, is anything but satisfactory. It is not stated whether any remedial measures are about to be applied if not the subject should receive attention at a proper opportunity.

The

Godavari Division
Brick-making machines
para 46

17. The account in para 46 of the advantages obtained by the use of the patent brick-making machine is very satisfactory. The Barracks at Dowlaishwaram were constructed with bricks manufactured with Ransom's patent machines two of which it is stated turning out ten thousand a day were at work for four months manufacturing the bricks at a cost about the same as that of native manufacture viz. 9 annas a thousand.

P.W. 9th Septr./59 No. 2151, P3.

18. Bricks manufactured at Jackatallah by machines, it is believed of a similar description, cost 8 1/2 rupees per thousand being nearly double that of the low country, but special circumstances were advanced to account for the increase. Still making allowance for all circumstances the Government

cannot but think that the cost of the bricks manufactured at Dowlaishwarum is understated, and

[illegible] would wish to receive further explanation on the subject in particular whether all items of cost are included.

Para 55 & 63

19. The statements in para 55 & 63 go far to prove the prosperous condition of the Rajahmundry District, attributable in a great measure to the large irrigating works in it. These have enabled the District to supply the deficiencies of the southern market, and it is represented, that no less a quantity than 24 lakhs of Bengal maunds of various kinds of grain have been exported, and that the canals afforded the means of cheap transit to the coast. The export and import trade have also largely increased and the traffic on the main lines of navigation is further evidence of prosperity. The extent of land irrigated, is set down at seven lakhs of acres, but no information is given as to the data on which this computation has been arrived at.

Kistnah Division para 70

20. The extension of irrigation consequent on the works executed in this division are shewn to have advanced the revenues of the two Districts of Masulipatam and Guntoor.

Chingleput District Cochrane's Canal.

21. 1. The traffic from the northward by Cochrane's Canal for the year 1858/59 exhibits a slight increase in tonnage and tolls in comparison with that of the previous year, and a small decrease in the number of boats, or rather in the number of their trips.

	Boats	Tons	Tolls Rs.	As.
1857-58	9,324	129,643	32,410	12
1858-59	9,111	130,236½	32,559	2
Increase in tonnage & toll		593½	148	6
Decrease in boats 213				

The chief items which contributed to the traffic of the year were the following.

	Boats	Tons	Tolls Rs - as
Chillies	173	2184½	546-2
Charcoal	74	413¾	103-7
Firewood	1429	32,125¼	8031-7
Passenger boats	2,029	2,118	529-8
Paddy	71	1163¾	290-15
Shells	1,784	24,008¼	6002-1
Saltfish	352	1,008	252-
Salt	2,225	51,720	12930-
Straw	31	365½	91-6
Tobacco	31	349	87-4
Turf	35	35	8-12
Wood	569	12722¼	3180-9
	8,703	128,213¼	32053-5
Other commodities	408	2023¾	505-13
Total	9,111	130,236½	32,559-2

22 Comparing the traffic of 1858-59 with that of the previous, the following results appear.

Increase	Increase in Tons	Tolls
Firewood	4,220¾	Rs 1055-3
Paddy	539¼	134-13
Shells	866¼	216-9
Saltfish	539	134-12
Decrease	**Decrease in Tons**	**Tolls**
Jungle sticks	153	38-4
Red-wood	422¾	105-11
Rafts of timber	163	40-12
Salt	2865	716-4
Straw	158½	39-10
Tobacco	332	83-
Wood	1,801¼	450-7

The

327

23 The number of boats plying on the canal in 1858/59 was 625 boats of the total tonnage of 8934 being an increase of 78 boats and 1135 tons.

24 The receipts and disbursements of the year on account of the canal are shewn in Table F to be as follow.

Receipts in 1858/59

	Rs as
Toll on miscellaneous produce	19,629-2-..
do — Salt	12,930-..-..
Total Receipts	Rs 32,559-2-..

Disbursements in 1858/59

Toll Establishment	2,004-..-..
Contingencies	75.13.6
Lock establishment	438-..-..
Contingencies	24.12.6
Ordinary repairs	5950-..-..
Total disbursements	8,492.10-
Net Revenue	24,066-8-

25 The returns of traffic on the Godavari and Kistnah channels and on the Eastern coast canal, which are to be found at the paras of the Report noted in the margin will

p. 60-68 + 124

will be published in the official Gazette for general information

Madura District
Pamban Channel
P.169-170

26 The operations on the Pamban channel though costing little, have been very much to the advantage of the navigation. The channel is reported to be now practicable for laden vessels of 200 tons with a draught of eleven feet. Its depth across the reef is on an average 12½ feet and its width a hundred feet — Through the sand bank, the channel is twelve feet deep and 110 feet wide. The number of vessels which passed through the channel was 1849.

Tinnevelly
P.178

27 The conduct of the Sub Overseers towards the Coolies mentioned in para 178 has already come under the

consideration

consideration of Govt. in Proceedings bearing date the 24th October 1859 No 2499.

Audit of Bills in the Central Office.
P. 232-233.

28 It appears from the Report of the Audit of Bills preceding para 232 that almost the whole of the Bills remaining at the beginning of 1858/59 and received during that year had been finally disposed of by the Chief Engineer — Contrasted with the work performed in this branch in the year preceding, there is a large increase in favor of the operations of the year under review, but this was owing to the large accumulation and clearing off the arrears shewn in the correspondence noted in the margin which it is not necessary to notice in this place. The operations of

From Comrs on Public establishments
d/ Augt/58.
Pro. 6th Novr/58 No 2341.
" 1st Decr " — " 2581

1858/59

1858/59 are shewn below.

	No of Bills	amount of Bills
Bills, remaining on the 1st May/58 and received in 1858/59	10,843	117,76,407 Rs
Bills passed by the Ch. Engr.	10,117	102,63,517 "
Recommended to Govt. for sanction	431	5,45,471
Bills objected to and returned	230	6,15,827
Total	10,778	114,27,805

calculating the working days in the year at 300, the daily average of bills disposed of in the Central office is 33, or including all the Bills investigated 36. Looking to the circumstances under which this amount of work has been got through, the Government would only express the hope that a sufficiently careful scrutiny of the Bills has actually taken place.

[illegible] are [illegible]

29. The work performed in the Lithographic department between the 1st May 1858 and 30 April

operations of the Lithographic Dept.

April 1859 was as follows—

	copies	impressions
Maps and Drawings	48,319	46,624
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Reviewing the
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