

29-1-06 S

Revenue (1897) Department.

MISCELLANEOUS SERIES.

G.O., No. 4949

DATED 20 Sept^r

[Despatch Abstract.]

Coming to the Director of the Govt Cinchona
Plantations, copy of the report on the working
of the Govt Cinchona Plantation and Factory
in Bengal for 1896-7 received from the Govt
of Bengal.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

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Revenue (189) Department.

CURRENT No. 778-8

The Hon. Mr. J. C. S.

Order misc 4947 d/20 Sept 97 From

The Govt of Bengal.

Communicated to
the Director of the Govt
Cinchona Plantations.

No. 4859 Misc.

Dated 27th August 1897.

Received

Registered

Enclosures

Spare copies.

SUBJECT.

The Director of the F.C.P.
A-20

7-18-97

Forwarding copy of the Report
on the working of the Govt.
Cinchona Plantation
and factory in Bengal
during 1896-97

BACK PAPERS.

G.O.	No.	Department.	Date
	3648		16. 9-96

FURTHER PAPERS.

G.O.	No.	Department.	Date.

ANNUAL REPORT ON THE GOVERNMENT CINCHONA PLANTATION AND FACTORY IN BENGAL FOR THE YEAR 1896-97.

No. 44C., dated Royal Botanic Garden, Sibpur, the 14th July 1897.

From—BRIGADE-SURGEON-LIEUTENANT-COLONEL G. KING, M.B., LL.D., F.R.S., C.I.E., Superintendent, Royal Botanic Garden, Calcutta, and of Cinchona Cultivation in Bengal.

To—The Officiating Secretary to the Government of Bengal, Financial Department.

I HAVE the honour herewith to submit the Report of the Cinchona Plantation and Factory for the year 1896-97.

Thirty-fifth Annual Report of the Government Cinchona Plantation in Sikkim, being that for the year 1896-97, and also the Report of the Factory for the same year, by BRIGADE-SURGEON-LIEUTENANT-COLONEL G. KING, M.B., LL.D., F.R.S., C.I.E., Superintendent of the Royal Botanic Garden, Calcutta, and of Cinchona Cultivation in Bengal, and Government Quinologist.

1. *Weather and General.*—During the six months prior to the beginning of the official year 1896-97 only about one inch of rain had fallen at the Cinchona Plantation, and the rainfall of the year 1896-97 itself was deficient. The effects of two successive years of drought could scarcely fail to be disastrous to plants so susceptible to climatic influences as cinchona trees: the results which I have to chronicle this year are therefore rather disastrous. The drought was felt with greatest severity by the numerous weak and sickly plants which had remained on the plantation as the result of the thinnings and croppings of previous years. It proved fatal also to many young trees standing on dry ridges. As the result principally of these two successive years of drought, large deductions have now to be made in the returns of trees on the plantation. The year was not, however, one of unmitigated disaster; for, whereas during the cold season of 1895-96 it was impossible for want of moisture to plant out any new trees, the Deputy Superintendent was able during that of 1896-97 to put out 243,750 plants of the variety of Calisaya known as Ledgeriana, and 20,000 trees of the sort known as Hybrid Cinchona.

2. *Changes in the Plantation.*—The deductions to be made from the plantation returns during the year are distributed as follows: The remainder of the trees in the Nimbong Plantation (bought some years ago from Messrs. Kilburn & Co.) were cut down in accordance with the original scheme of purchase: these amounted to 453,500. The remaining trees on the trans-Tista plantation at Rungjung, numbering 81,000, were also all cut down. On the Mungpoo division 153,700, and on the Sittong division 376,000, trees either died or were cut down prior to death. On the other hand, 263,950 young trees were planted out at Mungpoo: the net diminution in the number of trees during the year is thus 800,250, and the total number of plants remaining in the plantation on 31st March is estimated to stand at 2,683,451, all being of the quinine-producing sort, with the exception of 185,000 trees of the red bark (used for the manufacture of cinchona febrifuge). The programme of reducing the plantation to one only of quinine-producing barks is thus advancing rapidly towards completion.

3. *The year's Crop.*—The bark got from the trees uprooted during the year from the purchased plantation at Nimbong was 377,754 lbs., and from the other plantations 251,468,—in all 629,222 lbs. Of this, only 60,408 lbs. were of red bark, the whole of the rest being of quinine-producing bark of sorts; and the whole of it was as usual made over to the factory, except a small quantity (1,327½ lbs.) sold to the public and 315 lbs. indented for by a medical depôt. Besides the bark thus obtained by cropping, 122,571 lbs. were purchased during the year, partly from private plantations in Sikkim and partly from similar plantations in Travancore.

4. *Plantation Expenditure.*—The budget allotment for the plantation for the year was Rs. 84,000, and of that sum, Rs. 82,143-12-3 were spent on salaries, contingencies, and labour. The details are given in the following tables:—

	Rs.	A.	P.	Rs.	A.	P.
Salary of Deputy Superintendent, Cinchona Plan- tation—						
Salary	9,600	0	0			
Exchange compensation allowance	1,238	13	9			
Pony allowance	360	0	0			
				11,198	13	9
Salaries of European Assistants, including exchange compensation allowance, &c.				14,963	15	5
Pay of clerks				4,664	3	0
Pay of native establishment for plantation				2,387	0	0
Pay of temporary establishment, viz. sardars and coolies				26,305	4	0
Keep of ponies for plantation				900	0	0
Contingencies, including service postage stamps, pay of sardars and coolies of the Nimbong Plantation, and carriage of bark from Nimbong to Mungpoo Factory				20,859	5	7
Travelling allowance				152	12	6
Stores from England, including freight paid in England and India				712	6	0
Total				82,143	12	3

5. *Factory.*—The expenditure on the factory amounted to Rs. 79,867-8-5. This sum includes, however, the price paid for 122,571 lbs. of bark purchased, which amounted to Rs. 26,940-15-10; and also the cost of a new turbine for the grinding house. The acquisition of a new turbine had become a necessity, for the old one was rapidly becoming effete, and a breakdown in the grinding power would have utterly paralysed the whole factory. In renewing the turbine, opportunity was taken to increase the motor power sufficiently to drive a third disintegrator; and by increasing the speed at which the two old ones are driven practically to double the grinding power. The new machine, which is an "improved vortex," has been at work for some months, and has fulfilled all my expectations. The raw material worked up in the factory during the year consisted of 70,300 lbs. of succirubra and inferior hybrid bark, from which 3,452 lbs. of cinchona febrifuge were produced; and of 377,141 lbs. of quinine-yielding bark, from which 10,672½ lbs. of sulphate of quinine were obtained, the outturn being at the rate of 4.91 and 2.82 per cent. respectively. The total factory outturn of the year was thus 14,124½ lbs., being an increase upon that of the previous year of 1,996½ lbs. This increased outturn made it unnecessary to indent, as we had to do during the previous year, on the factory of the Madras Government for quinine to meet the demand for pice packets.

6. *Sales of the Manufactured Products.*—The issues of quinine during the year amounted to 8,482 lbs., as against 10,287 lbs. for the previous year. The decrease is accounted for by the fact that the medical depôts supplied themselves partly from the Madras Factory; and that, owing to the year being less feverish than usual, about 1,000 lbs. less were taken by Government officers for distribution in their districts. The demand for quinine for pice packets amounted to only 3,300 lbs., thus exceeding that of the previous year by only 130 lbs., whereas a much larger increase had been anticipated. The reason why this anticipation was not realized will no doubt be enquired into by the Sanitary and Postal authorities. The result of the diminished issues of the past year has had, however, one good effect, inasmuch as there remained at the end of it a small stock of quinine in hand from which unexpected indents might be met, whereas in all former years I had to work from hand to mouth. In my own opinion there ought always to be in stock an amount of quinine equal to a year's consumption. The recent earthquake, which fortunately spared the factory, has brought vividly to my mind the extreme undesirability of perpetuating the arrangement of having no reserve to fall

back on. The sales of febrifuge for the year amounted to only 2,994½ lbs., being 836½ lbs. below the sales of 1896-97. Of this decrease, 457 lbs. are accounted for by diminished purchases by the public, owing to the comparatively slight prevalence of fever during the year; 218 lbs. are accounted for by falling off in the medical depôt indents; and 79 lbs. owing to the practical prohibition of the use of this drug in Bengal by the late Inspector-General of Civil Hospitals. The most curious fact about the consumption of cinchona febrifuge still continues to be that it is bought largely by the non-official public, who are under no sort of compulsion to use it in preference to other febrifuges, but who do so because they find it such an efficient medicine. There is, for example, a single native medical practitioner in the Jessore district whose purchases of it last year exceeded the official consumption of the whole Province of Bengal (which has fallen this year to 30 lbs.). Details of the issues of both quinine and cinchona febrifuge for the year are given in the following table, while in Appendix F will be found the details of the distribution by provinces:—

Issues of Sulphate of Quinine and Cinchona Febrifuge in the financial years 1895-96 and 1896-97.

	1895-96.		1896-97.	
	Sulphate of quinine.	Cinchona febrifuge.	Sulphate of quinine.	Cinchona febrifuge.
1	2	3	4	5
	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.
To Medical Depôt, Calcutta	1,375 0	300 0	1,570 0½	200 0
Ditto, Mian Mir	2,373 0	728 0	1,309 8	609 12
To Inspector-General of Civil Hospitals, Bengal (for District Medical Officers, Bengal).		109 0		30 0
To Inspector-General of Jails, Bengal (for jails and lock-ups in Bengal).	4 0	81 0		
To Inspector-General of Jails, Bengal (for making into pice packets at Alipore Jail).	3,169 13		3,300 0	
To Inspector-General of Jails, Bengal (for compensation for loss of weight in conversion into pice packets).	32 0		33 0	
To Commissariat Department for Port Blair.	50 0		40 0	
Sold to Government officers, dispensaries, and medical missions, &c.	3,280 10½		2,227 6½	
Sold to Government officers and to the general public.		2,611 0		2,153 12
Given as samples	2 11½	1 14	2 1½	1 2
Total	10,287 2½	3,830 14	8,482 0½	2,994 10

7. *Stock Account.*—The stock of dry bark in the godowns at the plantation amounted on 31st March to 1,581,692 lbs., being an increase on the stock at the same date in 1896 of 302,710 lbs. The calculation is as follows:—

	lbs.	oz.
Cinchona bark in store at Mungpoo, Nimbong, and Botanic Garden on 1st April 1896	1,278,982	12
Cinchona bark collected during 1896-97—		
Sikkim Plantations	251,468	0
Nimbong	377,754	0
	629,222	0
Cinchona bark purchased during 1896-97	122,571	0
Total	2,030,775	12
Less—		
Used at factory for making quinine and febrifuge	447,441	0
Supplied to medical depôts and sold to public and Government officers	1,642	9
	449,083	9
Balance on 31st March 1897	1,581,692	3

The stocks of quinine and cinchona febrifuge at the end of the year amounted respectively to 4,548 lbs. 6½ oz. and 1,205 lbs. 12 oz.; and there was also at the factory a quantity of chemicals and oil. Owing to the low price to which cinchona bark has recently fallen in London, and in consideration of the fact that much of the stock at Mungpoo consists of Nimbong twig bark of poor quality, I have valued the whole at the very moderate rate of 2 annas per lb., and the quinine I have valued at a correspondingly low rate. The account stands as follows:—

Stock on 31st March 1896.

	Rs.	A.	P.
Chemicals and stores ...	5,500	0	0
Cinchona febrifuge, 748lbs. 6oz., at Rs. 8 per lb. ...	5,987	0	0
Sulphate of quinine, 2,357lbs. 8oz., at Rs. 14 per lb. ...	33,005	8	9
Dry cinchona bark at Mungpoo and Botanic Garden, 1,278,982½lbs., at annas 2 and pice 6 per lb. ...	1,99,841	0	10½
Total ...	2,44,333	9	7½

Stock on 31st March 1897.

	Rs.	A.	P.
Chemicals and stores ...	5,500	0	0
Cinchona febrifuge, 1,205lbs. 12oz., at Rs. 8 per lb. ...	9,646	0	0
Sulphate of quinine, 4,618lbs. 6oz., at Rs. 11 per lb. ...	50,032	8	0
Dry cinchona bark at Mungpoo and Botanic Garden, 1,581,692½lbs. 5oz., at annas 2 per lb. ...	1,97,711	8	0
Total ...	2,62,890	0	0

8. *Balance Sheet.*—By collecting the figures already given, as well as those of the cash receipts and book credits for products issued, the financial result of the year's working is seen at a glance:—

BALANCE SHEET.							
DR.		Rs. A. P.		CR.		Rs. A. P.	
To cash received from the treasury during 1896-97 for expenditure on the plantations, viz. Rungbee, Mungpoo, Sittong, Rungjung, and Nimbong ...		81,431 6 3		By cash receipts from sale of sulphate of quinine, cinchona febrifuge, and cinchona bark, &c. ...		62,901 5 6	
To stores from England for plantation ...		712 6 0		By credit from medical depôts for cinchona febrifuge, viz.—			
To cash received from the treasury during 1896-97 for expenditure on factory ...		44,082 2 4		Calcutta ...		2,000 0 0	
To cash received from the treasury for purchase of cinchona bark during 1896-97 ...		26,940 15 10		Mian Mir ...		6,097 8 0	
To stores from England for factory ...		8,844 6 3		By credit from medical depôts for sulphate of quinine, viz.—		8,097 8 0	
Cash ...		1,62,011 4 8		Calcutta ...		28,260 9 0	
To value of stock on 31st March 1896 ...		2,44,333 9 7½		Mian Mir ...		23,571 0 0	
		4,06,314 14 3½		By credit from Commissariat Department for sulphate of quinine supplied to the Commissariat Store and Shipping Officer, Calcutta, for Port Blair ...		51,831 9 0	
Surplus on the year's working, viz.				By credit from Inspector-General of Civil Hospitals, Bengal, for cinchona febrifuge supplied to medical officers of Bengal ...		720 0 0	
Profit on cash transactions ...		9,767 13 10		By credit from Inspector-General of Jails, Bengal, for sulphate of quinine supplied to the Alipore Jail for making into pice packets ...		300 0 0	
Increase in value of stock ...		18,556 6 4½		By credit from medical depôts for cinchona bark, viz.—		47,850 0 0	
		28,324 4 2½		Calcutta ...		35 0 0	
				Mian Mir ...		43 12 0	
						78 12 0	
				Cash ...		1,71,779 2 6	
				By value of stock on 31st March 1897 ...		2,62,890 0 0	
Total ...		4,34,669 2 6		Total ...		4,34,669 2 6	

From this table it will be seen that there was a profit on the cash transactions of the year of Rs. 9,767-13-10, which may I hope be considered satisfactory. But besides this actual cash profit, there is an increase in the value of the stock, amounting to Rs. 18,556-6-4½. The increase in stock can hardly, however, be considered as a profit, for the plantation, from which an unusually large number of trees has disappeared during the year, has not been kept up to its previous level by replanting. This must be undertaken in future years, and the present surplus may be set against that prospective expenditure.

9. *Sale of Quinine at the Post Offices.*—The quinine for the preparation of pice packets is made over by me in bulk to the Jail Department, who in turn make the packets over to the Postal Department for sale. The bulk supplied to the jail during the year was 3,300 lbs.—a quantity only 130 lbs. in excess of that supplied during 1895-96. The smallness of the increase is disappointing, and the cause of it is, I believe, being enquired into by the departments concerned. It would be in my opinion a very great pity were this mode of bringing quinine within the reach of the very poorest to receive any kind of check just as it is beginning to develop.

10. *Firewood Plantation.*—No additions were made to this during the year. The whole plantation looks extremely healthy.

11. *Land Rent.*—The sum of Rs. 3,476-15-3 was collected from settlers within the Cinchona reserve during the year on account of grazing dues and land rent, and was as usual paid into the Darjeeling Treasury, no credit being taken for it in the plantation accounts.

12. During the year Mr. J. A. Gammie, Deputy Superintendent, was in charge of both plantation and factory. Mr. Gammie's services require no commendation from me, as they are already well known to Government. Mr. Pantling, the senior Assistant, and the other members of the staff—Messrs. Parkes, Hartless, and G. A. Gammie—conducted their duties to my entire satisfaction. Babu Gopal Chundra Datta and most of the other members of the office staff also worked very well.

13. In the nine tabular returns, which are given as appendices to this report, will be found full information as to the details of the working of both plantation and factory for the year.

(6)

APPENDIX A.

Table showing the Number and Distribution of Cinchona Plants in the Government Cinchona Plantations, Sikkim and Bhutan, on 1st April 1897.

MUNGPOO DIVISION.

NAME OF SPECIES.	PLANTATIONS.				NURSERIES.			
	Number in permanent plantations on 31st March 1896.	Number of plants uprooted during the year 1896-97.	Planted during the year 1896-97.	Number in permanent plantations on 1st April 1897.	Number of stock plants for propagation on 1st April 1897.	Number of seedlings and rooted cuttings in nurseries for permanent plantations.	Number of rooted plants in seed beds and cutting beds.	Total nursery stock on 1st April 1897.
1	2	3	4	5	6	7	8	9
Cinchona Hybrid	764,200	50,000	20,200	734,400	4,000	15,000	...	19,000
" Succirubra	1,000,000	50,000	...	50,000	...	60,000	...	60,000
" Calisaya Ledgeriana	1,225,000	43,750	243,750	1,425,000	...	...	...	...
" " Verde and Morada.	10,000	9,850	...	50	...	...	...	...
" Officinalis	3,000	...	...	3,000	...	...	...	...
" Hard Carthagena	1	...	...	1	...	...	...	...
Total	2,102,201	153,700	263,950	2,212,451	4,000	75,000	...	79,000

SITTONG DIVISION.

Cinchona Hybrid	172,000	5,000	...	167,000	...	...	...	...
" Succirubra	485,000	350,000	...	135,000	...	...	...	...
" Calisaya Ledgeriana	190,000	21,000	...	169,000	...	...	...	...
" " Verde and Morada.	...	...	...	...	...	...	...	...
" Officinalis	...	...	...	...	...	...	...	...
" Hard Carthagena	...	...	...	...	...	...	...	...
Total	847,000	376,000	...	471,000	...	...	...	...

RUNGJUNG DIVISION.

Cinchona Hybrid	6,000	6,000	...	...	...	...	...	...
" Calisaya Ledgeriana	75,000	75,000	...	...	...	...	...	...
" " Verde and Morada.	...	...	...	...	...	...	...	...
Total	81,000	81,000	...	...	...	...	...	...

NIMBONG DIVISION.

Cinchona Hybrid	135,500	135,500	...	...	...	...	...	...
" Calisaya Ledgeriana	300,000	300,000	...	...	...	...	...	...
" " Verde and Morada.	12,000	12,000	...	...	...	...	...	...
" Officinalis	6,000	6,000	...	...	...	...	...	...
Total	453,500	453,500	...	...	...	...	...	...

APPENDIX B.

Statement of the Number of Cinchona Plants in Permanent Plantations and in Nurseries in the Sikkim and Bhutan Plantations on the 1st April 1897.

NAME OF SPECIES.	PERMANENT PLANTATIONS.						NURSERIES.			
	Total on 1st April 1896.	Planted in 1896-97.	Uprooted in 1896-97.	Total on 31st March 1897.	Increase during 1896-97.	Decrease during 1896-97.	Total on 1st April 1896.	Total on 31st March 1897.	Increase during 1896-97.	Decrease during 1896-97.
1	2	3	4	5	6	7	8	9	10	11
Cinchona Hybrid	1,077,700	20,200	195,500	901,400	...	178,300	24,000	19,000	...	5,000
" Succirubra	585,000	...	400,000	185,000	...	106,000	300,000	...	...	240,000
" Calisaya Ledgeriana	1,700,000	243,750	437,750	1,506,000	...	21,000	...	...	...	...
" " Verde and Morada	22,000	...	21,000	1,000	...	6,000	...	...	...	...
" Officinalis	9,000	...	...	3,000	...	...	...	...	...	...
" Hard Carthagena	1	...	...	1	...	...	...	...	...	245,000
Total	3,483,701	263,950	1,064,200	2,683,451	...	890,250	324,000	79,000	...	...

(7)

APPENDIX C.

Bark Statement for financial years 1895-96 and 1896-97.

Bark Statement for financial years 1895-96 and 1896-97.															
1895-96.															
SPECIES.	Balance on 1st April 1895.	Collected during the year.	Purchased.	Total.	Used at factory for quinine and febrifuge-making.	Sold to public and Government officers.	Balance in store on 31st March 1896.	Balance in store on 1st April 1896.	Collected during the year.	Purchased.	Total.	Used at factory for quinine and febrifuge-making.	Sold to public and Government officers.	Balance in store on 31st March 1897.	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs. oz.	lbs. oz.	
Succirubra	57,613	53,380	...	110,993	74,000	7804	36,212	36,212	60,408	122,571	96,620	62,300	1,557 9	32,763 3	
Calisaya	767,775	318,810	132,034	1,208,619	267,212	10	941,397	941,397	411,619	122,571	1,475,587	326,278	85 0	1,149,229 0	
Hybrid	2,724	1,615	...	4,339	3,000	...	1,339	1,339	618	...	1,937	1,369	...	618 0	
Verde and Morada ...	265,939	88,500	37,906	392,465	20,000	...	295,477	295,477	156,214	...	451,721	52,972	...	308,749 0	
Total ...	1,103,788	467,190	170,000	1,740,978	401,200	7904	1,278,982	1,278,982	629,222	122,571	2,030,775	447,411	1,642 9	1,581,692 3	

APPENDIX D.

Statement of Bark collected at the Sikkim and Bhutan Plantations up to the 1st April 1897.

	Mungpoo Division.	Sittong Division.	Rungjung Division.	Nimbong Division.	Purchased.	Total of all Divisions.
1	2	3	4	5	6	7
Produce of 1869-70	...	...	...	...	...	...
1871	2,400	...	...	...	...	2,400
1872	12,500	...	...	...	...	12,500
1873	39,000	...	...	...	...	39,000
1874	...	...	...	...	...	...
1875	16,000	...	...	...	...	16,000
1876	39,405	...	...	...	...	39,405
1877	211,931	...	...	...	...	211,931
1878	207,781	...	...	...	...	207,781
1879	344,225	...	...	...	...	344,225
1880	261,659	...	...	...	...	261,659
1881	377,525	...	...	...	...	377,525
1882	341,670	...	...	...	...	341,670
1883	396,980	...	...	...	...	396,980
1884	305,160	...	...	...	...	305,160
1885	339,201	...	...	...	...	339,201
1886	205,410	...	...	...	...	205,410
1887	225,631	...	...	...	...	225,631
1888	290,410	...	...	...	...	290,410
1889	373,100	...	...	...	...	373,100
1890	304,705	...	...	...	...	304,705
1891	293,972	...	...	...	...	293,972
1892	285,560	...	...	...	...	285,560
1893	304,390	...	...	...	...	304,390
Taken over from the Bhutan Cinchona Association in 1893	...	...	...	...	...	...
1894	158,225	90,350	81,450	574,322	...	574,322
1895	174,140	94,644	26,370	94,965	...	94,965
1896	171,875	67,370	27,450	205,480	...	205,480
1897	162,019	78,749	20,700	377,754	170,000	637,190
Total	5,293,159	1,048,856	311,332	1,453,036	292,571	8,428,954

APPENDIX E.

Statement of Income for financial years 1895-96 and 1896-97.

1	1895-96.				1896-97.			
	Receipts for bark, &c.	Receipts for sulphate of quinine.	Receipts for cinchona febrifuge.	Total receipts.	Receipts for bark, &c.	Receipts for sulphate of quinine.	Receipts for cinchona febrifuge.	Total receipts.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Cash paid into Bank of Bengal and other treasuries in Bengal ...	823 7 0	52,491 6 0	26,193 8 0	79,508 5 0	793 8 6	40,519 13 0	21,585 0 0	62,901 5 6
Book credit from Medical depôts ...	136 13 6	52,472 0 0	10,280 0 0	62,888 13 6	78 12 0	51,831 9 0	8,007 8 0	60,007 13 0
Ditto from Port Blair ...	...	700 0 0	...	700 0 0	...	720 0 0	...	720 0 0
Ditto from Inspector-General of Civil Hospitals, Bengal (for District Medical Officers, Bengal) ...	...	...	1,090 0 0	1,090 0 0	...	...	300 0 0	300 0 0
Book credit from Inspector-General of Jails, Bengal (for jails and lock-ups in Bengal) ...	...	64 0 0	810 0 0	874 0 0	...	...	...	...
Book credit from Inspector-General of Jails, Bengal (for making into pice packets) ...	92 0 0	44,377 6 0	...	44,469 6 0	...	47,850 0 0	...	47,850 0 0
Total ...	1,032 4 6	1,50,104 12 0	38,373 8 0	1,89,530 8 6	872 4 6	1,40,921 8 0	29,985 8 0	1,71,779 2 6

APPENDIX F.

Statement of Sales of Sulphate of Quinine and Cinchona Febrifuge to the various Provincial Dispensaries in the various Provinces during the financial years 1895-96 and 1896-97.

1	1895-96.			1896-97.		
	Sulphate of quinine.	Cinchona febrifuge.	Total.	Sulphate of quinine.	Cinchona febrifuge.	Total.
	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.
To dispensaries in Bengal...	437 8	313 12	751 4	429 14	293 0	722 14
Ditto Bombay	200 1	53 8	253 9	61 0	34 0	95 0
Ditto Madras	3 4	3 8	6 12	4 10	2 12	7 6
Ditto Burma	32 12	18 0	50 12	21 8	18 8	40 0
Ditto North-Western Provinces and Oudh.	362 0	85 12	447 12	235 11	61 0	296 11
Ditto Assam ...	225 0	126 4	351 4	200 7	167 4	367 11
Ditto Punjab...	1,194 0	217 4	1,411 4	595 13	124 4	720 1
Ditto Central Provinces.	167 2	14 0	181 2	293 6	157 8	450 14
Ditto Native States.	494 1	183 4	677 5	248 13	110 0	358 13
Ditto of Medical Missions.	164 14	...	164 14	136 4	112 12	249 0
Total ...	3,280 10	1,015 4	4,295 14	2,227 6	1,081 0	3,308 6

APPENDIX G.

Statement of the Outturn and Issues of Products from the commencement of manufacture till the 1st April 1897.

YEAR.	OUTTURN.				ISSUES.		
	Cinchona febrifuge.	Crystalline febrifuge.	Sulphate of quinine.		Cinchona febrifuge.	Crystalline febrifuge.	Sulphate of quinine.
			Manufactured.	Purchased.			
1	2	3	4	5	6	7	8
	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.
1874-75 ...	48 10	...	...	...	...	...	...
1875-76 ...	1,940 6	...	...	...	1,623 10	...	...
1876-77 ...	3,750 12	...	...	...	396 0	...	...
1877-78 ...	5,162 0	...	...	...	5,477 14	...	...
1878-79 ...	7,007 0	...	...	...	7,955 7	...	...
1879-80 ...	9,434 13	...	...	...	8,164 0	...	...
1880-81 ...	9,296 0	...	...	...	8,653 13	...	...
1881-82 ...	8,010 0	...	...	...	10,878 9	...	...
1882-83 ...	10,363 4	300 0	...	...	8,901 4	126 0	...
1883-84 ...	8,464 0	250 0	...	...	8,995 12	149 0	...
1884-85 ...	6,079 0	385 0	...	...	6,675 4	477 0	...
1885-86 ...	4,625 0	118 0	...	...	5,276 8	222 12	...
1886-87 ...	6,641 0	149 0	...	...	6,789 8	95 8	...
1887-88 ...	6,916 0	1 0	331 8	...	7,781 4	50 8	257 8
1888-89 ...	6,384 0	...	2,191 0	...	6,178 0	28 4	1,283 0
1889-90 ...	6,578 0	...	1,833 2	...	6,393 12	34 0	1,252 5
1890-91 ...	4,031 0	...	4,010 0	...	3,837 0	20 0	3,789 8
1891-92 ...	4,190 0	...	4,586 0	...	4,725 12	...	3,713 12
1892-93 ...	3,481 8	...	5,242 4	...	3,647 0	...	5,518 3
1893-94 ...	3,848 0	...	4,765 0	1,156 14	4,200 8	...	6,916 13
1894-95 ...	4,032 0	...	8,317 15	...	3,276 4	...	7,561 13
1895-96 ...	3,124 0	...	9,004 0	1,500 0	3,830 14	...	10,287 2
1896-97 ...	3,452 0	...	10,672 14	...	2,994 10	...	8,482 0
Stock in hand on 1st April 1897 ...	126,858 5	1,203 0	50,953 11	2,656 14	125,652 9	1,203 0	49,062 3
	...	...	...	...	1,205 12	...	4,548 6

APPENDIX H.

Details of Plantation Expenditure for financial years 1895-96 and 1896-97.

1	1895-96.		1896-97.	
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Pay of Deputy Superintendent ...	10,774 8 3	...	9,600 0 0	...
Exchange compensation allowance of Deputy Superintendent.	1,721 4 6	...	1,238 13 9	...
Pony allowance of Deputy Superintendent	360 0 0	12,855 12 9	360 0 0	11,198 13 9
Pay of European assistants ...	13,340 0 0	...	12,716 10 9	...
Exchange compensation allowance to European assistants.	2,372 2 5	...	1,628 4 8	...
Pony allowance of European assistants ...	660 0 0	...	619 0 0	...
Total of European establishment ...	29,227 15 2	16,373 2 5	26,162 13 2	14,963 15 5
Pay of clerks ...	4,620 0 0	...	4,664 3 0	...
Do. munshi ...	300 0 0	...	300 0 0	...
Do. malhs ...	816 0 0	...	840 0 0	...
Do. carpenters ...	856 0 0	...	792 0 0	...
Do. peons ...	252 0 0	...	192 0 0	...
Do. blacksmiths ...	192 0 0	...	283 0 0	...
Total of Native establishment ...	7,036 0 0	7,036 0 0	7,051 3 0	7,051 3 0
Pay of temporary establishment, viz. sardars and coolies.	...	26,521 4 9	...	26,805 4 0
Keep of ponies for plantation ...	900 0 0	...	900 0 0	...
Contingencies, including service postage stamps.	14,861 7 10	...	20,859 5 7	...
Travelling allowance ...	71 10 6	...	152 12 6	...
Stores from England, including freight paid in England and India.	1,246 12 9	...	712 6 0	...
Purchase of cinchona bark ...	...	17,079 15 1	...	22,624 8 1
Paid on account of purchase of Nimbung Plantation.	...	34,000 0 0	...	...
Total ...	...	73,025 0 0	...	...
		1,86,890 3 0		82,143 12 3

APPENDIX I.

Details of Factory Expenditure for financial years 1895-96 and 1896-97.

	1895-96.	1896-97.
1	2	3
	Rs. A. P.	Rs. A. P.
Pay of Quinologist ...	2,238 11 6	3,183 0 0
Exchange compensation allowance ...	401 9 0	450 5 3
Labour at factory ...	4,110 10 0	6,380 12 3
Do. for packing ...	2,460 3 6	2,517 7 3
Fuel ...	3,368 15 11	2,030 4 9
Chemicals ...	18,111 15 0	17,779 0 3
Machinery and other plant ...	936 11 7	6,806 4 6
Carriage of miscellaneous stores ...	767 0 8	2,036 6 1
Do. of cinchona febrifuge, sulphate of quinine, and bark.	756 2 9	1,371 4 6
Making tins for febrifuge and quinine ...	419 10 0	480 15 0
Advertisement charges ...	791 0 0	850 8 0
Miscellaneous expenditure ...	1,079 13 6	1,125 14 6
Stores from England, including freight paid in England and India.	8,371 1 0	8,844 6 3
Sulphate of quinine from the Government Quinologist, Madras.	21,171 1 6	
Purchase of cinchona bark ...		26,940 15 10
Total ...	62,982 9 11	79,867 8 5

G. KING, M.B., LL.D., F.R.S., C.I.E.,

Superintendent of the Royal Botanic Garden, Calcutta, and
of Cinchona Cultivation in Bengal, and Government Quinologist.

FINANCIAL DEPARTMENT.

MISCELLANEOUS.

CALCUTTA, THE 27TH AUGUST 1897.

RESOLUTION.—No. 4854Mis.

READ—

The Annual Report on the Government Cinchona Plantation and Factory in Bengal for the year 1896-97.

Read also—

The Report for 1895-96, and the Resolution of Government recorded thereon.

THE drought which occurred in the year 1895-96 was repeated in a less severe form in the year under review. The effect of two successive years of drought could not fail to be disastrous to the cinchona plants, which are particularly susceptible to climatic influences, and it was only possible to plant out during the last cold weather 243,750 plants of the *Calisaya Ledgeriana* and 20,000 trees of the sort known as Hybrid Cinchona. The number of trees uprooted at the plantations for their bark was 1,064,200, against 453,000 uprooted in 1895-96. The result of the year's operations was that the total number of cinchona trees in the plantation at the close of the year (excluding the nursery stock, which amounted to 79,000) was 2,683,451, all being of the quinine-producing sort, with the exception of 185,000 trees of the red bark for the manufacture of cinchona febrifuge. The policy steadily observed for several years past has been to reduce the number of the trees which yield the febrifuge, and to plant out only the quinine-producing varieties.

2. The crop of the year amounted to 629,222 lbs. of dry bark, of which 251,468 lbs. were obtained from the trees uprooted in the Government plantations in Sikkim, and 377,754 lbs. were collected from the trees in the plantation purchased at Nimbong. The bulk of the bark was of the quinine-producing sort, and with the exception of 1,642 lbs. supplied to a medical depôt and sold to the public, the whole crop was, as usual, made over to the Cinchona Factory for disposal. Besides the bark obtained by cropping, 122,571 lbs. were purchased from private plantations in Sikkim and Travancore.

3. The outturn of the factory, which was strengthened by a new turbine, was 10,672 lbs. of sulphate of quinine, and 3,452 lbs. of cinchona febrifuge, against 9,004 lbs. and 3,124 lbs., respectively, in 1895-96, the total increase being 1,996 lbs. The following statement compares the issues of the year with those of the preceding year:—

	1895-96.		1896-97.	
	Sulphate of quinine.	Cinchona febrifuge.	Sulphate of quinine.	Cinchona febrifuge.
1	2	3	4	5
	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.
To Medical Depôt, Calcutta ...	1,375 0	300 0	1,570 0½	240 0
Do. Mian Mir ...	2,373 0	728 0	1,369 8	609 12
To Inspector-General of Civil Hospitals, Bengal (for District Medical Officers, Bengal).		109 0		30 0
To Inspector-General of Jails, Bengal (for jails and lock-ups in Bengal).	4 0	81 0		
To Inspector-General of Jails, Bengal (for making into pice-packets at Alipore Jail).	3,169 13		3,300 0	
To Inspector-General of Jails, Bengal (for compensation for loss of weight in conversion into pice-packets).	32 0		33 0	
To Commissariat Department for Port Blair.	50 0		40 0	
Sold to Government Officers, Dispensaries, and Medical Missions, &c.	3,280 10½		2,227 6½	
Sold to Government Officers and to the general public.		2,611 0		2,153 12
Given as samples ...	2 11½	1 14	2 1½	1 2
Total ...	10,287 2½	3,830 14	8,482 0½	2,994 10

The decrease in the issues of sulphate of quinine is attributed partly to the fact that the Medical Depôts indented to some extent on the Madras Government Factory, and partly to a reduced demand owing to fever being less prevalent during the year. The sales of cinchona febrifuge were also affected by this latter cause. Although the official indents fell off considerably, the febrifuge still maintains its popularity as a remedy for fever among the non-official public, the amount purchased by a single native medical practitioner in Jessore having exceeded the official consumption of the whole of Bengal. The stock of quinine in hand at the close of the year was 4,548 lbs., and of febrifuge, 1,205 lbs.

4. The revenue derived from the sale of sulphate of quinine, cinchona febrifuge, cinchona bark, and other products of the plantation, amounted to Rs. 1,71,779, against Rs. 1,89,530 in the previous year; thus:—

	1895-96.	1896-97.
	Rs.	Rs.
By sale for cash	79,508	62,901
By credit from the Medical Depôts and Port Blair	63,589	60,728
Ditto Inspector-General of Civil Hospitals, Bengal	1,090	300
By credit from the Inspector-General of Jails, Bengal —		
For Jails	874	
For pice-packets	44,469	47,850
Total	189,530	171,779

5. The expenditure on the plantation amounted to Rs. 82,143, against Rs. 79,865 in the previous year. The amount spent on account of the factory rose from Rs. 62,982 to Rs. 79,867, which included the price paid for the bark purchased from private plantations, and the cost of a new turbine.

6. The net profit on the working of the plantations amounted to Rs. 9,767, against Rs. 4,598 in the previous year. The result is satisfactory.

7. The amount of quinine delivered to the Jail Department, for conversion into pice-packets for sale to the public through the Postal Department, was 3,330 lbs., or only 130 lbs. more than the quantity supplied in 1895-96. It appears that the smallness of the increase was due to the inability of the Printing Department to supply to the Jail Department, in sufficient quantity, the envelopes in which the quinine is wrapped up. Measures have since been taken to remedy this defect. At the same time, all restrictions on the supply of quinine, either in pice-packets or in bulk, to other Governments and Administrations, referred to in the last year's Resolution, have been withdrawn, and Dr. King has been instructed to comply with any demands he may receive.

8. The Lieutenant-Governor desires to thank Dr. King and also Mr. Gammie, the Deputy Superintendent of the Cinchona Plantations, who has since retired from service, for their efficient management of the Department during the year.

By order of the Lieutenant-Governor of Bengal,

C. E. A. W. OLDHAM,

Offg. Secretary to the Government of Bengal.

FINANCIAL DEPARTMENT.

MISCELLANEOUS.

No. 4859Mis.

CALCUTTA, THE 27TH AUGUST 1897.

FROM C. E. A. W. OLDHAM, Esq.,

Offg. Secretary to the Government of Bengal.

TO THE SECRETARY TO THE GOVERNMENT OF MADRAS.

SIR,

I AM directed to forward, for the information of the Government of Madras, a copy of the Report on the working of the Government Cinchona Plantation and Factory in Bengal during 1896-97, together with a copy of the Resolution recorded by the Lieutenant-Governor thereon.

I have the honour to be,

SIR,

Your most obedient servant,



Offg. Secretary to the Government of Bengal.

When given for copying _____
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ENCLOSURES TO G. No.

ORDER OF GOVERNMENT A A A A A A A

LETTER OF GOVERNMENT.

STATEMENT WITH DITTO.

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