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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue DEPARTMENT

G.O. No.	388	~~Press~~
~~B.P. No.~~		Mis.

Dated 9. 3. 1875 ~~196~~ .

Not to be folded or roughly handled

No. 117. Read the following letter from Surgeon-General E. BALFOUR, Surgeon-General of Hospitals, Indian Medical Department, Fort St. George, to C. G. MASTER, Esq., Acting Secretary to Government, Revenue Department, dated Fort St. George, 28th April 1874, No. 189 :—

WITH reference to paragraph 2 of G. O., No. 286, of 2nd March 1874, I have the honour to submit, for the consideration of the Right Honourable the Governor in Council, the following remarks on the points raised by Her Majesty's Secretary of State for India with regard to the use of Quinine, Cinchonidine, Quinidine, Cinchonine, and of Amorphous Quinine in this Presidency.

2. In paragraph 7 of his despatch, the Secretary of State expresses surprise that the valuable reports of the Cinchona Commission of this Presidency should have borne so little fruit in the way of encouraging medical men to use the other alkaloids in lieu of Quinine; and, with reference to this, I beg to explain that in the year 1868, immediately after the Cinchona Commission's report established the therapeutical value of the sulphates of Cinchonidine and Quinidine, the price charged for each of these articles was no less than £4 per pound at a time when Quinine was being purchased at £3-4-0 per pound On my predecessor becoming aware of this, he omitted Cinchonidine and Quinidine altogether from his next annual indent, and observed that "Quinine has been indented for in consequence of the Examiner of Medical Accounts having intimated that, according to the Price List received by him, it is cheaper than any of the new alkaloids, except Cinchonine." The omission of these alkaloids from the 1869 indent, of course, reduced the established proportion, which, in turn, diminished the issues in succeeding years, and thus the demands for these articles have fallen off. But, whilst the high price of the alkaloids prevented their being indented for, it is proper to say that the profession generally have not acquired the same confidence in Cinchonidine, Quinidine, and Cinchonine that they have in Quinine, and this feeling has also contributed to decrease the demands for the articles in the home indents. Like all other new remedies, it will take time to establish their reputation, more especially as they have to take the place of the well-known Quinine. Medical men may have a certain amount of confidence in their therapeutical value, and yet hesitate, in critical cases, to use them in preference to Quinine, in which they have, from prolonged experience, the fullest reliance. A few officers, indeed, have little or no faith in the febrifuge properties of Quinidine, Cinchonidine, and Cinchonine, and object to use them under any circumstances, though the results of the trials carried out under the auspices of the Cinchona Commission, and subsequent experience leave no doubt that these preparations will, in course of time, occupy a much higher place in the list of febrifuges than has hitherto been accorded to them by the profession generally. The remedies must, however, be allowed to work their way on their own merits into professional favour.

Price of Cinchona alkaloids as given by Examiner of Medical Accounts.				Rs.
Sulphate of Quinine	...	...	...	32
,, Quinidine	...	...	...	40
,, Cinchonidine	...	...	...	40
,, Cinchonine	...	...	...	12

3. I consider the suggestion of Mr. Howard to encourage the use of Cinchonidine a most valuable one, and if, as he believes, it could ultimately be sold in Indian bazaars at one Rupee per ounce, the boon to the fever-scourged people of this Presidency would be simply inestimable. The total deaths from all causes

registered in the Madras Presidency during 1872 were 508,182, and of these no less than 214,148 are attributed to fever. From this death roll can be estimated the amount of fever-cases not fatal, and of other diseases which fevers have called into existence, and from which the sufferers ultimately die. There is no popular want so pressing at the present moment as that of a cheap Cinchona febrifuge, as I firmly believe that a vast amount of sickness and suffering, of which nothing is heard, and 50 per cent. at least of the deaths which now take place from fever, would be prevented by such an agent. I am further of opinion that Cinchonidine would fully meet this want if supplied in sufficient quantity and at a low price, say one Rupee per ounce. At this rate, a poor man could for one Anna obtain 27 grains of the drug, which, in ordinary cases, would probably be sufficient to cure an attack of fever. Considering, however, the very scant means and even poverty of a large body of the people, even one Rupee the ounce is a high price if this drug is to become a febrifuge within the reach of the masses; and it is proper to mention here that I entertain grave doubts as to Cinchonidine ever being supplied at that rate even in Great Britain, putting aside freight and other charges, which would be incurred before it reached Madras. But few barks would probably yield more than 4 per cent. of the alkaloid, if so much, so that it would require more than 1½ lbs. of bark to get one ounce of alkaloid. Assuming, then, that such rich bark could be purchased at 18 pence per pound, it will be seen that the cost of the bark alone would exceed the price at which it is proposed to sell the alkaloid.

4. With regard to the therapeutical value of Cinchonidine, I need only quote the opinion of the Cinchona Commission, who say: "That ordinary sulphate of Quinine and sulphate of Quinidine possess equal febrifuge power," and "that sulphate of Cinchonidine is only slightly less efficacious." If, therefore, Mr. Howard's anticipation as to the price of Cinchonidine could only be realized, there would be no doubt about the propriety of making it the febrifuge of the future for the people of India. I must not omit to notice one advantage that it possesses, *viz.*, its great resemblance to Quinine, both in appearance and taste. The latter drug has now become quite familiar to the great bulk of the people, and it is of no little importance that the new article should resemble it in all points as nearly as possible. In fact, a great many would look on Cinchonidine sulphate as an old friend with a new name.

5. In the 6th paragraph of his despatch, the Secretary of State notices that latterly the indents for Quinine and other Cinchona alkaloids from Madras have been smaller than the demands from Bombay, although the latter is the lesser Presidency, and wishes to know whether the reduction in demand is due to the use of Mr. Broughton's local manufacture. In answer to this inquiry, I have the honour to mention that the issues of the Nilgiri preparation from 1870, the year of its introduction, to March 1874 inclusive, have been as per margin, and there can be no doubt that they have reduced the consumption of the European preparations to an extent commensurate with the total quantities used of the local manufacture. It will be

	lbs.	oz.
1870 Issues	8	6½
1871 do.	89	10
1872 do.	85	10
1873 do.	30	2
1874 do.	10	12
Total...	224	8½

observed that the issues during 1873 were considerably less than in the two preceding years. This was chiefly due to the available stock of the "Amorphous Quinine" having been reduced by the transmission in the course of the year of 160 lbs. in two instalments to Calcutta, and 50 lbs. to Bombay. The first supply to Calcutta was forwarded in February 1873 to meet a demand for Cinchona alkaloids during the outbreak of Burdwan fever, and as a subsequent demand was made in September 1873 for another supply of the local preparation, it is legitimate to infer that the drug had been found efficacious in the treatment of the severe type of fever which was then ravaging that part of Bengal, and a further supply of 80 lbs. has since been sent to Calcutta in January 1874.

6. In paragraph 5, I have given a statement of the annual supplies of the Nilgiri "Amorphous Quinine" furnished to the Medical Department, and it now only remains to notice, in compliance with the request in paragraph 5 of the Secretary of State's despatch, "the quantity that has been sold to the public, with the price, and the judgment that has been formed with reference to its efficacy," I therefore place in the margin a statement showing the issues that have been made to hospitals and to Civil authorities for sale and gratuitous distribution during each year, since its first introduction. From the statement given in this and the preceding paragraph, it will be gathered that the total supplies of the Nilgiri preparation sent to the Medical Store Depôt, Madras, have been disposed of as follow:—

	lbs.	oz.
1870.		
To Military Hospitals	0	½
,, Civil ,, ...	8	6
1871.		
,, Military Hospitals	20	10
,, Civil ,, ...	21	0
,, Collectors for sale and gratuitous distribution	48	0
1872.		
,, Military Hospitals	6	0
,, Civil ,, ...	8	10
,, Collectors for sale and gratuitous distribution	71	0
1873.		
,, Military Hospitals...	6	12
,, Civil ,, ...	13	14
,, Collectors for sale and gratuitous distribution	9	8
1874 (three months.)		
,, Military Hospitals	0	2
,, Civil ,, ...	6	10
,, Collectors for sale and gratuitous distribution	4	0
Total...	224	8½

	lbs.	oz.
To Calcutta	240	0
,, Bombay	50	0
,, Military Hospitals in this Presidency	33	8½
,, Civil do. do	58	8
,, Collectors for sale and gratuitous distribution do. do.	132	8
Total...	514	8½

The greater portion of the issues in this Presidency has been to Collectors for sale and gratuitous distribution, and steps will now be taken to ascertain the respective quantities which have been sold and distributed gratis. It will be observed that the supplies sent to Calcutta for use in the Burdwan District exceed the total consumption in this Presidency. The rate at which Amorphous Quinine is sold to the public is Rupees 1-8-0 per ounce, that price having been fixed in G. O., No. 710, of 20th April 1871, in communication with Mr. Broughton. In paragraph 38 of this officer's report in G. O., No. 408, of 1st April 1874, it is stated that the expense of making each ounce of the amorphous preparation is now only 8 Annas 2 Pies, and as there is used in the manufacture a good deal of bark which in Europe would be commercially worthless, this should be considered when calculating the cost, and the selling price might now be reduced at least to

half Rupee the ounce, which will probably be found a remunerative rate, and thus the benevolent intentions of Government with regard to supplying a cheap febrifuge for the country at large would be in a measure met.

7. It now remains to notice the judgment that has been formed by the Medical Department, with reference to the efficacy of the amorphous preparation as a febrifuge. With a view of submitting it to a rigorous test, small quantities of the drug have been, from time to time, supplied to Civil and Military hospitals, some of which are situated in notoriously malarious districts. At the same time, blank forms, similar to those used by the Cinchona Commission, were issued for the tabulation of results, so that the qualities of the febrifuge might be subjected to the logic of figures. I append a table showing the results of the whole of these trials. Altogether 1,882 cases were treated with the drug, and of this number 1,711 were of the quotidian, 128 of the tertian, thirty-four of the quartan, and nine of the remittent type. There was thus in the variety of type ample scope for a searching test of the febrifuge powers of the new preparation, while, on the other hand, the fever met with in some of the districts in which the experiments were conducted is of a most obstinate character and very frequently accompanied with dangerous complications. To these latter peculiarities in the nature of the fever at Lackady in Wynaad are to be attributed partly to the great length of time the patients were under treatment and the large consumption of the febrifuge. On the whole, the results are favourable, and, but for the Lackady figures, they might have been pronounced very satisfactory. Out of the 1,882 cases that came under treatment, it will be observed that in only four instances did the drug fail to effect a cure. In one case, the final result was not known, as the patient did not return after the first dose. The average time that each patient was under treatment was 13·2 days, and the average quantity of the drug administered from first to last in each case 162·3 grains. These high averages are chiefly due to the Lackady figures. As already stated, fevers contracted in that neighbourhood are very obstinate, and often complicated with other affections, and it is, therefore, quite possible that the Hospital Assistants who conducted the experiments may have allowed cases to remain under the heading of Fever not only till the paroxysms were checked, but also till the complications of the disease were finally cured. Indeed, there seems no other method of accounting for the very exceptional results recorded at this place. At Goodalore, another Wynaad station, the type of fever may be said to be identical with that prevailing at Lackady, and yet the results were very different. Putting the Lackady figures aside, the remaining results show that, under the use of Amorphous Quinine, a cure is effected in a period nearly the same as that required by Cinchonidine, Quinidine, or Quinine, but with a somewhat larger expenditure of the drug. In submitting the returns of results of treatment, medical officers commented, in some instances, most favourably, in others less so, on the properties of this new febrifuge; but I have not deemed it necessary to transcribe these, as the tabular statement contains the pith of the whole, and will place before Government the facts from which I have formed my opinion. In conclusion, I beg to state briefly that "Amorphous Quinine" is a sure febrifuge, but little inferior to the European Cinchona alkaloids, and that if it can be sold at one Rupee per ounce, or a cheaper rate, it is extremely desirable that it should be manufactured in larger quantities.

Proceedings of the Madras Government, Revenue Department,
9th March 1875.

Enclosure No. 1.

Table shewing the Results of Treatment of Malarious Fever by the Amorphous Alkaloids prepared from Indian-grown Barks.

Station.	Name of Medical Officer.	Type. Total Cases	Quotidian.	Tertian.	Quartan.	Remittent.	Average Time under treatment. DAYS.	Average Quantity of Drug used. GRAINS.	Result. Cured.	Result. Doubtful.	Remarks.
Lackady (Wynaad)	Hospl. Asst. T. Israel Do. C. T. Venkatroyooloo Do. A. Parthasarathy Pillay, and Do. T. R. Dorasawmy Pillay	566	480	57	29	...	73	1080·7	566	...	
Goodalore (do.)	Assistant Apothecary Wade	73	68	5	5	2	2·1	24	73	*2	* Patient did not return after first dose.
Upper Godavery Barrier Works	Asst. Surgeon Hazlett Do. A. E. Dalgairns	92	87	2	...	3	7·4	91·8	89	3	
Raneepett	Dr. Scudder	55	51	...	...	4	8·7	52	55	...	
11th Regiment N. I., Raepore	Asst. Surgeon C. A. Harvey	180	167	13	...	...	4·7	49·4	180	...	
South Arcot District: Kullacoorchy Taluq	Syed Alli Mahomed	268	232	36	...	...	4·3	19	268	...	One died.
South Arcot District: Chengum and Tirkaloor Taluqs	T. L. Thavasagayum Pillay	526	520	6	...	...	2	4·7	526	...	
South Arcot District: Trinomalay Taluq	Syed Alli Mahomed	115	106	9	...	...	3·3	27·4	115	...	
	Total...	1,882	1,711	128	34	9	13·2	162·3	1,877	5	

(Signed) E. G. BALFOUR, Surgeon-General,
Surgeon-General, I.M.D.

FORT ST. GEORGE,
28th April 1874.

Proceedings of the Madras Government, Revenue Department,
9th March 1875.

No. 118. ORDER THEREON, 9th March 1875, No. 388.

Miscellaneous.

G. O., 1st April 1874, No. 408.
„ 11th Feb. 1875, „ 217.

ORDERED to be communicated to the Secretary of State, with reference to his despatch of the 16th December 1873, No. 25, together with copies of the reports incorporated in the Proceedings noted in the margin.

(True Extract.)

(Signed) D. F. CARMICHAEL,
Secretary to Government.

To the Surgeon-General, Indian Medical Department.

Exd. F. R. Bantleman.

Govt. of 1875 Madras

REVENUE.

To

THE SURGEON-GENERAL, INDIAN MEDICAL DEPARTMENT.

Dated March 9th, 1875.

Read

G. O., 9th March 1875, No. 383.

MADRAS.

Nos. 117-118.

Use of Quinine, &c., in Madras Presidency.

Ordering to communicate to the Secretary of State the report of the Surgeon-General, Indian Medical Department, regarding the —

No. . Read the following letter from Surgeon-General E. BALFOUR, Surgeon-General of Hospitals, Indian Medical Department, Fort St. George, to C. G. MASTER, Esq., Acting Secretary to Government, Revenue Department, dated Fort St. George, 28th April 1874, No. 189 :—

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2. In paragraph, 7 of his despatch, the Secretary of State expresses surprise that the valuable reports of the Cinchona Commission of this Presidency should have borne so little fruit in the way of encouraging medical men to use the other alkaloids in lieu of Quinine; and, with reference to this, I beg to explain that in the year 1868, immediately after the Cinchona Commission's report established the therapeutical value of the sulphates of Cinchonidine and Quinidine, the price charged for each of these articles was no less than £4 per pound at a time when Quinine was being purchased at £3-4-0 per pound On my predecessor becomming aware of this, he omitted Cinchonidine and Quinidine altogether from his next annual indent, and observed that "Quinine has been indented for in consequence of the Examiner of Medical Accounts having intimated that, according to the Price List received by him, it is cheaper than any of the new alkaloids, except Cinchonine." The omission of these alkaloids from the 1869 indent, of course, reduced the established proportion, which, in turn, diminished the issues in succeeding years, and thus the demands for these articles have fallen off. But, whilst the high price [illegible] being indented for, it is proper to say that the profession generally have not acquired the same confidence in Cinchonidine, Quinidine, and Cinchonine that they have in Quinine, and this feeling has also contributed to decrease the demands for the articles in the home indents. Like all other new remedies, it will take time to establish their reputation, more especially as they have to take the place of the well-known Quinine. Medical men may have a certain amount of confidence in their therapeutical value, and yet hesitate in critical cases to use them in preference to quinine, in which they have, from prolonged experience, the fullest reliance. A few officers, indeed, have little or no faith in the febrifuge properties of Quinidine, Cinchonidine, and Cinchonine, and object to use them under any circumstances, though the results of the trials carried out under the auspices of the Cinchona Commission and subsequent experience leave no doubt that these preparations will, in course of time, occupy a much higher place in the list of febrifuges than has hitherto been accorded to them by the profession generally. The remedies must, however, be allowed to work their way on their own merits into professional favour.

Price of Cinchona alkaloids as given by Examiner of Medical Accounts.			Rs.
Sulphate of Quinine	...	...	... 32
,, Quinidine	...	...	... 40
,, Cinchonidine	...	...	... 40
,, Cinchonine	...	...	... 12

3. I consider the suggestion of Mr. Howard to encourage the use of Cinchonidine a most valuable one, and if, as he believes, it could ultimately be sold in Indian bazaars at one Rupee per ounce, the boon to the fever-scourged people of this Presidency would be simply inestimable. The total deaths from all causes

registered in the Madras Presidency during 1872 were 568,182, and of these no less than 214,148 are attributed to fever. From this death roll can be estimated the amount of fever-cases not fatal, and of other diseases which fevers have called into existence, and from which the sufferers ultimately die. There is no popular want so pressing at the present moment as that of a cheap Cinchona febrifuge, as I firmly believe that a vast amount of sickness and suffering, of which nothing is heard, and 50 per cent. at least of the deaths which now take place from fever, would be prevented by such an agent. I am further of opinion that Cinchonidine would fully meet this want if supplied in sufficient quantity and at a low price, say one Rupee per ounce. At this rate, a poor man could for one Anna obtain 27 grains of the drug, which, in ordinary cases, would probably be sufficient to cure an attack of fever. Considering, however, the very scant means and even poverty of a large body of the people, even one Rupee the ounce is a high price if this drug is to become a febrifuge within the reach of the masses; and it is proper to mention here that I entertain grave doubts as to Cinchonidine ever being supplied at that rate even in Great Britain, putting aside freight and other charges, which would be incurred before it reached Madras. But few barks would probably yield more than 4 per cent. of the alkaloid, if so much, so that it would require more than 1½ lbs. of bark to get one ounce of alkaloid. Assuming, then, that such rich bark could be purchased at 18 pence per pound, it will be seen that the cost of the bark alone would exceed the price at which it is proposed to sell the alkaloid.

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5. In the 6th paragraph of his despatch, the Secretary of State notices that latterly the indents for Quinine and other Cinchona alkaloids from Madras have been smaller than the demands from Bombay, although the latter is the lesser Presidency, and wishes to know whether the reduction in demand is due to the use of Mr. Broughton's local manufacture. In answer to this inquiry, I have the honour to mention that the issues of the Nilgiri preparation from 1870, the year of its introduction, to March 1874, inclusive, have been as per margin, and there can be no doubt that they have reduced the consumption of the European preparations to an extent commensurate with the total quantities used of the local manufacture. It will be observed that the issues during 1873 were considerably less than in the two preceding years. This was chiefly due to the available stock of the "Amorphous Quinine" having been reduced by the transmission in the course of the year of 160 lbs. in two instalments to Calcutta, and 50 lbs. to Bombay. The first supply to Calcutta was forwarded in February 1873 to meet a demand for Cinchona alkaloids during the outbreak of Burdwan fever, and as a subsequent demand was made in September 1873 for another supply of the local preparation, it is legitimate to infer that the drug had been found efficacious in the treatment of the severe type of fever which was then ravaging that part of Bengal, and a further supply of 80 lbs. has since been sent to Calcutta in January 1874.

	lbs.	oz.
1870 Issues	8	6½
1871 do.	89	10
1872 do.	85	10
1873 do.	30	2
1874 do.	10	12
Total...	224	8½

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	lbs.	oz.
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,, Civil ,, ...	8	6
1871.		
,, Military Hospitals	20	10
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,, Collectors for sale and gratuitous distribution	48	0
1872.		
,, Military Hospitals	6	0
,, Civil ,, ...	8	10
,, Collectors for sale and gratuitous distribution	71	0
1873.		
,, Military Hospitals...	6	12
,, Civil ,, ...	13	14
,, Collectors for sale and gratuitous distribution	9	8
1874 (three months.)		
,, Military Hospitals	0	2
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Total...	224	8½

	lbs.	oz.
To Calcutta	240	0
,, Bombay	50	0
,, Military Hospitals in this Presidency	33	8½
,, Civil do. do	58	8
,, Collectors for sale and gratuitous distribution do. do.	132	8
Total...	514	8½

The greater portion of the issues in this Presidency has been to Collectors for sale and gratuitous distribution, and steps will now be taken to ascertain the respective quantities which have been sold and distributed gratis. It will be observed that the supplies sent to Calcutta for use in the Burdwan District exceed the total consumption in this Presidency. The rate at which amorphous quinine is sold to the public is Rupees 1-8-0 per ounce, that price having been fixed in G. O., No. 710, of 20th April 1871, in communication with Mr. Broughton. In paragraph 38 of this officer's report in G. O., No. 403, of 1st April 1874, it is stated that the expense of making each ounce of the amorphous preparation is now only 8 Annas 2 Pies, and as there is used in the manufacture a good deal of bark which in Europe would be commercially worthless, this should be considered when calculating the cost, and the selling price might now be reduced at least to half Rupee the ounce, which will probably be found a remunerative rate, and thus

the benevolent intentions of Government with regard to supplying a cheap febrifuge for the country at large would be in a measure met.

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ENCLOSURE No. 1.

Table showing the Results of Treatment of Malarious Fever by the Amorphous Alkaloids prepared from Indian-grown Barks.

Station.	Name of Medical Officer.	Type. Total Cases treated.	Quotidian.	Tertian.	Quartan.	Remittent.	Average Time under Treatment.	Average Quantity of Drug used.	Result. Cured.	Result. Doubtful.	Remarks.
							DAYS.	GRAINS.			
Lackady (Wynaad)	Hospl. Asst. T. Israel	563	480	57	29	...	73	1030·7	566	...	
	Do. C. T. Venkatroyooloo ...										
	Do. A. Parthasarathy Pillay and										
	Do. T. R. Dorasawmy Pillay ...										
Goodalore (do.)	Assistant Apothecary Wade	80	68	5	5	2	2·1	24	78	*2	* Patient did not return after first dose.
Upper Godavery Barrier Works	Asst. Surgeon Hazlett, ...	92	87	2	...	3	7·4	91·8	89	3	
	Do. A. E. Dalgairns ...	55	51	...	...	4	8·7	52	55	...	
Raneepett	Dr. Scudder	180	167	13	...	...	4·7	49·4	180	...	
11th Regiment N. I., Raepore...	Asst. Surgeon C. A. Harvey	268	232	36	...	...	4·3	19	268	...	One died.
South Arcot District. Kullacoorchy Taluq... ...	Syed Alli Mahomed	526	520	6	...	...	2	4·7	526	...	
Chengum and Trikaloor Taluqs	T. L. Thavasagayum Pillay	115	106	9	...	...	3·3	27·4	115	...	
Trinomalay Taluq	Syed Alli Mahomed										
	Total...	1,882	1,711	128	34	9	13·2	162·3	1,877	5	

(Signed) E. G. BALFOUR, Surgeon-Genl.,
Surgeon-General, I.M.D.

FORT ST. GEORGE,
23th April 1874.

No. 189

Surgeon
OFFICE OF INSPECTOR-GENERAL, I. M. D.,
Fort Saint George, 28th April 1874.

From Surgeon
~~INSPECTOR~~-GENERAL EDWARD BALFOUR,
~~*Inspector* General of Hospitals,~~
Indian Medical Department,
Fort Saint George,

To

The Secretary to Government
Revenue Department

SIR,

With reference to para 2 of G. O. No. 286 of 2nd March 1874, I have the honor to submit for the consideration of the Right Honorable the Governor in Council, the following remarks on the points raised by Her Majesty's Secretary of State for India, with regard to the use of Quinine, Cinchonidine, Quinidine, Cinchonine, and of amorphous Quinine in this Presidency.

2. In para 7 of his despatch the Secretary of State expresses sur-prise, that the valuable reports

Revenue 1874 Depart.
No. 1377.

From
The Surgeon General
of Hospitals
Indian Med. Dept.

To The Sec. to Govt.
Revs. Dept.

Dated 28 Dup. 29 Rec. 30 } April 1874.
No. 189.

C-1.

No. 388. 9 March 1875

Submits remarks regarding the use of Quinine, Cinchonidine &c.,

G. O. No. 70 — 11 May 1874
169 — 9 Nov —
31 — 2 Feb —
Circular Order

No. 388

To the Secretary to the Government of Madras
Public Department

Dated 28th April 1874.

Submitting remarks regarding the use of Quinine, Cinchonidine &c.

Received 30th April 1874.

Referred to the Board of Revenue for report.

(Signed) C. Lushington
Secretary to Government.

Fort St. George, 9th March 1875.

C 26/2311 dt. 6/3/75

of the Cinchona Commission of this Presidency should have borne so little fruit, in the way of encouraging medical men to use the other alkaloids in lieu of Quinine. And, with reference to this, I beg to explain, that in the year 1868, immediately after the Cinchona Commission's report established the therapeutical value of the Sulphates of Cinchonidine and Quinidine, the price charged for each of these articles was no less than £4 per lb. at a time when Quinine was being purchased at £3-4 per lb. On my predecessor becoming aware of this, he omitted Cinchonidine & Quinidine

Price of Cinchona alkaloids as given by Examiner of Medical accounts	
Sulphate of Quinine	Rs. 32
" Quinidine	40
" Cinchonidine	40
" Cinchonine	12.

altogether from his next annual indent, and observed, that "Quinine "has been indented for, in consequence "of the Examiner of Medical accounts "having intimated that, according to "the price list received by him, it is "cheaper than any of the new alkaloids "except Cinchonine." The omission of these alkaloids from the 1869 indent of course reduced the established proportion, which in turn diminished the issues in succeeding years, and thus the demands for these articles have fallen off. But, whilst the high price of the alkaloids prevented their being indented for, it is proper to say, that the profession generally have not acquired the same confidence in Cinchonidine, Quinidine and Cinchonine that they have in

in Quinine, and this feeling has also contributed to decrease the demands for the articles in the home indents. Like all other new remedies, it will take time to establish their reputation, more especially as they have to take the place of the well known quinine. Medical men may have a certain amount of confidence in their therapeutical value, and yet hesitate in critical cases to use them in preference to quinine, in which they have, from prolonged experience, the fullest reliance. A few officers indeed have little or no faith in the febrifuge properties of Quinidine, Cinchonidine and Cinchonine, and object to use them under any circumstances;

through the results of the trials carried out under the auspices of the Cinchona Commission and subsequent experience leave no doubt, that these preparations will, in course of time, occupy a much higher place in the list of febrifuges than has hitherto been accorded to them by the profession generally. The remedies must however be allowed to work their way on their own merits, without prejudice in favour.

3. I consider the suggestion of Mr Howard to encourage the use of Cinchonidine a most valuable one, and if, as he believes, it could ultimately be sold in Indian bazaars at one rupee per ounce, the boon to the fever-scourged people of this Presidency would be simply inestimable. The total deaths from

all

all causes registered in the Madras Presidency during 1872 were 508,152, and of these no less than 214,148 are attributed to Fever. From this death roll can be estimated the amount of fever cases not fatal, and of other diseases which fevers have called into existence, and from which the sufferers ultimately die. There is no popular want so pressing, at the present moment, as that of a cheap Cinchona febrifuge, as I firmly believe, that a vast amount of sickness and suffering, of which nothing is heard, and 50 per cent at least of the deaths which now take place from fever would be prevented by such an agent. I am further of opinion, that cinchonidine would fully meet this want, if supplied in sufficient quantity and at a low price, say one rupee per ounce. At this rate a poor man could, for one anna, obtain 27 grains of the drug, which in ordinary cases would probably be sufficient to cure an attack of fever. Considering, however, the very scant means and even poverty of a large body of the people, even one rupee the ounce is a high price if this drug is to become a febrifuge within the reach of the

it is proper to mention here, that I entertain grave doubts as to cinchonidine ever being supplied at that rate, even in Great Britain, putting aside freight and other charges which would be incurred before it reached Madras. But few barks would probably yield more than four per cent of the alkaloid, if so much.

so

so that it would require more than 1½ lb of bark to get one ounce of alkaloid. Assuming then that such rich bark could be purchased at eighteen pence per pound, it will be seen that the cost of the bark alone would exceed the price at which it is proposed to sell the alkaloid.

4. With regard to the therapeutical value of Cinchonidine, I need only quote the opinion of the Cinchona Commission, who say "that ordinary sulphate of quinine "and sulphate of quinidine possess "equal febrifuge power", and "that sulphate of Cinchonidine is only slightly less efficacious." It, therefore, Mr Howard's anticipation as to the price of Cinchonidine could only be realised, there would be no doubt about the propriety of making the febrifuge of the future, for the people of India. I must not omit to notice one advantage that it possesses, viz: its great resemblance to quinine, both in appearance and taste. The latter drug has now become quite familiar to the great bulk of the people, and it is of no little importance that the new article should resemble it in all points as nearly as possible. In fact a great many would look on Cinchonidine sulphate, as an old friend with a new name.

5. In the 6th para of his despatch the Secretary of State notices, that lately the indents for quinine and other Cinchona alkaloids from Madras have been smaller than the demands from Bombay, although

the latter is the lesser presidency, and wishes to know, whether the reduction in demand is due to the use of Mr. Broughton's local manufacture. In answer to this inquiry I have the honor to mention, that the issues of the Neilgherry preparation from 1870, the year of its introduction, to March 1874, inclusive, have been as per margin, and there can be no doubt that they have reduced the consumption of the European preparations to an extent commensurate with the total quantities used of the local manufacture. It will be observed that the issues during 1873 were considerably less than in the two preceding years. This was chiefly due to the available stock of the

	lb	oz
1870 Issues	8	6
1871 "	89	10
1872 "	85	10
1873 "	30	2
1874 "	10	12
Total lbs	224	8/2

the "amorphous quinine" having been reduced by the transmission in the course of the year of 160 lbs. in two instalments, to Calcutta; and 50 lbs to Bombay. The first supply to Calcutta was forwarded in February 1873, to meet a demand for cinchona alkaloids, during the outbreak of Burdwan fever, and as a subsequent demand was made in September 1873 for another supply of the local preparation, it is legitimate to infer, that the drug had been found efficacious in the treatment of the severe type of fever which was then ravaging that part of Bengal and a further supply of 80 lb. has since been sent to Calcutta in January 1874.

6 In para. 5 I have given a statement of the Annual supplies of the Neilgherry "Amorphous quinine"

for

furnished to the Medical department, and it now only remains to notice, in compliance with the request in para 5 of the Secretary of State's despatch, "the quantity that has "been sold to the public, with the "price, and the judgment that "has been formed with reference "to its efficacy." I therefore place in the margin a statement, showing the issues that have been made to hospitals and to Civil authorities for sale & gratuitous distribution, during each year, since its first introduction. From the statement given in this and the preceding para it will be gathered,

		lb	oz
1870			
To Military Hospitals		.	1/2
" Civil		8	6
1871			
" Military Hospitals		.	.
" Civil		21	.
" Collectors for sale and gratuitous distribution		48	.
1872			
" Military Hospitals		6	.
" Civil		8	10
" Collectors for sale and gratuitous distribution		71	.
1873			
" Military Hospitals		6	12
" Civil		13	14
" Collectors for sale and gratuitous distributions		9	8
1874	3 months		
" Military Hospitals		.	2
" Civil		6	10
" Collectors for sale & gratuitous distributions		4	.
	Total lb.	224	8 1/2

that the total supplies of the Neilgherry preparation sent to the Medical store Depot Madras, have been disposed of as follows;

	lb	oz
To Calcutta	240	0
" Bombay	50	.
" Military Hospitals in this Presidency	33	8 1/2
" Civil do do	58	8
" Collectors for sale & gratuitous distribution do do	132	8
Total lb.	514	8 1/2

The greater portion of the issues in this Presidency has been to Collectors for sale and gratuitous distribution, and steps will now be taken to ascertain the respective quantities which have been sold and distributed gratis. It will be observed that the supplies sent to Calcutta, for use in the Bundevan district, exceed the total Consumption in this Presidency. The rate at which amorphous quinine is sold to the

public is Rs 1-8-. per ounce that price having been fixed in G.O. № 710 of 20 April 1871. in communication with Mr. Broughton. In para 38 of this Officers report in G.O № 408 of 1st April 1874 it is stated that the expense of making each ounce of the amorphous preparation is now only 8 annas 2 pice and as then is used in the manufacture a good deal of bark which in Europe would be commercially worthless, this should be considered when calculating the cost and the selling price might now be reduced at least to half a rupee the ounce which will probably be found a remunerative rate, and thus the benevolent intentions of Government with regard to supplying a cheap febrifuge for the country at large would be

in a measure

7 It now remains to notice the judgment that has been formed by the Medical Department with reference to the efficacy of the amorphous preparation as a febrifuge With a view of submitting it to a rigorous test, small quantities of the drug have been, from time to time, supplied to Civil and Military hospitals, some of which are situated on notoriously malarious districts. At the same time blank forms, similar to those used by the Cinchona Commission, were issued for the tabulation of results, so that the qualities of the febrifuge might be subjected to the logic of figures. I append a table shewing the results of the whole of these trials. Altogether 1882 Cases were treated with the drug, and of this number 1711 were of the

quotidian, 128 of the tertian, 34 of the quartan and 9 of the remittent type. There was thus in the variety of type ample scope for a searching test of the febrifuge powers of the new preparation, while on the other hand the fever met with in some of the districts, in which the experiments were conducted, is of a most obstinate character and very frequently accompanied with dangerous complications. To these latter, peculiarities in the nature of the fever at Lackady, in Wynaad, are to be attributed, partly the great length of time the patients were under treatment, and the large consumption of the febrifuge. On the whole the results are favorable, and but for the Lackady figures they might have been pronounced very satisfactory. Out of the 1882 cases that came under treatment, it will be observed, that in only 4 instances did the drug fail to effect a cure. In one case the final result was not known, as the patient did not return after the first dose. The average time that each patient was under treatment was 13·2 days, and the average quantity of the drug administered from first to last in each case 16.2·3 grains. These high averages are chiefly due to the Lackady figures. As already stated fevers contracted in that neighbourhood are very obstinate and often complicated with other affections, and it is therefore quite possible, that the Hospital Assistants who conducted the experiments may have allowed cases to remain under the heading of fever, not only till the paroxysms were checked, but also till the complications of the disease were

finally cured. Indeed there seems no other method of accounting for the very exceptional results recorded at this place. At Godalore, another Wynaad station, the type of fever may be said to be identical with that prevailing at Lackady, and yet the results were very different. Putting the Lackady figures aside, the remaining results show that under the use of Amorphous quinine a cure is effected in a period nearly the same as that required by Cinchonidine, Quinidine, or Quinine, but with a somewhat larger expenditure of the drug. In submitting the returns of results of treatment, Medical Officers commented in some instances most favorably, in others less so, on the properties of this new febrifuge, but I have not deemed it necessary to transcribe these, as the tabular statement contains the pith of the whole, and will place before Government the facts from which I have formed my opinion. In conclusion I beg to state briefly, that "amorphous quinine" is a sure febrifuge, but little inferior to the European Cinchona alkaloids, and that if it can be sold at one rupee per ounce, or a cheaper rate, it is extremely desirable that it should be manufactured in larger quantities.

I have the honor to be
Sir
Your most Obedt. Servant
Lawson Watson Surgeon Genl.
Surgeon General
Indian Medl Department.

From
Surg
Inspector-General E. Balfour,
Inspector-General of Hospitals,
Indian Medical Department
Fort Saint Geo

To
The Secy to Govt
Mad Pres

Dated 28.
Despatched 29.
Received 30.

No 159

Subject.

Table shewing the results of treatment of Malaneous Fever, by the Amorphous Alkaloids prepared from Indian grown barks.

Station	Name of Medical Officer	Total Cases treated	Type. Quotidian	Tertian	Quartan	Remittent	Average time on the treatment. Days	Average quantity of drug used. Grains	Result. Cured	Result. Deaths	Remarks
Lackady (Wynaad)	Hospl assts J. Israel, C. J. Vaykatasoyalo, A. Parthasaratty Pillay & R. A. Doraisawmy Pillay.	566	480	57	29	"	7·3	1030·7	566	"	
										*	Patient did not return after first dose
Goodalore (— do —)	Asst Apothy Wade.	80	68	5	5	2	2·1	24	78	2	
Upper Godavery Barrier Works	Assist Surgeons. Hazlett & A. E. Dalgairns	92	87	2	.	3.	7·4	91·8	89	3	
Ramenpette	Dr Scudder	55	51	.	.	4	8·7	52	55	.	
11th Regt N.I. Raepore	Asst Surg C. A. Harvey	180	167	13	.	.	4·7	49·4	180	.	
South Arcot district: Kullacoorchy Taluq	Syed Allie Mahomed.	268	232	36	"	"	4·3	19	268	.	1 Died.
Chengum & Tirukaloor Taluqs	T. T. Thavasagayum Pillay	526	520	6	"	.	2	4·7	526	"	
Tirumalay Taluq	Syed Allie Mahomed	115	106	9	"	"	3·3	27·4	115	"	
	Total.	1882	1711	128	34	9	13·2	162·3	1877	5	

Fort Saint George
28th April 1874

Edwd Balfour Surgeon Genl
Surg Genl i/c M.D.

COMMISSIONER'S OFFICE,

No. 130

Ootacamund 28th September 1878.

From R. W. Barlow Esquire
COMMISSIONER NILGIRIS

To The Secretary to Government
Revenue Department
Ootacamund

Sir,

I have the honor to request that Government will be good as to inform me, how many copies of the report of the Cinchona Committee, they wish printed and sent to them.

I have the honor to be
Sir
your most obedient servant

R W Barlow
Commissioner

No 4313

Revenue 1878 - Dept.

No. 130

Date— 28th Sept 78

Rec'd 30 do

Commissioner's Office,
Ootacamund

To No 2492 dated 8th October 1878

The Secretary to
Government
Rev. Department
Ootacamund

Enclosures. 30 "

Report

SUBJECT.

Requesting to be informed of the number of copies of the report of the Cinchona Committee the government wish printed and sent to them.

71 * 28.

No 10

No 2492

8th October 1878

C 5-10-78
R 2-10-78