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MADRAS RECORD OFFICE.

Government of Madras.

Revenue **DEPARTMENT.**

G.O. No.	6644	Press / Mis.
Dated	2-11-	18 87.

Not to be folded or roughly handled

DF
31-8-38

No. 569.

FROM

J. P. HEWETT, ESQ.,

Offg. Under-Secy. to the Government of India,

To

The Chief Secretary to the Govt. of Madras.

Home Department.
Medical.

Simla, the 19 October 1887.

SIR,

WITH reference to the correspondence ending with your endorsement No. 286 A dated 15 March 1887, I am directed to forward the accompanying copy of a Despatch* from Her Majesty's Secretary of State for India, and enclosures, and to request that, with the permission of His Excellency the Governor in Council, three copies of the annual reports on the cultivation of Cinchona and the manufacture of the febrifuge, together with copies of any special reports which may be published on these subjects, may, in future, be regularly sent to the India Office for the use of the Government of Jamaica.

* No. 65 (Revenue), dated 25th August 1887.

I have the honour to be,

SIR,

Your most obedient servant,

J. P. Hewett

Offg. Under-Secy. to the Government of India.

G. C. Press, Simla.—No. 1163 H. D.—12-10-87.—83.

INDIA OFFICE;
London, 25th August 1887.

Revenue.
No. 65.

His Excellency The Right Honourable The Governor General of India in Council.

MY LORD,—Referring to the letter of Your Excellency's Government noted in the margin, which, with its enclosures, was duly transmitted to the Colonial Office, I forward herewith copy of a despatch from the Governor of Jamaica, with accompaniments, which has been received from that Department with an expression of the wish of Secretary Sir Henry Holland that your Government may continue to furnish for the use of the Government of Jamaica the results of your experience in the cultivation of Cinchona and manufacture of Febrifuge therefrom.

No. 29 of 10th May 1887. Home Department, Public, Medical

I have the honour to be,

MY LORD,

Your Lordship's most obedient, humble Servant,

CROSS.

No. 208, dated Jamaica, 2nd July 1887.

From—SIR H. NORMAN, Governor of Jamaica,

To—SIR H. HOLLAND, Secretary of State for the Colonies.

WITH reference to your Despatch No. 29 of the 20th February last, forwarding for my information copy of a letter from the Director of the Royal Gardens, Kew, to whom had been sent a copy of my despatch respecting the value of Cinchona Febrifuge as tested in this Colony, I have the honour to inform you that I have again procured a report from the Superintending Medical Officer on the matter in connection with Mr. Shiselton's Dyer's report which was communicated to the former officer.

2. It appears that the cost of Quinine landed here is Rs. 2-3½ per oz.; whilst the Febrifuge procured from India cost Rs. 2-10½ per oz.; and the Superintending Medical Officer observes that if the relative therapeutical value be taken into account, the figures would stand as Rs. 2-3½ to Rs. 11-5 per oz. As regards the relative commercial value of Febrifuge and Quinine quoted by Mr. Dyer as existing in Calcutta, the Superintending Medical Officer points out that it must not be overlooked that one part of Quinine possesses more therapeutical value than four parts of Febrifuge, and the former is eminently reliable while the latter in experienced hands here and in Trinidad proved the reverse.

3. The Superintending Medical Officer also points out that in India, judging from the figures quoted by Mr. Dyer, the consumption of the Febrifuge is comparatively small if the area and population be taken into account.

4. The figures quoted by Dr. Mope seem to prove the economical advantages of the prepared Sulphate of Quinine even over the Febrifuge manufactured locally at a cost of Rs. 2-4 as computed by the late Director of Public Gardens and Plantations in a memorandum of which I enclose a copy.

5. I beg leave to enclose also for your information a copy of a communication from Mr. Fawcett, the present Director of Public Gardens and Plantations, containing remarks relative to the Cinchona Febrifuge and its economic

use in the West Indies. It will be seen that Mr. Fawcett's argument proceeds on a different estimate of the therapeutic value of the Febrifuge from that given by the Superintending Medical Officer, and assumes that the value of the two preparations is nearly equal, but of course on such a point the professional opinion of the latter must be accepted.

6. As a means of reconciling the somewhat divergent views now existing and securing a due consideration of the subject of the value of the Cinchona Febrifuge in all respects, I have caused an instruction to be issued to the Superintending Medical Officer, the Director of Public Gardens and Plantations, and the Government Analytical Chemist to consider themselves a standing Committee to test and to report half-yearly on the progress of the question.

7. Meanwhile I should be much obliged if the Government of India could be asked to continue to furnish this Government from time to time with the results of their experience in the matter; and I would ask that, if not inconvenient, the blue books referred to at the end of Mr. Fawcett's letter may be supplied.

8. I have made a communication to the other West Indian Colonies inviting them to join in the investigation of the value of the Febrifuge by testing its effects and results, economic as well as therapeutic, and I have offered to furnish on application any further small supply which may be desired.

Dated 12th January 1886.

Memo. from—D. Morris, Esq.,

To—The Secretary of State for the Colonies.

The bark supplied to the Government Analytical Chemist was purposely selected of low quality, in order to test the fact whether it was worth while to work up such bark in the island where it would not pay to export it.

The result is not very satisfactory.

	£	s.	d.
2. The 1st value of the bark supplied is ...	26	12	6
The cost of manufacture	24	9	10
	51	2	4

Hence 27 pounds of Febrifuge cost 37*s.* 10*d.* per pound, or 2·4 per oz.

3. In the recent letter published in the Jamaica Gazette Messrs. Jenkin and Phillips quoted English Sulphate of Quinine at 3*s.* 10*d.* per oz. in bulk, but this Febrifuge in the market would not be worth anything like Quinine Sulphate. Again Indian Febrifuge is produced at Rs. 8 or about 16*s.* per lb., with bark charged at an average of 4*d.* per lb.

The bark yielded 227 of total alkaloids; hence on the whole the bark was not inferior to much sold in the London market and shipped in large quantities from Ceylon.

4. The Analytical Chemist does not state whether, having the apparatus and chemicals at hand, he can prepare future lots of Febrifuge at a lower cost. This is a question well worthy of consideration. I would suggest that sample lots of the Febrifuge be distributed as at first intended, and the opinion of the Medical Department in this and other Islands be obtained thereon.

5. I shall be glad of 3 lbs. of the Febrifuge for sending to the Pharmaceutical Society of Great Britain, to the Royal Gardens, Kew, and to the Smith Roman Institution, United States of America. From these Institutions we shall obtain some opinion respecting the character and value of the Febrifuge which may be afterwards published with those obtained from the Medical Department.

Calculation.

Cost of Bark.

				£	s.	d.
239 lbs.	@	1	...	11	19	0
302 „	@	4	...	5	0	8
513 „	@	4	...	8	11	0
131 „	@	2	...	1	1	10
			Total cost of Bark ...	26	12	6
			Cost of manufacture ...	24	9	10
				51	2	4

		£	s.	d.
27 lbs.	Cinchona Febrifuge costs	51	2	4
1 lb.	„ „	1	17	10
1 oz.	„ „	0	2	4

Percentage of Febrifuge or total alkaloid extracted=2·27 per cent.

No. 1837, dated Jamaica, 6th June 1887.

From—W. Fawcett, Esq., Director, Public Gardens and Plantations at Kew,

To—The Secretary of State for the Colonies.

I have the honor to make the following remarks relating to Cinchona Febrifuge submitted to Government by the heads of the Medical Department in Jamaica, Trinidad, and Barbados by the Island Chemist in Jamaica.

2. The question of the use of the Febrifuge in medical practice is one which can only be appreciated properly by medical men, and must ultimately be left to their decision.

3. But it appears from these papers that there is a variety of opinions amongst them which can only result from differences of the material made use of, or from insufficiency of experiments to eliminate the element of chance causes, acting in conjunction with the Febrifuge administered.

4. Dr. Henderson tells me that out of 147 cases in which he has administered the Febrifuge only three have failed. I understand that he has studied the question of the extraction as well as administration of Quinine and other alkaloids in London, and it might be advisable to ask him for a report on the whole subject.

5. I believe from a short conversation which I had on the subject with the Superintending Medical Officer that he himself thinks that more experiments are necessary, and, as appears from his note on the cases, he is merely summing up the opinions of those to whom he sent the Febrifuge for trial, and as not giving his own judgement founded on his own practice.

6. The question arises whether, supposing it were proved that the Febrifuge is, as is asserted, of merely equal value therapeutically with Quinine, it is advisable for the Government to adopt its use in hospitals and dispensaries.

7. Such a course would probably be followed either from a consideration of a saving of expense, or, if that were immaterial, from some other benefit accruing to the whole or a portion of the community.

8. With regard to the cost of production, Mr. Bowrey was good enough to explain to me the process invented by Wood in India, and employed by himself, and also to shew me the details in actual operation at the laboratory. These are so simple that under the supervision of Mr. Bowrey an intelligent workman at 20*s.* a week could very soon master them, and could be almost entirely trusted with this manufacture.

9. The cost of grinding the bark and of chemicals for the extraction of the alkaloids is, according to Mr. Bowrey 6*d.* an oz. But the grinding by hand is a very expensive operation, costing as much as £3 10*s.* per 10 cwts.; that is, 2⅓*d.* per oz. of Febrifuge calculating from the sample of bark of 12 cwts., which produced 27 lbs. of Febrifuge. If this was a fair average sample of bark, the price of chemicals is about 3⅓*d.* per oz. Mr. Bowrey tells me that if grinding were done by steam it would not cost $\frac{1}{10}$ th of that he pays now.

10. If a man @ 20*s.* worked up 2 cwts. a week, the cost of labour would be, say, ⅓*d.* per oz. of Febrifuge.

11. The cost of the plant used at present consisting merely of a few casks, calico filters, and such cheap articles is so trifling that in the manufacture of any large amount it might be altogether neglected. But if steam machinery were used for grinding, a small addition would have to be made for interest on first outlay.

12. Putting together the cost of chemicals of labour, and the interest on outlay for plant, each oz. of Febrifuge should not cost more than 4½*d.* at the outside.

13. Supposing that 12 cwts. of bark gives on average 27 lbs. of Febrifuge, 1 oz. of the latter requires 3⅓ lbs. of bark. Taking 8*d.* per lb. at the present price of bark, which is somewhat more than the average price realised by Jamaica bark at the last sales, 1 oz. of Febrifuge will cost in raw material of bark about 2*s.* 1*d.*

14. Thus, the total cost brings the price of Febrifuge to about 2-5½ per oz.

15. Mr. Butler, Keeper of the Medical Stores, states that the price which the Medical Department pays for Indian Febrifuge is 2-10½ per oz., while the price of Quinine is 2-9⅓ per oz., and also that the cost price of the Febrifuge is about 1*d.* per oz. less; that is, about 2-9½ (there is no information as to the estimate of the value of the Government bark used). Purchasers of Quinine from Kingston druggists would, however, find the price much higher and probably would be glad to have the opportunity of getting the Febrifuge at a lower price. Dr. Mode writes to me (31st May 1887) that "a preparation of Cinchona alkaloids possessing similar chemical characters to Cinchona Febrifuge minus the coloring matter can now be prepared here for 1*s.* 3*d.* per oz."

Quinine	...	...	40 parts.
Cinchona oil	...	...	50 „
Cinchonine	...	...	8 „
Impurities	...	...	2 „
			100

There is evidently some mistake in the calculation, for the price of the Quinine alone in the mixture is 1*s.* 1¼*d.*

16. Any rise in the market prices of Cinchona bark, and such rise may I think, be looked for, while increasing the cost of the Febrifuge, would in a much greater proportion increase the price of Quinine, and this for the following reasons.

Quinine is only one out of several febrifugal alkaloids contained in the bark, the rest of which are wasted by its manufacture. Species of Cinchona vary much in the relative proportion of Quinine to other alkaloids which they contain. It costs as much to extract a small quantity of Quinine from a bark poor in that particular alkaloid as a large quantity from another bark which is rich. When the market is low, it may pay the quinine manufacture to use barks with a low percentage of Quinine As it rises, that is as the supply becomes less able to meet the demand, barks with little Quinine will be rejected by the Quinine manufacturer in proportion to the amount. The Febrifuge manufacturer will not be affected to such an extent, for he will have the rejected barks to deal with. Quinine should therefore rise in price much more

rapidly than Febrifuge, and the higher the price of bark the greater the difference between the two. Quinine might readily rise to such a price that the difference between it and Febrifuge would be 6*d.* an oz; for instance, the saving effected by Government on, say, half the amount used could be ascertained on reference to the accounts of the Medical Stores. The saving to private purchasers would also be great.

17. But even if no saving could be effected in this way, there would be an advantage in using the bark on the spot where it was grown, the cost of freight, brokerage, &c., would be saved, which on the last shipment by Government will probably be over £70.

18. The use of Jamaica-made Febrifuge would, no doubt, extend to the rest of the West Indian Colonies and to the southern portions of the United States, and in such case the area under cultivation of Cinchona would probably extend throughout the whole of the Bhil Mountain District of suitable elevation.

19. I have ventured to make my remarks somewhat full, because I am convinced that the question is of great importance to the Colony; and being so, I would beg to suggest that some further experiments be undertaken in the West Indies, and that some fuller information be obtained from the Indian Government. It would be of the greatest advantage to the Botanical Department if the Secretary to the Colonies would make a grant of the series of blue books on East Indian Cinchona, the first of which was printed in 1863.

G. C. Press, Simla. No. 1164 H. D.—14-10-87.—75.

21.2.06
25.7.05 √ 22.2.06 √ 12.7.05

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G.O. to

Communicated to the Director of Govt Cinchona Plantations and the Surgeon General with the Govt

WMS 31/10

[9] Revenue 1889. DEPARTMENT.

No. 8531

From The Govt. of India
Home Dept.

DISPOSED OF BY GOVT ORDER
Ms. No.
Date 2

No. 566

Dated 14th
Received 20th } Oct. 1889.

Enclosures 1

Secs. 5-6 { The Govt Botanist 10 Nov 1889 + 8 Nov +
& Surg. Genl with the Govt of Madras. 10 Nov 1889 + 7 Nov

SUBJECT.

Requesting that 3 copies of the annual reports on the cultivation of cinchona and the manufacture of febrifuge, together with copies of any special reports which may be published on these subjects, may in future be regularly sent to India, free for use of Govt. of Jamaica.

Note. The Director will note the instructions of the Govt of India. Blue Papers will be selected every week, along with those for Kew. A list of Cinchona papers since the beginning of this year will also be made.

WMS 31/10

W.T.D.

Dept.

D.T.D.