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(3) Initials of the Referencer G

MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No. 2999

Press
Mis.

Dated 17.12.

1867.

Not to be folded or roughly handled

17

*Proceedings of the Madras Government, Revenue Department,
17th December 1867.*

No. 306. Read the following Despatch from the Right Honorable the Secretary of State for India, (Public,) to His Excellency the Right Honorable the Governor in Council, Fort St. George, dated India Office, London, 8th November 1867, No. 42:—

1. I have received and considered in Council your Despatches in the Revenue Department of the dates and numbers noted in the margin,* on the subject of Chinchona cultivation; and with reference to your Despatch, dated May 13th (No. 31), 1867, forwarding specimens of

* No 39, 11th July 1867.
 „ 50, 12th August 1867.
 „ 55, 27th „ „

Dated 28th August 1867.

the bark of *C. officinalis*, I herewith transmit forty copies of Mr. Howard's Report of his analysis, the results of which are very satisfactory.

2. I have perused the annual report of Mr. McIvor, and the report of Mr. Broughton on the results of an analytical examination of the barks grown on the Government plantations, with much interest. Mr. Broughton appears to have entered upon his duties with much zeal, and to appreciate the importance of the numerous points connected with Chinchona cultivation which require careful investigation. I trust that valuable results will be derived from his analyses.

Report of an Analysis of the Sixth Remittance of Bark from India.

From J. E. HOWARD, Esq., F. L. S., to the Under Secretary of State for India, August 28th, 1867.

I have to report on four samples of Neilgherry Chinchona barks forwarded to me for analysis, with a view of throwing more light on the efficiency of mossing. The “mossed *crespilla* bark” is improved in appearance,* as well as in produce. The “strong growing variety of *C. officinalis*” exactly reproduces the bark called *colorada del Bay de Loja*, and is therefore the *C. officinalis*, var. *Bonplandiana*, *colorata*. The *C. Britusinga* bark has a poor and sickly look, reminding of the circumstances under which this plant has been grown, including the effects of the sun-stroke from which it suffered on first reaching India. The bark of *C. Pahudiana* is improved in produce of alkaloid, but would not find so much favor in the eyes of ordinary purchasers as the more slender quills last sent.

No. 1. Mossed *crespilla* bark, 3½ years old:—

Crystallized sulphates, per 100 parts	...	...	2.46
Alkaloids soluble in ether, chiefly uncrystallized quinine†	...	...	0.44
Insoluble in ether (chinchonine and chinchonine)‡	...	...	0.86
			3.76

* It now resembles more the *Loja nouveau* of Jussieu.

† The remainder probably chinchonidine. I neglected to substitute the word chinchonidine for the word quinine in treating of the var. *crispa* in my last report. The analyses in which it appears were quoted *verbatim* from Pereira, and were made fourteen or fifteen years ago, when accuracy as to this discrimination was not valued as it now is. I have no reason, from recent analysis, to believe that quinine is contained in the Loja barks.

‡ The amount of crystallized chinchonine is small in all the Loja barks.

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No. 2. Strong growing variety of *C. officinalis*, 3½ years old :—

Crystallized sulphates	...	...	...	...	2.92
Soluble in ether (chinchonidine and quinine)	...	...	...	...	0.41
Insoluble in ether (chinchonicine and chinchonine)	...	...	...	...	1.20
					4.53

No. 3. *C. Uritusinga*, received from Mr. Howard, original bark :—

Total weight of precipitated alkaloids	...	...	...	...	2.43
Oxalate quinine	...	...	...	...	1.40
Uncrystallized quinine	...	...	...	...	0.17
Chinchonicine	...	...	...	...	0.70
Resin and loss	...	...	...	...	0.16
					2.43

No. 4. *C. Pahudiana*, under moss, 5 years old :—

Crystallized sulphates	...	...	...	...	1.60
Soluble in ether (quinine and aricine ?)	...	...	...	...	0.61
Insoluble in ether (chinchonine), a trace.					
					2.21

Memorandum.—None of the above crystallized sulphates would perfectly stand the test, all containing a little chinchonidine. The same remark applies to a portion (the second crystallization) of oxalate quinine.

I adopted for No. 3 the plan of securing the total weight of alkaloid in the first instance, as I was uncertain of any further result, having only 300 grains of bark to work upon, and that of poor quality. This plan is, however, deceptive, the alkaloids not being purified. The loss is also more than is apparent, since the amount of the oxalic acid must be added for minute accuracy.

The deductions from the foregoing analysis seem to me to be the following :—

The mossed *crepillia* bark is surprisingly improved by the treatment to which it has been subjected. I think that, in the former trial, some portion of the alkaloid must have been unconsciously lost in connexion with the abundant coloring matter which distinguishes this sort, but with all this improvement, it scarcely equals No. 2, the strong-growing variety, or *C. officinalis*, var. *Bonplandiana*, in its natural state. This latter gave me, as last sent, more than 6.50 per cent. of crystallized sulphate, and is consequently by so much (about three times) more worth cultivating. The No. 3, *Uritusinga* bark, is remarkable for the small amount of coloring matter which it contains, and the consequent ease with which the alkaloids can be purified. It will probably yield a large amount of produce under good cultivation. No. 4, *C. Pahudiana*, is improved by mossing, but I have no confidence in it as a source of quinine, and believe it will prove to be most valuable as furnishing a new sort of "rusty bark," or "rusty crown bark," as it would probably be called in commerce, and, as I mentioned in my last, would command a good price in this way, if imported in long and slender quills.

Since the last Report, I have received from Mr. McIvor well prepared specimens of the flowering branches, the fruit, &c., of the different sorts. Amongst these, the *C. officinalis*, var. *Bonplandiana*, and the *Uritusinga*, reproduce exactly those grown in South America, but it is not so with the *crispa*, which seems to be represented by several more or less distinct varieties. These are all elegant, and apparently delicately formed sorts; and one, having (according to McIvor) the habit of the weeping willow, might be called the var. *dependens*. It remains to be seen what their special commercial value may be. The *crispa* (as gathered by Seemann) is distinguished by very hirsute scrobicules, and these are reproduced (but irregularly) in a number of plants of this sort which I have raised from seed received from Mr. Thwaites, but I cannot find

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17th December 1867.

them in the specimens from Ootacamund. I miss them also in some very healthy plants, which now (in October) are growing in the open air in my garden. Possibly climate may influence their production.

No. 307. ORDER THEREON, 17th December 1867, No. 2,999.

Miscellaneous.

13th May 1867, No. 1,077.
20th June " " 1,367.
26th July " " 1,711.
27th Aug. " " 2,005.

Communicated, together with copies of the enclosure, to the Superintendent of the Government Chinchona Plantations and to Mr. Broughton, with reference to the Orders of Government marginally noted.

(True Extract.)

(Signed) W. HUDLESTON,
Secretary to Government.

To the Superintendent Government Chinchona Plantations.
,, J. Broughton, Esq.

with the Inspection General Indian Medicines
the Board of Revenue

Exd. S. T. Augustin.

2372

31

India Office,
London, 8th November 1867.

Public,
No. 42

To His Excellency The Right Honourable The Governor
in Council, Fort St. George.

MY LORD

Para. 1. I have received and considered in Council your Despatches in the Revenue Department of the dates and numbers noted in the margin,* on the subject of Chinchona cultivation; and with reference to your Despatch, dated May 13th (No. 31), 1867, forwarding specimens of the bark of *C. officinalis*, I herewith transmit forty copies of Mr. Howard's report of his analysis, the results of which are very satisfactory.

Dated 28th
Aug. 1867.

2. I have perused the annual report of Mr. M'Ivor, and the report of Mr. Broughton on the results of an analytical examination of the barks grown on the Government plantations with much interest. Mr. Broughton appears to have entered upon his duties with much zeal, and to appreciate the importance of the numerous points connected with Chinchona cultivation which require careful investigation. I trust that valuable results will be derived from his analyses.

I have the honour to be,
My Lord,
Your Lordship's most obedient, humble Servant,

Rafael H. Mitchell

W. H. Mitchell
W. H.

Mr Howard's report has not been circulated. Should like to see it.
8540.
copy sent to Mr. Howard

W-2999
 Communicate, together with copies of
 the enclosure, to the Superintendent of the Govt. plantation
 at Georgetown and to Mr. Broughton with reference to
 the order of Govt. marginally noted -

25 May 1867, No. 1074 -
 14 June - 11-1367 -
 25 July - 11-1711 -
 27 August - 11-2005 -

1244 Suplt Govt. thin: Plantations with report
 1 - 11-1711 - 11-2005
 2 - 11-1711 - 11-2005
 14 - 11-2005 - 11-2005

Ms
 Return 1867, J. M. L. L. L.
 No. of Govt. of 1867
 The
 Letter to Govt. of 1867
 No. 112

Received 8th Decem.
 1867.
 via
 Marseille

Print the enclosure
 Das

Transmitting for
 copies of Mr. Steward's report of
 his analysis of the specimens of the
 bark C. officinalis forwarded in
 May last and receiving the annual
 report of Mr. M. J. J. and the
 report of Mr. Broughton on the
 results of an analytical examina-
 tion of the bark grown in the
 Govt. plantations
 No. 2999 - 11-2005
 with order -

Received 8th Decem. 1867.
 via Marseille.