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MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No. 1336 Press Mis.

Dated 23 6 1879.

Not to be folded or roughly handled

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

23rd June 1879, No. 1,336.

No. 351. READ THE FOLLOWING PAPER :—

Despatch from the Right Honorable the Secretary of State for India.

Revenue,
No. 13.

INDIA OFFICE, LONDON,
8th May 1879.

MY LORD DUKE,—On receipt of your Grace's letter, No. 47, of the 31st October last, and of the box of samples of chinchona bark therein referred to, the latter, together with copies of the particulars relating thereto, were forwarded to Dr. B. H. Paul with a request that he would make an analysis of the several specimens sent.

2. A copy of Dr. Paul's report is transmitted herewith for your information.

I have, &c.,

To His Excellency the Most Noble
The Governor in Council, Fort St. George.

(Signed) CRANBROOK.

ENCLOSURE No. 1.

From Dr. B. H. PAUL, F.C.S., Consulting Chemist, 106, Fenchurch Street, E.C., to the Under Secretary of State for India, dated Analytical Laboratory, 1, Victoria Street, S.W., London, 17th April 1879.

Nilgiri Chinchona Bark.

HAVING now completed the analysis of the forty-five samples of bark from the Government Chinchona Plantations at Neddiwuttum, Pykara, and Dodabetta, I beg to submit to you, as stated below, the results that have been obtained :—

	Percentage Amounts of					Crystallized Quinine Sulphate.
	Quinine.	Quinidine.	Chinchonidine.	Chinchonine.	Amorphous Alkaloid.	
NEDDIWUTTUM.						
Red Bark.						
1. Mossed	0·78	...	3·16	2·85	0·74	1·05
2. Unmossed	1·60	...	3·32	2·30	0·64	2·16
3. Renewed	1·86	...	1·97	2·45	0·61	2·51
Yellow Bark.						
4. Unmossed	4·92	...	1·56	0·62	0·70	6·63
5. Mossed	4·29	...	2·04	0 60	0·43	5·78
Red Bark.						
6. Unmossed	0·71	...	4·59	0·50	0·68	0·96
Crown Bark.						
7. Renewed	1·47	0·15	0·50	0·06	0·18	1·99
Hybrid.						
8. Unmossed	0·69	...	0·84	1·40	0·60	0·93
Crown Bark.						
9. Mossed	3·53	0·08	1·33	0·20	0·26	4·75

—	Percentage Amounts of					Crystallized Quinine Sulphate.
	Quinine.	Quinidine.	Chinchonidine.	Cinchonine.	Amorphous Alkaloid.	
Hybrid pubescens.						
10. Renewed	3·61	0·64	1·03	0·27	0·49	4·99
11. Unmossed	2·30	0·16	2·30	0·72	0·10	3·10
Red Bark.						
12.	1·06	...	3·16	1·22	0·79	1·43
13. Unmossed hybrid ...	0·43	...	2·68	0·51	0·55	0·58
14. Real coppice bark ...	0·84	...	2·68	1·05	0·92	1·13
PYKARA HOOKER.						
Grey Bark.						
1. Unmossed	0·30	...	4·73	1·87	0·32	0·41
Red Bark.						
2. Unmossed	0·84	...	2·54	1·50	0·69	1·13
3. Mossed...	0·73	...	4·84	1·50	0·70	0·99
Crown Bark.						
4. Renewed	2·20	0·25	1·01	0·50	0·20	2·97
Red Bark.						
5. Renewed	1·54	0·07	1·71	1·90	0·43	2·08
PYKARA WOOD.						
6. Renewed.	1·95	0·13	1·44	2·27	0·44	2·63
7. Unmossed	0·73	trace.	2·57	1·45	0·31	0·99
8. Mossed	1·44	0·07	2·60	2·55	0·54	1·95
Crown Bark.						
9. Renewed	2·16	0·14	0·82	0·20	0·24	2·91
Grey Bark.						
10. Unmossed	0·05	0·03	2·26	0·90	0·45	0·07
DODABETTA.						
Crown Bark.						
1. Naturel...	2·85	0·14	1·36	0·24	0·20	3·84
2. Mossed	3·15	0·28	1·30	0·44	0·20	4·24
3. Renewed	1·96	0·30	0·28	0·24	0·54	2·64
3-A. Branch	1·74	0·09	0·84	0·12	0·10	2·34
4. Naturel...	1·43	trace.	0·74	0·08	0·10	1·92
5. Mossed	3·03	0·04	1·67	0·14	0·14	4·08
6. Do.	3·55	0·10	1·90	0·82	0·31	4·78
7. Naturel...	1·56	0·12	2·15	1·05	0·14	2·10
C. Angustifolia.						
8. Naturel	2·06	0·10	1·60	0·16	0·20	2·78
9. Mossed	4·86	0·17	1·88	0·26	0·30	6·54
10. Hybrid pubescens ...	2·12	trace.	4·77	0·22	0·28	2·86
11. Do. mossed ...	1·78	0·07	2·72	0·58	0·24	2·40
12. Do. renewed ...	3·03	0·12	1·71	0·24	0·20	4·08
C. Pahudiana.						
13. Naturel	0·13	...	0·33	trace.	0·23	0·18
14. Mossed	0·38	...	0·22	trace.	0·35	0·52
C. Micrantha.						
15. Naturel	0·38	0·08	0·64	1·22	0·12	0·52

—	Percentage Amount of					Crystallized Quinine Sulphate.
	Quinine.	Quinidine.	Chinchonidine.	Cinchonine.	Amorphous Alkaloid.	
C. Calisaya.						
16. Naturel	1·24	0·64	0·32	0·36	0·10	1·68
C. Pitayo.						
17. Naturel	1·50	0·82	0·30	1·68	0·33	2·02
C. Condaminea.						
18. Naturel	1·20	...	1·50	0·18	0·10	1·62
19. Mossed	2·13	...	2·00	0·47	0·20	3·00
20. Renewed	3·40	...	1·48	0·14	0·20	4·58

The sixth column of figures gives the quantities of crystallized quinine sulphate corresponding to the percentage amounts of actual quinine indicated in the first column.

The sample of unmossed red bark from Neddiwattum, No. 6, and the sample of mossed red bark from Pykara Hooker, No. 3, are the only ones in which I have been able to detect any appreciable quantity of the alkaloid named quinamine which is said to be sometimes present in the red bark grown in India. The amount in both cases was very minute.

No. 352. ORDER THEREON, 23rd June 1879, No. 1,336.

Miscellaneous.

G.O., 9th October 1878, No. 1,640.

COMMUNICATED to the Commissioner, Nilgiris, with reference to the Order noted in the margin.

2. The best results appear to have been obtained from Yellow Bark (*C Calisaya*, Nos. 4 and 5,) grown at Neddiwuttun and from Dodabetta (*C. Angustifolia* bark, No. 9). The outturn from "real coppice" red* and brown† bark seems satisfactory and promising.

* Neddiwuttum, No. 14.
† Dodabetta, Nos. 4 and 5.

(True Extract.)

(Signed) J. H. GARSTIN,
Acting Secretary to Government.

To the Commissioner of the Nilgiris.
„ the Board of Revenue.
„ the Superintendent of the Government Central Museum.

Exd. J. W. Fischer.

15—6—17

Govt. of {1879} Madras.

REVENUE.

To

THE COMMISSIONER OF THE NILGIRIS,

&c., &c., &c.

Dated June 23rd.

Printed July 5th.

Encl.

G.O., 23rd June 1879, No. 1,235.

JUNE.

Nos. 371-372.

Specimens of Chinchona Bark sent to England.—Communicating to the Commissioner of the Nilgiris with observations despatch from the Secretary of State transmitting for information report of Dr. B. H. Paul on his analysis of [illegible].

5P

Analytical Laboratory
1 Victoria Street, S.W.
London 17th April 1879.

To B. H. Paul. F.C.S.
Consulting Chemist
106, Fuckurch St.
E.C.

To The Under Secretary of State
for India.

Sir,

Nilgiri Cinchona Bark.

Having now completed the analyses of the 45 samples of bark from the Govt Cinchona Plantations at Reddiyurttum, Pycara and Dodabetta, I beg to submit to you, as plated below, the results that have been obtained:-

Reddiyurttum	Percentage amounts of Quinine	Quinidine	Cinchonidine	Cinchonine	Amorphous alkaloid	Crystallized Quinine Sulph
Red bark.						
1. mossed.	0.78	-	3.16	2.85	0.74	1.05
2. unmossed.	1.60	-	3.32	2.30	0.64	2.16
3. renewed.	1.96	-	1.97	2.45	0.61	2.51
Yellow bark.						
4. unmossed.	4.92	-	1.56	0.62	0.70	6.63
5. mossed.	4.29	-	2.04	0.60	0.43	5.78
Red bark.						
6. unmossed.	0.71	-	4.59	0.50	0.68	0.96
Crown bark.						
7. renewed.	1.47	0.15	0.50	0.06	0.18	1.99
Hybrid.						
8. unmossed.	0.69	-	0.84	1.40	0.60	0.93

Reddiwallium. Cont'd	Percentage amounts of Quinine	Quinidine	Cinchonidine	Cinchonine	Amorphous alkaloid	Crystallized Quinine Sulph.
Crown bark.						
9. Mossed.	3.53	0.08	1.33	0.20	0.26	4.75
Hybrid pubescens.						
10. renewed.	3.61	0.64	1.08	0.27	0.49	4.99
11. unmossed.	2.30	0.16	2.30	0.72	0.40	3.10
Red bark.						
12.	1.06	—	3.16	1.22	0.79	1.43
13. unmossed hybrid.	0.43	—	2.68	0.51	0.55	0.58
14. real Coppice bark.	0.84	—	2.68	1.05	0.92	1.13
Pycara Hooker.						
Grey bark.						
1. unmossed.	0.30		4.73	1.87	0.32	0.41
Red bark.						
2. unmossed.	0.84		2.54	1.50	0.69	1.13
3. mossed.	0.73		4.84	1.50	0.70	0.99
brown bark.						
4. renewed.	2.20	0.25	1.01	0.50	0.20	2.97
Red bark.						
5. renewed	1.54	0.07	1.71	1.90	0.43	2.08
Pykara Wood 6. ——do——	1.95	0.13	1.44	2.27	0.44	2.63
7. unmossed.	0.73	trace	2.57	1.45	0.31	0.99
8. mossed.	1.44	0.07	2.60	2.55	0.54	1.95
brown bark.						
9. renewed.	2.16	0.14	0.82	0.20	0.24	2.91
Grey bark.						
10. unmossed.	0.05	0.03	2.26	0.90	0.45	0.07

Dodabetta.	Percentage amounts of Quinine	Quinidine	Cinchonidine	Cinchonine	Amorphous alkaloid	Crystallized Quinine Sulphate
Crown bark.						
1. natural.	2.85	0.14	1.36	0.24	0.20	3.84
2. mossed.	3.15	0.28	1.30	0.44	0.20	4.24
3. renewed.	1.96	0.30	0.28	0.24	0.54	2.64
3.A branch.	1.74	0.09	0.84	0.12	0.10	2.34
4. natural.	1.43	trace	0.74	0.08	0.10	1.92
5. mossed.	3.03	0.04	1.67	0.14	0.14	4.08
6. ——do——	3.55	0.10	1.90	0.82	0.31	4.78
7. natural	1.56	0.12	2.15	1.05	0.14	2.10
C. angustifolia.						
8. " natural.	2.06	0.10	1.60	0.16	0.20	2.78
9. " mossed.	4.86	0.17	1.88	0.26	0.30	6.54
10. hybrid pubescens.	2.12	trace	4.77	0.22	0.28	2.86
11. " mossed.	1.78	0.07	2.72	0.58	0.24	2.40
12. " renewed.	3.03	0.12	1.77	0.24	0.20	4.08
C. palmdiana						
13. natural.	0.13	—	0.33	trace	0.28	0.18
14. mossed.	0.38	—	0.22	trace	0.35	0.52
C. micrantha.						
15. natural.	0.38	0.08	0.64	1.22	0.12	0.52
C. Calisaya.						
16 natural.	1.24	0.64	0.32	0.36	0.10	1.68
C. pitayo.						
17 natural.	1.50	0.82	0.30	1.68	0.33	2.02
C. Condaminea.						
18. natural.	1.20	—	1.50	0.18	0.10	1.62
19. mossed.	2.13	—	2.00	0.47	0.20	3.00
20. renewed.	3.40	—	1.48	0.14	0.20	4.58

The sixth column of figures gives the quantities of crystallized Quinine Sulphate corresponding to the

the percentage amounts of actual Quinine indicated in the first Column.

The Sample of unmossed Red bark from Neddivuttum No: 6. and the Sample of mossed Red bark from Pycara Hooker No: 3. are the only ones in which I have been able to detect any appreciable Quantity of the Alkaloid named Quinamine which is said to be sometimes present in the Red bark grown in India. The amount in both cases was very minute.

I have &c.

(Sgd) B. H. Paul.

No: 10.

Copy Report by Dr Paul,
dated 17th April 1879.

Reported in Revenue Letter to
Madras, No: 13, dated 8th May 1879
Para: 2.

India Office, London
8th May 1879.

138

Revenue

No 13.

My Lord Duke,

On receipt
of Your Grace's Letter
No 47 of the 31st October
last, and of the
box of samples of
Chinchona Bark,
therein referred to,
the latter together with
copies of the particulars
relating thereto were
forwarded to Dr. D.B. Paul
with a request that
he would make an
analysis of the several

His Excellency
The Right Noble
The Governor in Council
Fort St. George

Specimens sent.

2. A copy of D. Paul's report is transmitted herewith for your information.

I have the honor to be
my Lord Duke
Your Grace's most obedient
humble Servant

Cambrook

No 1052. 1879

No 9

Revenue
8th May 1879.

No
Letter to Govt of St Lucia
No 13.

Rec'd 7th June 1879.

Transmitting for information report of Dr B. H. Paul on his analysis of the Specimens of Cinchona bark sent with letter No 479 of 31st October 1878—

With order
No 1996. 23rd June 1879

8.7

No 1996

Communicated to the Commissioner
L.O. 9th Oct. 78. 1640. } Wilgins with Secy. of State order noted in the margin

2. The best results appear to have been obtained from Yellow bark (C. calisaya {Howard} Schuhr) grown at Neddiwatten from Bolabetta C. officinalis bark {Howard} grown at Bolabetta C. succirubra bark {Howard}

The solution from "Red bark" Neddiwatten No 14. } bark seems Bolabetta. No 485. } satisfactory

Lal

23rd June 1879

To the Commissioner
14 the Board
2 Supdt of Govt Central Museum