

Sl. Number of Page _____
By Date of receipt _____
By Name of the Officer _____

MADRAS RECORD OFFICE

Government of Madras

DEPARTMENT

CO. No.	Page

Not to be filled or wrongly handled

No. 271. Read the following letter from J. R. COCKERELL, Esq., Commissioner of the Nilgiris, to the Hon. D. F. CARMICHAEL, Secretary to Government, Revenue Department, dated Ootacamund, 12th June 1876, No. 36 :—

WITH reference to Government Order, Revenue Department, dated 27th January last, No. 119, permitting the late Mr. Melvor, Superintendent of the Cinchona Plantations, to visit Ceylon and report on the cinchona there, I have the honor to submit the report furnished by Mr. Melvor.

2. The report reached me on the 15th ultimo, and I should have forwarded it at once but that I desired to make some remarks after consultation with the Superintendent. I was unable to confer with Mr. Melvor owing to his illness, which the Government are aware has now terminated fatally.

3. In submitting the report, therefore, all that I am able to say is that Mr. Melvor informed me he considered the land in Ceylon not better than the land on the Koon-dahs and therefore much less good than land on the major part of the Nilgiri Plateau and on the slopes. I understood from Mr. Melvor that he attributed this to a rainfall similar to the rainfall on the Koon-dahs. The hills in Ceylon are denuded by constant wet, and this diminishes the depth of the surface soil and deteriorates it.

4. The conditions in Ceylon are apparently somewhat similar to the conditions in Sikhim. The soil and climate are such that in both places canker makes its appearance in cinchona in the third or fourth year after planting.

5. The present report affords additional evidence that the Nilgiris are the most favorable locality known for the production of artificially-grown cinchona bark.

ENCLOSURE No. 1.

From W. G. MELVOR, Esq., Superintendent of Government Cinchona Plantations, to J. R. COCKERELL, Esq., Commissioner of the Nilgiris, Ootacamund, dated Ootacamund, 9th May 1876, No. 25.

WITH reference to G.O., dated 27th January 1875, No. 239, I have the honor to inform you that on the 10th February last I proceeded to Ceylon to ascertain the condition of cinchona cultivation in that island. During the last three years a large extent of land has been brought under cinchona cultivation by private planters, but prior to this period only a few acres were put down on coffee estates here and there, while on many estates the boundaries are marked off by lines of cinchona trees.

2. I shall first notice the plantation of the Ceylon Government at Hakgalla begun in 1861 under the able management of Dr. Thwaites, the Director of the Botanic Garden at Peradenia. This plantation is now under the immediate superintendence of Mr. E. J. Thwaites. The site has been selected with great judgment; it lies near the east limit of the south-west monsoon, and therefore receives the south-west and north-east rains, but in moderate quantities only. The elevation is from 5,200 to 5,500 feet, situated six miles south-east of Nowera Eliya, and is well protected from the south-west by mountains rising to upwards of 6,000 feet. In this favorable position Dr. Thwaites succeeded early in 1861 in raising 850 plants of red bark (*C. Surostruba*) and 180 plants of grey bark (*C. Mierantha* and *C. Peruviana*), which, together with plants of other varieties, made 800 in all. These were the first cinchona plants raised in Ceylon. In the same year the yellow bark (*C. Calisaya*) was received from Kew. In 1862, there were in all 2,434 plants at Hakgalla. In October 1865, these had been increased to 354,026. In 1862, 194 red barks and 110 grey barks were placed in permanent plantations. In 1863-64 the plants in permanent plantations were increased, the red barks to

1,345, crown barks to 1,471, grey barks to 300, and yellow barks to 82. After this date there seems to have been but little extension of permanent planting, as the object of the Ceylon Government was not to produce bark, but to multiply the best varieties of cinchona plants in order to meet the great demand of the enterprising and energetic planters in the island.

3. At the date of my visit the plants in permanent plantations at Hakgalla were from twelve to fourteen years of age. The red bark plants were healthy with a growth resembling that which obtains on the Nilgiri Hills at similar elevations. The crown barks were less healthy, a considerable number had died, perhaps one-tenth, and many were affected with canker. The yellow barks of the early planting were all in an unhealthy and unpromising condition. This was also the case with the grey barks. In Ceylon, as with us, last winter was one of exceptional severity, and at the date of my visit some of the plants at Hakgalla had been injured by frost, and all of them had suffered more or less from the cold and exceptionally severe drought. The surface soil is rich and fertile, but unfortunately it is shallow, and, when the roots penetrate into the subsoil, the growth becomes less vigorous, and the plants less healthy. This I fear in many of the localities in Ceylon will prove an impediment to cinchona plantations attaining a great age, and will possibly necessitate the cutting down of the trees in the earlier stages of growth. Mossing has been tried to a small extent, but the necessary precautions seem to have been omitted in its application.

4. Seedling cinchona plants spring up in myriads all over the plantation and under the trees in the neighboring forests. Advantage has been taken of these to form stock plants for propagation, and I was much impressed with the great success attained by Mr. E. J. Thwaites in the propagation of cuttings in beds formed in the open, and simply covered with soil matting, placed on a pandal about eighteen inches above the ground. The skill shown and the attention bestowed by Mr. Thwaites on the propagation of the plants has been rewarded by unequalled success. On looking over the nursery beds, it appeared to me that not one cutting in a hundred had failed.

5. Coffee planters have entered into the cultivation of cinchona in Ceylon with much zeal, and foremost in their ranks stands Mr. Corbett. This gentleman in 1862-63 formed a plantation of three or two acres on the famous Rothschild Coffee Estate, and also planted avenues along the main roads, and here and there lines of cinchona trees among the coffee plants. I understand that Mr. Corbett afterwards opened a tract of land for cinchona cultivation in Dickoya and is now opening a large tract near Novera Eliya. The Rothschild Estate is situated in Pusilawa at an elevation of 3,200 feet. The plants are principally red bark and the growth is fairly satisfactory, much resembling the growth of this species in the Wynad. The plants I observed on other plantations in Pusilawa and Rambody were much in the same condition. On the Nana-oya Coffee Estate, situated in Dimboola at an elevation of about 4,000 feet, is a very fine patch of about four acres of red bark. Here the plants were very healthy, and had made perhaps more vigorous growth than any I saw elsewhere. Some crown barks also had been planted on the same patch; these however, were unhealthy, the greater part having died, and the few remaining plants were all more or less affected with canker, and this I found to be the case with all the old crown bark plants which I saw at low elevations in Dimboola.

6. In September 1873 a number of the larger succubra plants on Nana-oya were coppiced and the bark sent into the London market. These plants have thrown fine vigorous shoots from the coppiced stools averaging about seven feet in height, so healthy and vigorous that they give promise of a full return by this method of cultivation. The ordinary size of the coppiced stools is twelve inches in circumference, and the largest I could find was twenty-five inches in circumference at a foot from the ground.

7. There are a number of very fine young plantations in Dimboola, especially on the higher portions; but, as the plants had only been in the ground two or three years, it was impossible to form any opinion as to their permanency.

8. Lool Condura is an extensive cinchona estate situated in Lower Howahette and under the able and skilled management of Mr. William Taylor. Here a large extent of land is now under cinchona cultivation, and the young plants are healthy and promising, although here and there the symptoms of canker are evident in plants three or four years of age. The older plants on this estate seemed to me in an unpromising condition, especially the crown and yellow barks. On this property the cultivation was maintained in an exemplary manner, and every care and attention bestowed on the plants.

9. On the new forest estate at a high elevation I observed some of the most healthy old crown bark trees which I saw in the island; so far as I noticed there was scarcely a trace of disease among these plants.

10. On a consideration of all I saw in Ceylon, I was impressed that the cultivation of red barks in well-situated localities may be made profitable and to a certain extent permanent. With crown barks the difficulty will be greater. The position of the plantation must be selected with great judgment if permanency is required; but, if the intention is simply to grow the plants for five or six years and then cut them down for the bark, the result would be different, and this system of cultivation may prove remunerative. The cultivation of the yellow and grey barks did not promise either permanency or profit. As a whole the plants in Ceylon are inferior to those grown on the Nilgiris, although the growth of the red bark is more rapid at low elevations in Ceylon than with us, but the deficiency of a rich deep surface soil and the nature of the subsoil will, I fear (with only a few exceptions), render cinchona cultivation somewhat hazardous.

11. On the 11th July 1866, Mr. J. Elliot Howard, in submitting an analysis of Ceylon Bark, observes: "I must remark in the first place that they contrast disadvantageously in appearance with the specimens of cinchona bark received from Mr. Molvor. It looks as though the climate of Ceylon were less favorable than that of Octacumund for the cultivation of this plant. No. 1 in particular and next to this No. 3 would be considered poor and badly-grown barks in commerce, and moreover they have not had the advantage of mossing which leads so much to increase the product of the alkaloids." Time appears to have established the correctness of these observations. In appearance the Ceylon barks are thinner and deficient in the markings which are valued in the home market, and, although these barks are really rich in alkaloids, they are in this respect also a little inferior to the barks of the Nilgiris.

12. On my visit to the cinchona plantations of the Bengal Government in 1871 I observed disease in the plants and certain conditions of soil and climate which forced on me the conviction that cinchona would not form a permanent and profitable cultivation in British Sikkim. My report detailing these facts was unfavorably received by the Government of India, the Bengal Government, the local authorities in charge of the plantations in British Sikkim, and especially condemned by Mr. Munro, the Superintendent of the Pomong Plantations of the Darjeeling Cinchona Association. Time seems, however, to have led the Proprietors of the Darjeeling Association to acquiesce in the conclusions arrived at in my report of 1871, as I observe that, referring to the Pomong Plantation, the *Darjeeling News* says: "The present owners of this large cinchona garden, Major-General Angus and Mr. Lloyd, have spent a large amount of money on the estate, which was commenced some fourteen years ago, and up to date received no return. The Government has large cinchona gardens alongside, and may be said to have swamped the private enterprise. Any way we learn that the Superintendent of the garden has received orders to cut down the trees and send the bark to the London market. The trees are to be destroyed so as to get the bark from the roots said to be rich in alkaloids, and the land is then to be put up in small lots for public sale among the tea planters. In this way the owners expect to get back the Rs. 325,000 they have spent, though they will never see the interest of the money they have been spending all these years. It seems a pity to destroy what has cost so much time and money. One would have thought that these gardens, which had been made far cheaper than any others in India and were a great success, would have paid

*Proceedings of the Madras Government, Revenue Department,
26th June 1876.*

well, but it seems that cinchona is not a paying speculation." I believe that the work of destruction has begun, and in a few months 1,800 acres of our Indian-grown cinchona will have disappeared. I mention this fact as it may be worthy the consideration of Government when deciding what permanent course it may be desirable to adopt in reference to the disposal and future management of our plantations.

No. 272. ORDER THEREON, 26th June 1876, No. 855.

Miscellaneous.

RECORDED.

2. The Government are glad to receive this further contribution to their knowledge of Cinchona cultivation, the last which the late Superintendent lived to make at the close of a long service, during which intelligence and zeal for the advancement of a great enterprise were equally conspicuous.

(True Extract.)

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

To the Commissioner of the Nilgiris,
the Board of Revenue.

Edw. J. W. Fischer.

✓
Bill of 1876
REVENUE.

To THE COMR. OF THE NICHOLS,

Do. Lt. Do

Dated June 28th.

Recd.

Recd.

G.C. 1876 June 18th, No. 655.

JUNE

No. 271-272.

Quotation: Provisions in Ceylon. Reporting
with remarks Commissioned by the Government
Mr. Kolver's report on the



in 1861 under the management of Dr. Thwaites the
Director of the Botanic Garden at Pasadena. This
plantation is now under the immediate supervision
of Mr. E. J. Thwaites. The site has been
selected with great judgment; it lies near the East
End of the South West moraine and therefore
near to the South West and North East rivers but
in moderate quantities only. The elevation is
from 5,200 to 5,500 feet, situated on a hill with
East of a basin. It is well protected from
the South West by mountains rising to upwards
of 4,000 feet. In the favorable position Dr. Thwaites
succeeded early in 1861 in raising 300 plants of
Red Bark (Chusquea), and 100 plants of Grey Bark
(Chusquea) and 100 plants of Yellow Bark (Chusquea).
The plants of other varieties made 200 in all.
These were the first Chusquea plants raised in
England. In the same year the yellow bark (Chusquea)
was removed from New. In 1862 there
were in all 200 plants at Hestegallen. In
1863 there had been successful losses of 100
plants of Red Bark and 100 plants of Grey Bark
placed

placed in permanent plantations. In 1863 the
the plants in permanent plantations were
increased, the red bark to 1,240, Crown bark
to 1,170, grey bark to 300, & yellow bark to 80. After
this date there seems to have been but little
extension of permanent planting, as the object
of the Eglon York was not to produce bark
but to multiply the best varieties of Chusquea
plants in order to meet the great demands of the
enterprising & energetic planters in the island.
At the date of my visit the plants in
permanent plantations at Hestegallen were from
12 to 14 years of age. The red bark plants were
healthy with growth resembling that which
obtain on the Chilpaning Hills at similar
elevations. The Crown bark were less healthy,
a considerable number had died, & the remainder
were not so healthy, and many were affected with canker.
The yellow bark of the early planting were all
unhealthy and in poor condition.
This was also the case with the grey bark. At
Eglon as with us, but water was more of a con-
ditional

exceptional severity, and at this date of my visit
some of the plants at Katakalla had been
injured by frost, and all of them had suffered
more or less from the cold and exceptionally
severe drought. The surface soil is rich and
fertile, but unfortunately it is shallow & when
the roots penetrate into the sub soil the growth
becomes less vigorous and the plants less healthy.

Thus I fear in many of the localities in Ceylon
with poor or impeded drainage the
plantations requiring a great deal of care will
probably necessitate the cutting down of the
trees on the earlier stages of growth. Pruning
has been tried to a small extent and the
necessary precautions seem to have been
omitted in the application.

At Katakalla a number of plants spring
up as weeds all over the plantation and
under the trees in the neighbouring forests.

Mr. Lloyd has been taking of these to form
stock plants for propagation, and it was much
to be regretted that the great success attained by

Mr. E. J. Thwaites in the propagation of
cuttings in beds formed in the open & simply
covered with coir matting, placed on a pedestal
about 18 inches above the ground. The skill
shown & the attention bestowed by Mr. J. J.
Thwaites on the propagation of the plants
has been rewarded by unequalled success.
But looking over the various beds it appeared
to me that not one cutting in a hundred had
failed.

5. Coffee plantations have entered into the
cultivation of *Charichona* in Ceylon with much
 zeal and ferment in their former days.
Mr. Corbett. This gentleman in 1862-63, formed
a plantation of 500 acres in the famous
Koththitit coffee estate, and also planted
cinnamon along the main roads and here and
there some of *Charichona* was among these
coffee plants. I understand that Mr. Corbett
afterwards opened a tract of land for *Charichona*
cultivation in Dikoya, and in 1867
opening a larger tract near Negombo, Ceylon.

The Potomac State is situated in Lenoir at an elevation of 3200 feet. The plants are principally red bark, and their growth is fairly satisfactory, much resembling the growth of this species in the Maryland. The plants I observed on other plantations in Lenoir and Pamlico were much in the same condition. On the Pamlico River State, situated in Pamlico at an elevation of about 1500 feet, is a very fine patch of about 10 acres of red bark. Here the plants were very healthy, and had made perhaps more vigorous growth than any I saw elsewhere. Some Crown-bark also had been planted on the same patch, these however, were unhealthy, the greater part having died, & the few remaining plants were all more or less affected with canker & this I found to be the case with all the old crown-bark plants which I saw at low elevations in Pamlico.

In September 1873 a number of the

larger Laccinubus plants on Pamlico were coppiced & the bark sent into the Lenoir market. These plants have thrown fine vigorous shoots from the coppiced stools averaging about 7 feet in height, so healthy & vigorous that they give promise of a fair return by this method of cultivation. The ordinary size of the coppiced stools is 12 inches in circumference, & the largest I could find was 25 inches in circumference at a foot from the ground.

There are a number of very fine young plantations in Pamlico, especially on the higher portions, but, as the plants had only been in the ground 2 or 3 years, it was impossible to form any opinion as to their permanency.

Lord Conrad is an extensive chinquapin State situated in lower Lenoir under the able & skilled management of Mr. William Taylor. Here a large tract of land is now under chinquapin cultivation, and the young plants are healthy & promising although here and there

these the symptoms of canker are evident in plants of 10 years of age. The older plants on this estate seemed to me in an unpromising condition, especially the Crown & yellow barks. On this property the cultivation was maintained in an exemplary manner, & every care and attention bestowed on the plants.

On the fine forest estate at a high elevation I observed some of the most healthy old Crown bark trees which I saw in this island, so far as I noticed there was scarcely a trace of disease among these plants.

On a consideration of all I saw in Ceylon I was impressed that the cultivation of red barks in well situated localities may be made profitable to a certain extent for export. With Crown bark the difficulty will be greater. The position of the plantation must be decided with great judgment if permanency is required, but if the intention is simply to grow the plants for 5 or 6 years and then cut them down for the bark, the result would

would be different, & this system of cultivation may prove remunerative. The cultivation of the yellow and grey barks did not promise either permanency or profit. As a whole the plants in Ceylon are inferior to those grown on the Nilgherries, although the growth of the red bark is more rapid at low elevations in Ceylon than with us, but the deficiency of a rich deep surface soil, and the nature of the sub soil will I fear (with only a few exceptions) render Chincha's cultivation somewhat hazardous.

On the 11th July 1855, Mr J. E. List Howard in submitting an analysis of Ceylon bark shavings, "I must remark in the first place that they contrast disadvantageously in appearance with the specimens of Chincha bark received from Mr. M. L. L. It looks as though the climate of Ceylon were less favorable than that of Cochacumand for the cultivation of this plant. It is particularly noticeable that it would be considered poor & badly grown bark in commerce, and moreover they have not had

the advantage of mashing which leads some to
to increase the product of the alkaloids. Some
appears to have established the correctness of these
observations. In appearance the Cayana barks
are thinner & deficient in the markings which
are noticed in the leaves marked, and although
these barks are really rich in alkaloids, they are
in this respect also a little inferior to the barks of
the neighbours.

On my visit to the Chinchona plan-
tations of the Royal Govt at Yaguajay I observed
the state of the plants & certain conditions of soil,
and climate, which forced on me the conclusion
that these barks would not form a permanent and
profitable cultivation in British Guiana. Every
report detailing these facts was unfavourably received
by the Govt of India, the Royal Govt, the Govt of the
Colonies or charge of the plantations in British
Guiana & especially condemned by Mr. Murray, the
agent of the Company plantations of the Guayana
Association. Some news however
has reached the proprietors of the Guayana
Association.

association to acquiesce in the conclusion arrived
at in my report of 1871, as I observed that referring to the
Company plantations the Guayana News says, "The
"present owners of this large Chinchona garden, Major
"Genl. Angus, & Mr. Lloyd have spent a large amount
"of money on the estate which was commenced some
"4 years ago & up to date received no return. The
"Govt. has large Chinchona gardens along side, & may
"be said to have swamped the private enterprise."
"Any way we learn that the Govt of the garden has
"received orders to cut down the trees & send the
"bark to the London market. The trees are to be
"destroyed so as to get the bark from the roots
"said to be rich in alkaloids, & the land is then to be
"put up in small lots for public sale among the
"freeholders. In this way the owners expect to get
"back the Rs. 25,000 they have spent, though they
"will never see the interest of the money they have
"been spending all these years. It seems a pity to
"destroy what has cost so much time & money. One
"would have thought that these gardens, which had
"been made far cheaper than any others in
"India, & were a great success, would have
"paid

practised well, but it seems that Chunchona is not a
"paying speculation." I believe that the work
of destruction has begun & in a few months 1800
acres of our Indian from Chunchona will have
disappeared. I mention this fact as it may be
worthy the consideration of Govt. when deciding
what permanent course it may be desirable to
adopt in reference to the disposal & future
management of our plantations.

I have the honor to be

Sir,

Your most Obedt. Servant

H S M Fie

Capt. Govt. Comanchero Plant.

Received of the
Hon. Secy of the Interior
Jan. 19th 1877

J. P. Lockwell Esq
Commissioner of the
Bureau of Indian Affairs

To
The Secretary to Government
Bureau of Indian Affairs
Washington

With reference to Government
order for the department dated
January 18th 1877 permitting
the sale of the land in the
the branch of the land to which
the school on the reservation
has been the house to which
the school furnished by the
the school

The Report which was
the 15th ultimo and I should have
forwarded it at once but had I
succeeded to make some more after
consultation with the Superintendent
I was unable to confer with Mr. Smith

Wm. H. Lockwell Esq

92.2.25
179 May 1877
Wm. H. Lockwell Esq

At
the Commission
of the
Commissioner

Doc -
Adopted

Copy to
the
Commissioner
of the
Commissioner

92.2.25 Jan 1877

owing to the illness which the
Government was aware has now termin-
ated fatally.

The following is the report
which all that I am able to say is
that the land in question will be
considered the best in England with-
out the land on the coast and
the best much less good than land
in the main part of the Kingdom
the land in the above mentioned
part of the Kingdom is not attributed
to a high quality of soil to the
quality of the land. The hills
in question are covered by a soil of
a high quality and the hills
are covered with a soil of a high
quality and are not attributed

The condition of the
land in question is such that it
is not possible to say that it
is not the best in England with-
out the land on the coast and
the best much less good than land
in the main part of the Kingdom

200
In place where snakes its appearance
in Rhinoceros on the third or fourth
year after planting

5. The present report affords
additional evidence that the Rhinoceros
are the most favorable locality known
for the production of artificially
grown Rhinoceros Park

I have the honor to be
Sir
Your most Obedt Servt

W. P. M. M. M.
Commissioner

(P2677A)
 Cheyenne 1871-1872
 No. 35
 Dec 10 1871
 Dec 10 1871

Commissioned 1871
 Cheyenne

The following is a
 list of the
 names of the

names of the
 names of the

names of the
 names of the
 names of the

names of the
 names of the

names of the