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MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No.	382	Press ~~Mis.~~
Dated	15-4-	1882.

Not to be folded or roughly handled

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—the following Despatch from the Most Honorable the Secretary of State for India, to His Excellency the Right Honorable the Governor in Council, Fort St. George, dated India Office, London, 23rd February 1882. (Revenue No. 9):—

Referring to paragraph 6 of my Despatch, No. 28, of the 10th November last, I now transmit, for your Excellency's information, a copy of a letter from Professor Thiselton Dyer, of the 24th January, containing observations by Sir Joseph Hooker relative to the dried specimens of *Chinchona* plants from the Nilgiris sent home last year by your Government for the Kew Herbarium.

I have, &c.,
(Signed) HARTINGTON.

ENCLOSURE.

Letter from W. T. THISELTON DYER, to SIR LOUIS MALLET, C.B., Royal Gardens, Kew, dated 24th January 1882.

I am desired by Sir Joseph Hooker to acknowledge the receipt of your letter, R. 749, of 10th November, on the subject of dried specimens of *Chinchona* plants from the Nilgiris, which were subsequently duly received.

These specimens have been carefully examined, and I am now to make the following observations with respect to them:—

1. Colonel Beddome has drawn especial attention to a variety which "has generally been supposed to be an accidental hybrid of Nilgiri origin, and is often known as M'Ivor's hybrid."

"It differs from (*Chinchona*) *succirubra* (besides in its more robust growth at a higher elevation and in poorer soil) in its leaves being more pointed, more coriaceous, of a much darker green, and more shining, and in the primary veins being less at right angles with the midrib."

"The leaf is never so rounded at the apex, and it has a flatter surface, and never the crumpled look that (*Chinchona*) *succirubra* always assumed more or less."

This plant has received the plantation name of *Chinchona pubescens*. It must not, however, be confounded with the real *Chinchona pubescens* of Vahl.

2. Another *Chinchona* form is distinguished in the Nilgiri plantations under the name of *Chinchona magnifolia*, which again, as Colonel Beddome points out, has nothing to do with *Chinchona magnifolia* of Ruiz and Pavon.

3. The so-called "*pubescens*" and "*magnifolia*" of the Nilgiris only differ in the latter being "quite glabrous on the under surface of the leaves." Mr. Cross regards them as "scarcely distinguishable," and Colonel Beddome as "rather slight variations of the same species." The examination of the copious and carefully-preserved specimens sent to this country by Colonel Beddome entirely confirms this view.

4. Bark from these two forms mixed indiscriminately sold for 7s. 1d. per lb., considerably more than the price fetched at the same time by Nilgiri crown bark. It appears also that the natural bark of "*pubescens*" has yielded on analysis 2.30 per cent. of quinine, and that of "*magnifolia*" 2.12 per cent.

5. Mr. Howard and Mr. Cross "both advocate the propagation of *Chinchona succirubra* being given up in favour of" these forms. Colonel Beddome quite agrees "with this, considering the healthy and splendid growth."

6. The question then arises, which has been referred to Kew, as to what these valuable *Chinchona* forms really are. To "*magnifolia*" Mr. Howard has assigned the name *Chinchona officinalis*, var. *pubescens*. He therefore regards it as specifically distinct from *Chinchona succirubra*. He has also, however, identified it (from bark specimens alone) with *Chinchona coccinea* of Pavon, in which he is no doubt in error. Mr. Cross, on the other hand, has identified "*magnifolia*" with the "*Pata de Gallinazo*" of the Quaternian Andes. He claims that all the plants of it now in cultivation in India are the progeny of some plants collected by him to fill up a package in "a hasty trip . . . to a ravine . . . three miles up the wooded slope of" Chimborazo.

Dr. Spruce has, however, entered very fully into the question of the "*Pata de Gallinazo*," and the scarcely distinguishable "*Cuchicara*," in the Parliamentary Blue Book, 1863, pp. 116 and 117. He felt inclined to refer them to *Chinchona officinalis* as a slight variety. We possess in the Kew Herbarium the identical specimens collected by Spruce, and although there is some resemblance in the foliage, it may be said with some certainty that the Nilgiri "*magnifolia*" is not the "*Pata de Gallinazo*" of Chimborazo, which is distinguished amongst other things by the possession of brick-red coloured flowers, by a corymbose, or flat-topped panicle, and by a wider tube to the corolla.

Dr. Spruce and Mr. Howard have identified the specimens (now in the Kew Herbarium) of the Cuchicara and the Pata de Gallinazo, collected by the former with *Chinchona erythrantha*, Pavon. This identification is probably correct, as far as the material can enable one to judge. And Triana, in his "*Nouvelles Etudes sur les Quinquinas*," has further identified Spruce's specimens already referred to, as well as the *Chinchona erythrantha* of Pavon with *Chinchona pubescens*, Vahl, of which there are authentic examples in the Paris Museum.

7. Dr. Trimen, the Director of the Botanic Garden, Peraderiya, writes to say that the plant referred to above is also common in the Ceylon plantations, "always mixed with *succirubra* and *officinalis*," and having the name sometimes of *pubescens*, sometimes of large-leaved *Condaminea* [*officinalis*], but generally called the hybrid." Dr. Trimen has sent to Kew an excellent drawing, which shows that the Ceylon "hybrid" and the Nilgiri "*magnifolia*" are one and the same thing.

Colonel Beddome argues that the form cannot be of hybrid origin, as he thinks it theoretically impossible that *Chinchona* hybrids can be produced spontaneously. The argument can, however, be easily met, and it appears the most probable account that can be given of the forms "*pubescens*" and "*magnifolia*," that they are hybrids between *succirubra* and *officinalis*. There is no reason to suppose that such hybrids would be sterile, but their offspring would tend to revert to the characters of their own parents, a circumstance which appears repeatedly to have happened, though in every case explained away by Colonel Beddome as the result of a mistake.

8. The remaining specimens, Nos. 4, 17, sent home by Colonel Beddome, appear to call for no remark. Their determinations as far as can be judged are correct.

9. No. 8 is sent by Colonel Beddome as an unknown species, which Mr. Cross has identified with *Chinchona crispata*, brought by him from the Loxa mountains. It appears, however, from Mr. Markham's work on Peruvian bark (p. 238) that the plant brought by Mr. Cross was the *Chinchona crispata* of Tafalla. Now, as Colonel Beddome points out, the Nilgiri plant cannot by any possibility be that species. This throws some doubt on the dependence which can be placed on these identifications by me and of Mr. Cross's memory. It is, however, possible that the Loxa plant was itself erroneously named. This could only be ascertained by reference to the authentic specimens collected by Cross. It is much to be regretted that the whole of the original specimens of the plants whose seeds were sent out to found the *Chinchona* cultivation of British India were not deposited in the Kew Herbarium. The greater part, however, seems to have found their way into the hands of private individuals. Mr. Cross's specimens of *Chinchona crispata* having remained partly in the possession of Mr. Markham (Peruvian bark, p. 260); application has been made to him for the loan of the specimens, in order to test Mr. Cross's statement as to the identity of the Nilgiri plant with that brought by the latter from Loxa, but so far no reply has been received.

What the Nilgiri plant, No. 18, really is cannot, with the material at our disposal, be accurately determined. It is certainly a remarkable and well marked form, but its determination must, for the present, stand over.

10. In a letter to the Government of Madras, dated 3rd October, in which Colonel Beddome gives an account of his visit to Ceylon, he states that he finds the so-called "*magnifolia*" widely distributed in the island, thus confirming Dr. Trimen's statement upon the point. But he credits Dr. Trimen with the belief that the form is an undescribed species, and not a hybrid, a view which Dr. Trimen, in a letter to the "Ceylon Observer," dated 25th November, emphatically disclaims. He has in fact arrived, independently, at substantially the same view as that advanced in this letter.

As it is a matter of some importance that uniformity of nomenclature should, as far as possible, obtain with regard to the cultivated forms of *Chinchona*, I am to request that you will be so good as to cause a copy of this letter to be communicated to the Government of Ceylon.

READ—the following letter from Surgeon-Major G. BIDIE, M.B., Superintendent, Government Central Museum, to the Secretary to Government, Revenue Department, dated Madras, 29th March 1882, No. 284:—

I have the honor to return with thanks the Despatch from the Most Honorable the Secretary of State, No. 9 of 23rd February 1882, with a letter from Kew, containing observations on certain dried specimens of Nilgiri *Chinchonas*, collected by Colonel Beddome.

2. It is hardly necessary for me to say that I entertain the highest respect for any opinion that may come from the distinguished staff at Kew, but at the same time would suggest a further reference with regard to the "*pubescens*" and "*magnifolia*" of the Government estates.

3. I am the more encouraged to make this suggestion from the circumstance that it is not stated positively in the Kew letter that our "*magnifolia*" is not the *Pata de Gallinazo*; the words being "it may be said with some certainty that the Nilgiri '*magnifolia*' is not the '*Pata de Gallinazo*' of Chimborazo."

4. My reasons for recommending another reference may be briefly stated as follows:—

- A. *Magnifolia* and *pubescens* are found in the oldest plantings on the estates, and of a size that appears to me to indicate that they are of the original South American stock and not "supplies" subsequently put out. In the collection recently made by me, there are specimens from *magnifolia* and *pubescens* trees growing in the plots planted in 1862. If these plants were put down in that year, it is of course impossible that they could be hybrids of Indian origin.
- B. We have Mr. Cross's positive statement that he sent plants of *magnifolia*, or as he calls it *Pata de Gallinazo*, to India, and the probabilities are in favour of his having done so.
- C. It seems an extraordinary coincidence that there should arise on the estates two hybrids approaching so closely, in their mutual affinities and general characteristics, the two plants seen by Dr. Spruce and others in the forests of Llalala, in Ecuador.
- D. I have examined hundreds of trees on private estates on which *magnifolia* and *pubescens* have been propagated, and there does not seem to be any decided tendency in the trees, as in the case of hybrids, to depart from the original type to a greater extent than what may be observed in other *Chinchonas*, whose claim to the rank of species is beyond doubt.
- E. On a reference to Dr. Spruce's narrative of his Chimborazo expedition, I find that his specimen sent to Kew of the pubescent *cuchicara*, which, I believe, corresponds with our *pubescens*, consisted of "good capsules, a few fragmentary flowery panicles, and, besides the rather imperfect leaves attached to the latter, only young leaves at the apex of two sterile ramuli." It is possible therefore that typical, well-grown specimens of our *pubescens* might differ very materially from the original at Kew, and yet be the same plant. As regards Spruce's smooth-leaved *cuchicara*, corresponding to our *magnifolia*, I find that the specimens sent by him to Kew were out of flower, and otherwise not so perfect as those forwarded from the Nilgiris. I would not have ventured to bring forward these points, were it not that there is so much other collateral evidence in favour of the probability that the South American plants and those on the Nilgiris are the same.

15TH APRIL 1882, No. 382, REVENUE.

F. The colour of the flowers is a deep pink or reddish pink, and the bark is also peculiar, as stated in my letter No. 235, of the 15th March 1882.

ORDER—dated 15th April 1882, No. 382, Revenue.

Miscellaneous.

The foregoing letter from Dr. Bidie will be forwarded to the Secretary of State for reference to Sir Joseph Hooker in reply to the despatch read above.

(True Extract.)

(Signed) E. F. WEBSTER,
Acting Secretary to Government.

To Dr. Bidie.
,, the Conservator of Forests.

Exd. W. H. French.

40 Copies.

Original

Govt. of (1882) Madras.
REVENUE.

Further C. No. 6503/82

Order, dated 15th April 1882, No. 392.

Cinchona plants — from the Nilgiris. — Dried
specimens of — sent for the Kew Herbarium —
Dr. Bidie's letter submitting observations on
Professor Thiselton Dyer's letter relative to the
—, forwarded to Secretary of State.

India Office,
London, 23rd February 1882.

Revenue,
No. 9.

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

SIR,

Referring to para. 6 of my Despatch,
No. 28, of the 10th November last, I now transmit,
for your Excellency's information, a copy of a
letter from Professor Thiselton Dyer, of the 24th
January, containing observations by Sir Joseph
Hooker relative to the dried specimens of *Cinchona*
plants from the Nilgiris sent home last year by your
Government for the Kew Herbarium.

I have the honour to be,

Sir,

Your most obedient humble Servant,

Lattington

58

ENCLOSURE.

Royal Gardens, Kew,
24th January 1882.

Sir,

I am desired by Sir Joseph Hooker to acknowledge the receipt of your letter, R. 749, of 10th November, on the subject of dried specimens of *Cinchona* plants from the Nilgiris, which were subsequently duly received.

These specimens have been carefully examined, and I am now to make the following observations with respect to them:—

1. Colonel Beddome has drawn especial attention to a variety which "has generally been supposed to be an accidental hybrid of Nilgiri origin, and is often known as M'Ivor's hybrid."

"It differs from (*Cinchona*) *succirubra* (besides in its more robust growth at a higher elevation and in poorer soil) in its leaves being "more pointed, more coriaceous, of a much darker green, and more "shining, and in the primary veins being less at right angles with the "midrib."

"The leaf is never so rounded at the apex, and it has a flatter surface, "and never the crumpled look that (*Cinchona*) *succirubra* always "assumed more or less."

This plant has received the plantation name of *Cinchona pubescens*. It must not, however, be confounded with the real *Cinchona pubescens* of Vahl.

2. Another *Cinchona* form is distinguished in the Nilgiri plantations under the name of *Cinchona magnifolia*, which again, as Colonel Beddome points out, has nothing to do with *Cinchona magnifolia* of Ruiz and Pavon.

3. The so-called "*pubescens*" and "*magnifolia*" of the Nilgiris only differ in the latter being "quite glabrous on the under surface of the leaves." Mr. Cross regards them as "scarcely distinguishable," and Colonel Beddome as "rather slight variations of the same species." The examination of the copious and carefully preserved specimens sent to this country by Colonel Beddome entirely confirm this view.

4. Bark from these two forms mixed indiscriminately sold for 7s. 1d. per lb., considerably more than the price fetched at the same time by Nilgiri crown bark. It appears also that the natural bark of "*pubescens*" has yielded on analysis 2.30 per cent. of quinine, and that of "*magnifolia*" 2.12 per cent.

5. Mr. Howard and Mr. Cross "both advocate the propagation of "*Cinchona succirubra* being given up in favour of" these forms. Colonel Beddome quite agrees "with this, considering the healthy and splendid growth." ✓

6. The question then arises, which has been referred to Kew, as to what these valuable *Cinchona* forms really are. To "*magnifolia*" Mr. Howard has assigned the name *Cinchona officinalis*, var. *pubescens*. He therefore regards it as specifically distinct from *Cinchona succirubra*. He has also, however, identified it (from bark specimens alone) with *Cinchona coccinea* of Pavon, in which he is no doubt in error. Mr. Cross, on the other hand, has identified "*magnifolia*" with the "Patade Gallinazo" of the Quaternian Andes. He claims that all the plants of it now in cultivation in India are the progeny of some plants collected

by him to fill up a package in "a hasty trip . . . to a ravine three miles up the wooded slope of" Chimborazo.

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Colonel Beddome argues that the form cannot be of hybrid origin, as he thinks it theoretically impossible that *Cinchona* hybrids can be produced spontaneously. The argument can, however, be easily met, and it appears the most probable account that can be given of the forms "*pubescens*" and "*magnifolia*," that they are hybrids between *succirubra* and *officinalis*.

There is no reason to suppose that such hybrids would be sterile, but their offspring would tend to revert to the characters of their own parents, a circumstance which appears repeatedly to have happened, though in every case explained away by Colonel Beddome as the result of a mistake.

8. The remaining specimens, Nos. 4, 17, sent home by Colonel Beddome, appear to call for no remark. Their determinations as far as can be judged are correct.

9. No. 8 is sent by Colonel Beddome as an unknown species, which Mr. Cross has identified with *Cinchona crista*, brought by him from the Loxa mountains. It appears, however, from Mr. Markham's work on Peruvian bark (p. 238) that the plant brought by Mr. Cross was the *Cinchona crista* of Tafalla. Now, as Colonel Beddome points out, the Nilgiri plant cannot by any possibility be that species. This throws some doubt on the dependence which can be placed on these identifications by me and of Mr. Cross's memory. It is, however, possible that the Loxa plant was itself erroneously named. This could only be ascertained by reference to the authentic specimens collected by Cross. It is much to be regretted that the whole of the original specimens of the plants whose seeds were sent out to found the *Cinchona* cultivation of British India were not deposited in the Kew Herbarium. The greater part, however, seems to have found their way into the hands of private individuals. Mr. Cross's specimens of *Cinchona crista* having remained partly in the possession of Mr. Markham (Peruvian bark, p. 260); application has been made to him for the loan of the

specimens, in order to test Mr. Cross's statement as to the identity of the Nilgiri plant with that brought by the latter from Loxa, but so far no reply has been received.

What the Nilgiri plant, No. 18, really is cannot, with the material at our disposal, be accurately determined. It is certainly a remarkable and well marked form, but its determination must, for the present, stand over.

10. In a letter to the Government of Madras, dated 3rd October, in which Colonel Beddome gives an account of his visit to Ceylon, he states that he finds the so-called "*magnifolia*" widely distributed in the island, thus confirming Dr. Trimén's statement upon the point. But he credits Dr. Trimén with the belief that the form is an undescribed species, and not a hybrid, a view which Dr. Trimén, in a letter to the "Ceylon Observer," dated 25th November, emphatically disclaims. He has in fact arrived, independently, at substantially the same view as that advanced in this letter.

As it is a matter of some importance that uniformity of nomenclature should, as far as possible, obtain with regard to the cultivated forms of *Cinchona*, I am to request that you will be so good as to cause a copy of this letter to be communicated to the Government of Ceylon.

I am, &c.,
(Signed) W. T. THISELTON DYER.

Sir Louis Mallet, C.B.

N^o 15.

Revenue

23rd Feb^y 1882.

The

Letter to Lord St George

N^o 9. enclosure

REVENUE (1882) DEPARTMENT.

No. 1111

From

The Secretary of State
for India

Dated 23rd February.
Recd. 18th March.

No. 9111

Print with the letter in file
17/4

SUBJECT.

Transmitted for
information copy of a letter
from Professor Hillebrand
Dyer containing observations
by Sir Joseph Hooker relating
to the dried Cinchona plants
sent from the Nilgiris to the
Kew Herbarium.

Rev. 17/4/82

95

Government Central Museum

Madras 29th March 1882

No 254

From

Surgeon Major George Bidie M.B.,
Superintendent Government Central
Museum

To

The Secretary to Government
Revenue Department
Fort Saint George.

Sir,

I have the honour to return with thanks
the Despatch from the Most Honorable the
Secretary of State, No 9 of 23rd February 1882, with
a letter from Kew containing observations on
certain dried specimens of Nilgiri Cinchonas, collected
by Col. Beddome.

2/ It is hardly necessary for me to say that I
entertain the highest respect for any opinion that
may come from the distinguished staff at Kew,
but at the same time would suggest a further
reference with regard to the "pubescens" and "magnifolia"
of the Government estates.

3/ I am the more encouraged to make this sugges-
tion from the circumstances, that it is not stated
positively in the Kew letter that our "magnifolia"
is not the Pata de Gallinazo; the words being "it may
be said with some certainty that the Nilgiri "magnifolia"
is

is not the "Pata de Gallinazo" of Chimborazo;
4 / My reasons for recommending another
reference may be briefly stated as follows.—

A. Magnifolia and pubescens are found in the
oldest plantings on the estates, and of a
size that appears to me to indicate, that they
are of the original South American stock, and
not "supplies" subsequently put out. In the
collection recently made by me there are
specimens from magnifolia and pubescens
trees growing in the plots planted in 1862. If
these plants were put down in that year, it
is of course impossible that they could be hybrids
of Indian origin.

B. We have Mr. Sereff's positive statement that
he sent plants of magnifolia, or as he calls
it Pata de Gallinazo, to India, and the
probabilities are in favour of his having done
so.

C. It seems an extraordinary coincidence, that
there should arise on the estates two hybrids
approaching so closely in their mutual
affinities and general characteristics, the two
plants seen by Dr. Spruce and others in the
forests of Lalla, in Ecuador.

D. I have examined hundreds of trees on
private estates on which magnifolia and
pubescens have been propagated, and there
does not seem to be any decided tendency
in the trees, as in the case of hybrids, to depart
from the original type to a greater extent,
than

105
than what may be observed in other Cinchonas,
whose claim to the rank of species is beyond
doubt.

E. On a reference to Dr. Spruce's narrative of
his Chimborazo expedition I find, that his
specimen sent to Kew of the pubescent Cuchicara,
which I believe corresponds with our pubescens,
consisted of "good capsules, a few fragmentary
"flowery panicles, and, besides the rather
"imperfect leaves attached to the latter, only
"young leaves at the apex of two sterile ramuli".

It is possible therefore that typical, wellgrown
specimens of our pubescens might differ very
materially from the original at Kew, and
yet be the same plant. As regards Spruce's
smooth leaved Cuchicara, corresponding to our
magnifolia, I find, that the specimens sent
by him to Kew were out of flower, and
otherwise not so perfect as those forwarded
from the Vilgiris. I would not have
ventured to bring forward these points were
it not, that there is so much other collateral
evidence in favour of the probability, that
the South American plants and those on
the Vilgiris are the same.

F. The colour of the flowers is a deep pink or
reddish pink, and the bark is also peculiar,
as stated in my letter No. 235 of the
15th March 1882.

I have the honor to be,
Sir,

Your Most Obedient Servant

Lidell M.S. Surgeon Major
Superintendent Govt Central
Museum.

10.2.21

No.s. 1534 & 1746.

Despatch From the Secretary of State of 23rd Feb 1882, No 9.
and letter from Dr Bidie of 29th March 1882
regarding Nilgiri chinchona specimens¹⁸⁸ at Kew.
FOR ORDERS.

The letter to England,
forwarding Dr Bidie's
late report on Chinchona
specimens, was despatched
on the 29th Instant.

For 1/4
Jm 31/3/82

Dr. send the 2nd copy
& ask that it be referred
to Kew. J.B.

Revenue (1882) Department

From No. 1746

The Superintendent
Government Central
Museum

Pres-
17/4

No. 284

Dated 29th March 1882.
Res. 29th -

Secy.

99³
Jm
No

Subject

Returning despatch from Secretary
of State with Dr Thielson Dyer's
observations on specimens of Nilgiri
Chinchona collected by Col. Beddome
and suggesting a further reference with
regard to the "pubescens" and
"magnifolia" of the Government
Gardens.

With an illustration

Ref. to 20-3-82

Read Cms. 1534 & 1746

Order No. 382

The foregoing letter
will be forwarded
to the Secretary of
State for reference
to Sir Joseph Hooker
in reply
with reference to the
Secretary of State's
Despatch of the
23rd Feb last.

15-4-82
15-4-82

Dr. Bidie

The Conservator of Forests
S. Colin & by (Col. Thielson)

1-4-82
13-4-82

Cnos 1534 + 1746

FOR ORDERS.

Nilgiri Cinchona
Specimens at Kew.

Proctor's Cinchona

Ans