

MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

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*Proceedings of the Madras Government, Revenue Department,
13th July 1861.*

No. 189. Read the following Despatch from the Right Honorable Sir C. WOOD, Bart., Secretary of State for India (Public), to His Excellency the Honorable the Governor in Council, Fort Saint George, dated India Office, London, 7th June 1861, No. 25:—

SIR,

1. I have considered in Council your letter in the Revenue Department, dated 12th March (No. 35) 1861, and learn with regret the failure of the Cinchona Plants taken out to India by Mr. Markham, and of the cuttings from them taken at Ootacamund, which, at the date of your letter of the 20th October last, presented so promising an appearance. This failure cannot, however, be in any way regarded as conclusive against the success of the whole experiment, of which this consignment of plants formed but a small part, especially when it is borne in mind that the collection was conveyed to India at a season of the year most unfavourable to its safe transit, and that all the plants taken by the Dutch to Java perished, with the exception of two, although they were sent direct from South America on a steamer chartered expressly for the purpose.

2. I have perused the Reports of Dr. Macpherson on his visits to the Cinchona plantations in Java, and on the sites proposed for the plantations in your Presidency. It seems probable that the Dodabett site would not be suitable for any species but the *Cinchona Calisaya* (var. *Josephiana*) and the *Cinchona Nitida*, but considering the facilities which its close neighbourhood to the Horticultural Gardens presents for the constant superintendence of the experiment by Mr. McIvor, I am of opinion that the idea of forming plantations of those species on the site in question should not be relinquished; and that it is desirable that Mr. McIvor should not be debarred from making use of the glass-houses, and the other appliances of the Horticultural Gardens, for the purpose of propagating seeds and raising plants of the Cinchonas, should he continue to think that those operations can be undertaken there with a fair prospect of success.

3. You will already have learnt that all the consignments of plants and seeds from South America have now been despatched to your Presidency, and I have received information that 456 plants of the *Cinchona Succirubra*, and six plants of the *Cinchona Calisaya*, have arrived at Ootacamund in a thriving condition, as well as a similar consignment which was sent to Ceylon. The seeds at Ootacamund and in Ceylon are, I am informed, coming up by hundreds; and I may add, for your information, that there is now a reserve of upwards of 20,000 healthy seedling plants of the most valuable species of Cinchonæ, in the gardens at Kew.

4. With regard to your proposal to take advantage of the willingness of the Dutch authorities in Java to exchange species of their Cinchonæ for those which we may possess, it will be necessary to use great caution, as there is much reason to doubt whether (with the exception of the *Calisaya* species, plants of which we already have in Kew gardens and in Ceylon, as well as in the six plants lately arrived at Ootacamund), the species of Cinchonæ now growing in Java are of any value.

5. With reference to the mission of Dr. Macpherson to the Neilgherry Hills and Coorg, and to the reports furnished by him, upon which the order of your Government is founded, I desire that this experiment may be placed in charge of a competent gardener, who shall be responsible for the measures adopted for its success; and it appears to me that Mr. McIvor, the Superintendent of the Government Gardens at Ootacamund, now on the spot, is, from his experience in the propagation of plants generally, and from the opportunities he has had for obtaining information from Mr. Markham respecting the Cinchona plants, the most suitable person at present available for this duty.

6. I enclose, for your information,—a Number in this packet,—a further report by Mr. Markham on the above subject.

MEMORANDUM for the Secretary of State for India in Council, dated India Office,
17th May 1861.

With reference to the Order of the Madras Government (dated March 9th 1861, No. 552), founded on Dr. Macpherson's Report on the sites selected by me, for Cinchona plantations, in the hills of Southern India, it is important that the exact state of the case should be laid before

the Secretary of State in Council, both as regards the present condition of the experiment to introduce quinine yielding trees into India, and as regards the bearing of the recent order of the Madras Government.

The present condition of the experiment to introduce the Cinchona trees into India is as follows:—

At Ootacamund the seeds of *C. Nitida*, *C. Micrantha*, and *C. Succirubra*, are coming up by hundreds, the earliest being now strong healthy young plants; and, early in April, 456 plants of *C. Succirubra*, and six of *C. Calisaya*, arrived in good condition. Two cuttings of my original collection are still living.

In Ceylon the seeds of *C. Nitida*, *C. Micrantha*, and *C. Succirubra*, are also coming up in abundance, and several plants of *C. Calisaya* have been received in good condition.

At Kew, there are upwards of 10,000 healthy seedlings of the three first-named species, besides a number of rooted cuttings of *C. Calisaya*, so that further supplies of Cinchona plants can be forwarded to India from time to time.

The attempt has, therefore, in spite of three or four disappointments, been crowned with complete success, so far as the safe introduction of the plants into India is concerned; and the best measures for ensuring the eventual success of the Cinchona cultivation in India alone remain to be considered. During my stay in India, I carefully examined and selected the sites most suitable for the cultivation of Cinchonæ, comparing them with the analogous Cinchona regions of South America; and in my letters, dated Ootacamund, October 20th 1860, and Bombay, February 26th 1861, I recorded my reasons for selecting those sites for the species which were likely to arrive in India, and expressed opinions which I have since had no reason to alter.

The Madras Government, however, has since issued an order reversing some of the arrangements made by Mr. Melvor and myself, in consequence of recommendations made by Dr. Macpherson, the Inspector of Hospitals, in two reports to the Madras Government, which were drawn up in consequence of a visit of a few days which he paid to the Cinchona plantations in Java.

Dr. Macpherson's first Report, dated December 19th 1860, contained some information respecting the mode of culture of Cinchona trees in Java. This Report, however, contained no new information, as I had long before made myself thoroughly acquainted with the state of the experiment now in process of trial by the Dutch, through the far more authentic and fuller accounts published from time to time by Dr. Junghuhn himself, the Dutch Superintendent, in the "*Bonplandia*," a German periodical.

I am not of opinion that the operations of the Dutch have been so successful as to be any guide in our selection of sites, for the following reasons. Mr. Hasskarl, the Dutch Collector who was sent to South America, only entered the forests of Uchubamba, where very inferior species alone are found; and he never penetrated into the *Calisaya* forests, but employed an agent to collect plants for him. The sites which he selected in Java have since been found unsuitable, and the other Dutch gentlemen who have been concerned in managing the experiment in Java are entirely unacquainted with the Cinchona region of South America. It must necessarily be more prudent to select the sites by comparing them with the native region of the Cinchona, than by their analogy to localities in Java which have been chosen by gentlemen to whom the South American forests are an unknown country. A stronger reason for not adopting the Java standard, is that, with the exception of *C. Calisaya*, the species in Java are different from those we have in India. It is hardly necessary to add that the requirements of different species of Cinchonæ are very distinct, both as regards elevation, soil, and climate.

But there are still stronger reasons for not being blindly guided by Dutch experience; not only have they made mistakes in the selection of sites, and adopted, as I believe, an erroneous system of culture, but the vast majority of their plants are of utterly worthless species. The species called by Dr. Junghuhn *C. Orata*, and afterwards altered to *C. Lucumafolia*, of which the Dutch now have upwards of 100,000 plants in Java, turns out to be a new but quite useless species, of about as much value as a common willow. The same may be said of the species erroneously called by them *C. Succirubra*, so that the only quinine yielding species in Java is the *C. Calisaya*, plants of which we also possess at Kew, in Ceylon, and in the Neilgherry Hills.

In these remarks, I am merely anxious to set forth the plain facts of the case, and by no means to disparage the very meritorious exertions of M. Pahud and the Netherlands Government to introduce this valuable plant into Java. They have carried on their experiments, quite regardless of expense, with untiring energy, and with a determination which must in the end be rewarded by complete success. Convinced that the final results of their endeavours would enrich the island, they have, in this case, as in all their other operations in Java, permitted an expenditure on a most liberal scale, and adopted the same system which has rendered Java the most flourishing and the most successful colony ever planted by any European nation. Nevertheless, it is more likely that the Dutch Government will make a request to be supplied with plants of some of our species of Cinchonæ, than that it will be necessary for us to prefer such a request to them.

Dr. Macpherson's second Report, dated 11th January 1861, merely describes the sites selected by Mr. Melvor and myself in the Neilgherry Hills and Coorg, and which had already been fully reported on by me. He, however, makes two recommendations, which, having been adopted in the order of the Madras Government, require some further remark.

The first of these, which is contained in paragraph 3 of his Report, refers to the important site behind the Government Gardens at Ootacamund, which I had approved, for reasons contained in my letter dated Ootacamund, October 20th 1860, for the experimental culture of species which thrive best at considerable altitudes. The Madras Government has adopted Dr. Macpherson's advice that this site should be abandoned, in opposition to the opinion expressed by me, the force of which I still very strongly feel.

Dr. Macpherson, in support of his opinion, makes three quotations, one stating that "the bark containing the largest amount of alkaloids is obtained from trees growing at the greatest altitudes," which he considers to be in favor of the site, and the second and third, which he quotes as conclusive against it, stating that "the best trees inhabit dense woods, and aspire to rise above the tops of the highest trees," and that "the finest trees grow in soil of immense thickness, and in which few or no stones were intermixed." The site in question, he adds, is wanting in luxuriant vegetation, the trees do not give sufficient shade, the soil is a black vegetable mould, on disintegrated granite, it is deficient in moisture,* and, a fact which he probably deems conclusive, it bears no resemblance to the sites where the Cinchona plants flourish in Java. He, therefore, advises its abandonment.

With regard to the quotations on which Dr. Macpherson's conclusion is founded, they are taken from different writers, and refer to different species, with very distinct requirements as regards soil, climate, and elevation. The first quotation refers to a variety of *C. Calisaya* found in small thickets at great elevations, surrounded by grassy slopes; the second, apparently from Humboldt, refers to the *C. Condaminea*, found in extensive shady forests, at great heights; and the third to *C. Succirubra*, growing in hot, damp forests, at low elevations. Now, to base an argument on the suitability or otherwise of one locality, by quoting statements respecting plants of totally distinct habits, is like saying that Ireland is not adapted for the growth of the potato, because tobacco thrives best in Manilla and capsicums in Malabar.

I approved of the Dodabetta site, because it is of suitable elevation for the experimental culture of *C. Nitida*, *C. Calisaya*, and *C. Condaminea*, because there is sufficient shade, because the soil is not a superficial superstratum of black vegetable mould on disintegrated granite but a deep rich loam, and because it does not bear any resemblance to the sites in Java (which were chosen for the cultivation of quite different species). I am of opinion that there is a sufficient supply of moisture. The site was selected in consequence of its very close resemblance to the localities where the shrub variety of *Calisaya* flourishes in Carabaya and Bolivia, and the *C. Nitida* near Huanuco, circumstances which I consider of more consequence than that it should resemble sites selected in Java by those who are unacquainted with either Carabaya, Bolivia, or Huanuco, and who did not contemplate the cultivation of *C. Nitida*. We now have a large supply of the latter species at Ootacamund, as well as plants of *C. Calisaya* at Ootacamund, Ceylon, and Kew, some of which ought to be tried at the Dodabetta site, and

* All the above statements of Dr. Macpherson are incorrect.

I consider it to be of very great importance that that site should be retained. Some expense has already been incurred in making a road to it from the cantonment.

I am glad to find that Dr. Macpherson approves of the other sites selected by me, and that, therefore, the Madras Government has not ordered their abandonment.

The second recommendation in Dr. Macpherson's Report, above referred to, is that the seeds and plants should not be propagated in the Government Gardens at Ootacamund, on account of the elevation being too great; and the Madras Government has, therefore, ordered any further attempt to propagate seeds or raise plants in the Government Gardens to be put a stop to. If this order has been put in force at once, I fear that the vast majority of tender seedlings must have been destroyed; and I sincerely trust that Mr. McIvor, as a practical gardener, may have been allowed to exercise some discretion in the matter. Of course, the sooner the red bark plants are removed to a lower elevation, after they have recovered from their long voyage, the better; but, at the date of the order in question, Mr. McIvor's preparations for the reception of young plants had been stopped, through Dr. Macpherson's interference, and, until those preparations are made, their removal, or the stoppage of all attempts to rear them at the gardens, would ensure their destruction. The plants of *C. Nitida* are at a very suitable elevation in the Government Gardens, and there is no occasion for their removal, until planted in the Dodabetta site. The plants of *C. Saccirubra* should be removed to Naduvattam as soon as possible. They require heat, moisture, and thrive best at low elevations. It is even possible that the gardener Cross may be of opinion that the site at Naduvattam is not sufficiently warm, and at too great an elevation, and his opinion, as regards that species, is the best that can be procured. I am convinced, however, that the Naduvattam and Coorg sites, selected by me, are well adapted for the growth of *C. Calisaya* and *C. Micrantha*.

I trust that all questions respecting the use of the green-houses at Ootacamund, for propagating seeds or raising plants, may be left to the judgment of Mr. McIvor and Cross, who, as experienced and intelligent practical gardeners, must be the best judges in such matters.

It seems to be of the first importance that the experiment of introducing these plants should be placed in the hands of a practical gardener, who would be responsible for the measures he may adopt, but who should be allowed to exercise his own discretion in matters of detail, without being liable to interference from officers who can have no practical acquaintance with the subject. Hereafter, when the plantations are fairly established, it may be considered advisable to appoint a special Superintendent from England, to conduct the experiment; but, at present, Mr. McIvor, the Superintendent of the Government Gardens at Ootacamund, who is on the spot, seems to be the proper person to undertake this duty. Mr. McIvor appeared to me to be a most zealous, active, and intelligent practical gardener, he has paid particular attention to the cultivation of the Cinchona plants, is in possession of all the information that I and the gardener Cross have acquired in South America, by personal observation, and he feels deep interest in the success of the experiment. He is the only man of the kind who is available at present, and, unless the direction of the experiment is placed in the hands of a competent gardener, in whom full reliance can be placed, and who is not liable to interference from officers who can have no knowledge of the subject, I fear that the attempt will end in failure. It will be fortunate if the services of Cross can be secured, either to act under Mr. McIvor, or to establish Cinchona nurseries in Coorg; but, unless he changes his mind, I believe it was his intention to return to England almost immediately.

When the Cinchona plantations are fairly established and success appears virtually secured, the Secretary of State in Council will probably take into consideration the establishment which will then be necessary for the superintendence and conduct of the experiment, and the best measures for the extension and profitable cultivation of the plants.

In justice to my collection of plants, I feel bound to make some allusion to the very incorrect statements contained in paragraph 6 of the order of the Madras Government. It is there stated that Dr. Macpherson laid before that Government specimens of the plants brought cut by me, which were fair samples of the whole, that these were offshoots from the roots of trees, dug up with small portions of the root whence they sprang, but with no roots of their

own, so that it is no wonder that they all died. It is added, that this batch of plants was not a fair trial of the experiment.

To this I answer that, in the first place, Dr. Macpherson is mistaken in supposing that he laid any specimens of my plants before the Madras Government. The roots of my plants became rotten on account of the intense heat of the Red Sea and of Bombay during the hot months of September and October, and they were all converted into cuttings three months before Dr. Macpherson ever came to the Neilgherry Hills (as reported in my letter dated Ootacamund, October 20th 1860), so that it is quite impossible that he can have laid any of my plants before the Madras Government. He may have laid some of the cuttings before them, which of course had no roots, as they had been cut off; but they can scarcely be considered as fair samples of the plants from which they were taken, after the roots had been removed.

In the second place, the Madras Government has been entirely misinformed as to the way in which I collected the plants in South America. It is true that, on account of the extreme rareness of seedling plants, and the great difficulty in finding them, owing to the density of the forest, of which the jungles of the Indian peninsula can give but a faint idea, I was obliged to take a great number of root shoots, and indeed they formed the majority of my collection. But it is quite an error that they had no roots of their own; indeed, the accusation contained in such an assertion is a slur upon me which I cannot pass unanswered. None were taken which did not spring from the roots of the old trunks below the ground, and they all had spreading roots of their own. Many of the plants, however, were seedlings; indeed, a number of those of *C. Calisaya* and *Ovata*, all those of *C. Micrantha*, and the great majority of those of *C. Calisaya*, var. *β Josephiana* were strong healthy young seedling plants.

The large collection of plants made by me in the forests of Carabaya were strong healthy plants of all the valuable species to be found in that region; and, notwithstanding the great difficulty in conveying them across the arctic climate of the plateaux of the Andes, and the obstructions placed in my way at the port of embarkation, they arrived in a perfectly healthy condition in England, and would have reached India with equally successful results had a steamer been provided to take them direct across the Pacific. Hundreds of them threw out green shoots and leaves during the voyage, so that Mr. McIvor was able to take between 200 and 300 green cuttings from them at Ootacamund, which would have been impossible had this unjust accusation been true.

The Madras Government has been entirely misinformed respecting the plants which formed my collection, and I must most emphatically deny the correctness of the statements made in paragraph 6 of their Order, dated March 9th 1861, No. 552.

(Signed) CLEMENTS R. MARKHAM.

No. 190. ORDER THEREON, 13th July 1861, No. 1,399.

Resolved that this Despatch be replied to by referring the Home Government to the letters in this Department, dated 24th April and 6th July 1861, Nos. 63 and 89.

(Signed) J. D. SIM,

Secretary to Government.

Memorandum for the Secretary of State for India in Council.

India Office,
May 17th, 1861.

With reference to the order of the Madras Government (dated March 9th, 1861, No. 552), founded on Dr. Macpherson's Report on the sites selected by me, for cinchona plantations, in the hills of Southern India, it is important that the exact state of the case should be laid before the Secretary of State in Council, both as regards the present condition of the experiment to introduce quinine-yielding trees into India, and as regards the bearing of the recent order of the Madras Government.

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Dr. Macpherson's first Report, dated December 19th, 1860, contained some information respecting the mode of culture of cinchona trees in Java. This Report, however, contained no new information, as I had long before made myself thoroughly acquainted with the state of the experiment now in process of trial by the Dutch, through the far more authentic and fuller accounts published from time to time by Dr. Junghuhn himself, the Dutch Superintendent, in the "Bonplandia," a German periodical.

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But there are still stronger reasons for not being blindly guided by Dutch experience; not only have they made mistakes in the selection of sites, and adopted, as I believe, an erroneous system of culture, but the vast majority of their plants are of utterly worthless species. The species called by Dr. Junghuhn *C. Ovata*, and afterwards altered to *C. Lucumafolia*, of which the Dutch now have upwards of 900,000 plants in Java, turns out to be a new but quite useless species, of about as much value as a common willow. The same may be said of the species erroneously called by them *C. Succirubra*, so that the only quinine-yielding species in Java is the *C. Calisaya*, plants of which we also possess at Kew, in Ceylon, and in the Neilgherry Hills.

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I approved of the Dodabetta site, because it is of suitable elevation for the experimental culture of *C. Nitida*, *C. Calisaya*, and *C. Condaminea*, because there is sufficient shade, because the soil is not a superficial superstratum of black vegetable mould on disintegrated granite but a deep rich loam, and because it does not bear any resemblance to the sites in Java (which were chosen for the cultivation of quite different species). I am of opinion that there is a sufficient supply of moisture. The site was selected in consequence of its very close resemblance to the localities where the shrub variety of *Calisaya* flourishes in Caravaya and Bolivia, and the *C. Nitida* near Huanuco, circumstances which I consider of more consequence than that it should resemble sites selected in Java by those who are unacquainted with either Caravaya, Bolivia, or Huanuco, and who did not contemplate the cultivation of *C. Nitida*. We now have a large supply of the latter species at Ootacamund, as well as plants of *C. Calisaya* at Ootacamund, Ceylon, and Kew, some of which ought to be tried at the Dodabetta site, and I consider it to be of very great importance that that site should be retained. Some expense has already been incurred in making a road to it from the cantonment.

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The second recommendation in Dr. Macpherson's Report, above referred to, is that the seeds and plants should not be propagated in the Government Gardens at Ootacamund, on account of the elevation being too great; and the Madras Government has, therefore, ordered any further attempt to propagate seeds or plants in the Government Gardens to be put a stop to. If this order has been put in force at once, I fear that the vast majority of tender seedlings must have been destroyed; and I sincerely trust that Mr. M'Ivor, as a practical gardener, may have been allowed to exercise some discretion in the matter. Of course, the sooner the red bark plants are removed to a lower elevation, after they have recovered from their long voyage, the better; but, at the date of the order in question, Mr. M'Ivor's preparations for the reception of young plants had been stopped, through Dr. Macpherson's interference, and, until those preparations are made, their removal, or the stoppage of all attempts to rear them at the gardens, would ensure their destruction. The plants of *C. Nitida* are at a very suitable elevation in the Government Gardens, and there is no occasion for their removal, until planted in the Dodabetta site. The plants of *C. Succirubra* should be removed to Neddiwuttum as soon as possible. They require heat, moisture, and thrive best at low elevations. It is even possible that the gardener Cross may be of opinion that the site at Neddiwuttum is not sufficiently warm, and at too great an elevation, and his opinion, as regards that species, is the best that can be procured. I am convinced, however, that the Neddiwuttum and Coorg sites, selected by me, are well adapted for the growth of *C. Calisaya* and *C. Micrantha*.

I trust that all questions respecting the use of the greenhouses at Ootacamund, for propagating seeds or raising plants, may be left to the judgment of Mr. M'Ivor and Cross, who, as experienced and intelligent practical gardeners, must be the best judges in such matters.

It seems to be of the first importance that the experiment of introducing these plants should be placed in the hands of a practical gardener, who would be responsible for the measures he may adopt, but who should be allowed to exercise his own discretion in matters of detail, without being liable to interference from officers who can have no practical acquaintance with the subject. Hereafter, when the plantations are fairly established, it may be considered advisable to appoint a special Superintendent from England, to conduct the experiment; but, at present, Mr. M'Ivor, the Superintendent of the Government Gardens at Ootacamund, who is on the spot, seems to be the proper person to undertake this duty. Mr. M'Ivor appeared to me to be a most zealous, active, and intelligent practical gardener, he has paid particular attention to the cultivation of the cinchona plants, is in possession of all the information that I and the gardener Cross have acquired in South America, by personal observation, and he feels deep interest in the success of the experiment. He is the only man of the kind who is available at present, and, unless the direction of the experiment is placed in the hands of a competent gardener, in whom full reliance can be placed, and who is not liable to interference from officers who can have no knowledge of the

subject, I fear that the attempt will end in failure. It will be fortunate if the services of Cross can be secured, either to act under Mr. M'Ivor, or to establish cinchona nurseries in Coorg; but, unless he changes his mind, I believe it was his intention to return to England almost immediately.

When the cinchona plantations are fairly established and success appears virtually secured, the Secretary of State in Council will probably take into consideration the establishment which will then be necessary for the superintendence and conduct of the experiment, and the best measures for the extension and profitable cultivation of the plants.

In justice to my collection of plants, I feel bound to make some allusion to the very incorrect statements contained in paragraph 6 of the order of the Madras Government. It is there stated that Dr. Macpherson laid before that Government specimens of the plants brought out by me, which were fair samples of the whole, that these were offshoots from the roots of trees, dug up with small portions of the root whence they sprung, but with no roots of their own, so that it is no wonder that they all died. It is added, that this batch of plants was not a fair trial of the experiment.

To this I answer that, in the first place, Dr. Macpherson is mistaken in supposing that he laid any specimens of my plants before the Madras Government. The roots of my plants became rotten on account of the intense heat of the Red Sea and of Bombay during the hot months of September and October, and they were all converted into cuttings three months before Dr. Macpherson ever came to the Neilgherry Hills (as reported in my letter dated Ootacamund, October 20th 1860), so that it is quite impossible that he can have laid any of my plants before the Madras Government. He may have laid some of the cuttings before them, which of course had no roots, as they had been cut off; but they can scarcely be considered as fair samples of the plants from which they were taken, after the roots had been removed.

In the second place, the Madras Government has been entirely misinformed as to the way in which I collected the plants in South America. It is true that, on account of the extreme rareness of seedling plants, and the great difficulty in finding them, owing to the density of the forest, of which the jungles of the Indian peninsula can give but a faint idea, I was obliged to take a great number of root shoots, and indeed they formed the majority of my collection. But it is quite an error that they had no roots of their own; indeed, the accusation contained in such an assertion is a slur upon me which I cannot pass unanswered. None were taken which did not spring from the roots of the old trunks below the ground, and they all had spreading roots of their own. Many of the plants, however, were seedlings; indeed, a number of those of *C. Calisaya* and *Ovata*, all those of *C. Micrantha*, and the great majority of those of *C. Calisaya*, var. β *Josephiana* were strong healthy young seedling plants.

The large collection of plants made by me in the forests of Carabaya were strong healthy plants of all the valuable species to be found in that region; and, notwithstanding the great difficulty in conveying them across the arctic climate of the plateaux of the Andes, and the obstructions placed in my way at the port of embarkation, they arrived in a perfectly healthy condition in England, and would have reached India with equally successful results had a steamer been provided to take them direct across the Pacific. Hundreds of them threw out green shoots and leaves during the voyage, so that Mr. M'Ivor was able to take between 200 and 300 green cuttings from them at Ootacamund, which would have been impossible had this unjust accusation been true.

The Madras Government has been entirely misinformed respecting the plants which formed my collection, and I must most emphatically deny the correctness of the statements made in paragraph 6 of their order dated March 9th, 1861, No. 552.

CLEMENTS R. MARKHAM.

LONDON:

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Referred to in Public Letter to
President No 25 dated 4 June.

India Office,
London, 7th June 1861.

Public,

His Excellency The Honourable The Governor
in Council. Fort St. George.

SIR,

1. I have considered in Council your Letter in the Revenue Department, dated 12th March (No. 35) 1861, and learn with regret the failure of the Cinchona Plants taken out to India by Mr. Markham, and of the cuttings from them taken at Ootacamund, which, at the date of your letter of the 20th October last, presented so promising an appearance. This failure cannot, however, be in any way regarded as conclusive against the success of the whole experiment, of which this consignment of plants formed but a small part, especially when it is borne in mind that the collection was conveyed to India at a season of the year most unfavourable to its safe transit, and that all the plants taken by the Dutch to Java perished, with the exception of two, although they were sent direct from South America on a steamer chartered expressly for the purpose.

2. I have perused the Reports of Dr. Macpherson on his visits to the Cinchona plantations in Java, and on the sites proposed for the plantations in your Presidency. It seems probable that the Dodabett site would not be suitable for any species but the *Cinchona Calisaya* (var. *Josephiana*) and the *Cinchona Nitida*, but considering the facilities which its close neighbourhood to the Horticultural Gardens presents for the constant superintendence of the experiment by Mr. M'Ivor, I am of opinion that the idea of forming plantations of those species on the site in question should not be relinquished; and that it is desirable that Mr. M'Ivor should not be debarred from making use of the glass-houses and the other appliances of the Horticultural Gardens, for the purpose of propagating seeds and raising plants of the Cinchonas, should he continue to the think that those operations can be undertaken there with a fair prospect of success.

3. You will already have learnt that all the consignments of plants and seeds from South America have now been despatched to your Presidency, and I have received information that 456 plants of the *Cinchona Calisaya*, and six plants of the *Cinchona Succirubra*, have arrived at Ootacamund in a thriving condition, as well as a similar consignment which was sent to Ceylon. The seeds at Ootacamund and in Ceylon are, I am informed, coming up by hundreds; and I may for your information, that there is now a reserve of upwards of 20,000 healthy seedling plants of the most valuable species of Cinchona in the gardens at Kew.

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4. With regard to your proposal to take advantage of the willingness of the Dutch authorities in Java to exchange species of their Cinchonæ for those which we may possess, it will be necessary to use great caution, as there is much reason to doubt whether (with the exception of the *Calisaya* species, plants of which we already have in Kew gardens and in Ceylon, as well as in the six plants lately arrived at Ootacamund,) the species of Cinchonæ now growing in Java are of any value.

5. With reference to the mission of Dr. Macpherson to the Neilgherry Hills and Coorg, and to the reports furnished by him, upon which the order of your Government is founded, I desire that this experiment may be placed in charge of a competent gardener, who shall be responsible for the measures adopted for its success; and it appears to me that Mr. M'Ivor, the Superintendent of the Government Gardens at Ootacamund, now on the spot, is, from his experience in the propagation of plants generally, and from the opportunities he has had for obtaining information from Mr. Markham respecting the Cinchona plants, the most suitable person at present available for this duty.

6. I enclose, for your information,—a Number in this packet,—a further report by Mr. Markham on the above subject.

I have the honour to be,

Sir,

Your most obedient, humble Servant,

Robert

^{The}
Letter to Fort St. George.
N: 25

Sept 5, 1842

Me

Walter C. Gordon

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Regarding the trial of the
plants in vision p.

Revised July 1861

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A copy referring to the Glances and the Letters

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