Revenue Department

No 323

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No. 63. Read the following letter from H. CLEGHORN, Esq., M. D., Superintendent Botanical Gardens; to the Secretary to Government Revenue Department, Fort Saint George; dated Ootacamund 13th November 1858, No. 488.

SIR,

I have the honor to forward Mr. McIvors Annual Report of the Government Garden at Ootacamund for the year 1857, which exhibits a satisfactory statement of progress in his interesting sphere of duty. As I entered fully into the past history of this Institution in a Memorandum dated 6th August 1857, I will confine my remarks at present to the Report under review, and the alterations effected during the past year, which I have myself witnessed.

2. The lower part of the Garden as well as the approach to the Gateway have lately undergone very considerable improvement as mentioned in para. 5. The residents and Visitors, with whom I have spoken have generally expressed their approval of the changes which have taken place in the laying out of the Garden within the last two years.

3. The broad walk near the entrance with Coniferous trees &c. on either side is well planned, and it is evident that Mr. McIvor has taken great pains to arrange the Garden with a view to ornament.

Conservatory.—4. The Conservatory sanctioned in 1855, and alluded to in last report as being erected, has been completed, with the exception of inside fittings and outside painting, and is being filled with Orchids and other interesting plants which will not only be a great source of attraction, but be of material aid to Naturalists visiting the Hills. Though the structure is not so picturesque as could be desired, I trust that this adjunct will prove of great value to the Garden. The defects of construction alluded to by Mr. McIvor (para. 9.) certainly exist, but it must be remembered, 1st; that the building was proceeded with after an interval, owing to the suspension of Public Works; and 2d, that buildings of this description form a separate branch of business in England, and the details of construction require an experience not often found in this country.

Sketch Plan of Garden.—5. The accompanying plan of the arrangements in the Garden, will it is expected prove useful. I beg to suggest that it be lithographed, and that the descriptive letter press accompanying it should form a small pamphlet to be had at the Garden gate. Strangers wishing to see the Collection would find it convenient to study the position of the respective plots, ponds, &c.

Labelling of Plants.—6. It would be advisable to attach labels to the plants in the Garden, most of which are quite new to the majority of Visitors, and in this climate, where air and exercise are taken all the day long, permanent plant labels to designate the different species would be a useful means of instruction and attraction, and tend to correct errors of nomenclature.

Systematic Catalogue.—7. The Garden having been now ten years in existence, a classified Catalogue of the plants *actually growing in it*, would certainly be a useful contribution both to casual visitors and to men of science. This *Hortus Neilgherrensis* should be arranged according to the natural system, and indigenous plants should be distinguished from those which are cultivated or naturalized. The Catalogue of plants and plan of the garden ought to be stitched in one cover.

Medical Plants.—8. The dried leaves of the English Foxglove (*Digitalis purpurea,*) which grows freely, are supplied to the Medical Stores. The Dandelion, (*Leontoden, taraxacum*), threatens to become a weed in the garden. The true Peppermint (*Mentha piperita,*) fringes several of the ponds, and the Indian Hemp (*Canabis Indica,*) luxuriates at Kulhutty. Pharmacentic preparations of these and other officinal plants as Belladonna might be made at Ootacamund, but this duty does not properly belong to the Superintendent of a Government Botanical Garden.

Foxglove.
Dandelion
Peppermint.
Cannabis Sativa.
Belladonna.

and

Hill Berberry.

9. I may here mention that Dr. Maitland has recently prepared a considerable quantity of the extract of Hill Berberry which is coming into repute.

Jalap.

10. The tubers of the Jalap Plant received a few years ago from South America, through Messrs. Veitch and Son, are now increasing in size and giving shoots at Kulhutty, and Mr. McIvor hopes soon to raise a number of young plants for distribution to Mysore, &c.

Cinchona.

11. The experiment of introducing the Quinine yielding Cinchona plants is well worth of trial, especially in the Neilgherries. If possible, it should be conducted on a large scale, and with several species of the Genus to be planted in various parts of the Hills. It is well known that the most valuable species, *(Cinchona Calisaya,)* has been successfully introduced into the Dutch Netherlands, and it is certainly most desirable that the British Government should make the attempt to obtain the Cinchona either from Java, or from its native Habitat in the Andes.

Seeds.—12. Some time ago, the report of the seeds transmitted to the Horticultural Society, London, for experimental growth was unfavorable, but a note received by Dr. Wight from Professor Lindley, enclosing a Memorandum of the Garden Superintendent at Chiswick and forwarded to Mr. McIvor for his information, since the Annual Statement was drawn up, places matters in a different light. Mr. Henderson's Memo. is herewith annexed, and is very satisfactory, showing that only three of the assortment of vegetable seeds sent on trial did not germinate, viz., the Orange Horn Carrot, the Brussells sprout, and Swede Turnip.

Report upon vegetable seeds, saved in India and presented to the Society by Dr. Wight.

Black seeded Bath Cos Lettuce.....	True to name.
Brown Cos do.	Do.
White curled Cabbage Lettuce.....	This sort is the true Neopolitan. The best in the garden this season.
Brown Cabbage Lettuce.....	True to name.
Drumhead do.	Do.
Early horn Carrot.....	Do.
Orange do.	*Did not germinate.*
Swede Turnip.....	*Do.*
Globe do.	True to name.

The following to be reported upon hereafter.

Parsnip, purple top beet.
Turnip rooted Beet, Dwarf Curled Savoys.
Large savoys, Brussels sprouts, "*Did not germinate.*"

(Signed) A. HENDERSON.

Ootacamund Nursery.—13. The position of the Garden seems to have been selected solely with reference to ornamental capability, and the Nurseries are at present widely dispersed, wherever small available spots can be found, and none are situated so that carts can be brought near for the removal of plants. There is in fact a deficiency of suitable ground for the purpose of a Nursery. The lower garden, where the ground is tolerably level, is within the influence of the frost, and the upper garden is difficult of access and deficient in soil, the latter is a serious inconvenience when the plants for sale are in baskets of earth.

14. It is difficult to suggest a remedy for this defect. If the Nursery were at a distance, it would be removed from supervision, and every site within the limits of the Garden is open to

the objections stated. If it were possible to purchase some adjoining ground, the difficulty might be obviated, and then the Nursery and its expences might be kept distinct from those of the Garden. This would be a good arrangement for Mr. McIvor, while the facilities for intending purchasers would be so much increased, that the expences attending the change would be speedily repaid. If this be feasible, it is probable, that such a stock might be kept up as would enable the Superintendent to supply plants to applicants engaged in laying out grounds at reduced prices in accordance with the system adopted in England, where large quantities of other than choice plants are sold at very reduced rates.

Kulhutty Nursery.—15. This Nursery situated half way down the Segoor Ghaut, lies convenient for purchasers in Mysore and Wynaad. There is a large stock of fruit trees and of seed vegetables. Two Gardeners only are employed and these are not sufficient to keep the Garden clean of weeds.

Coonoor Nursery.—16. The Subsidiary garden here has been considerably enlarged since my last inspection, (1857) and consists of five terraces in a sheltered situation with a south east aspect. The stock of fruit trees, Figs, Vines, Peaches, Apples and Oranges were looking well. I observed also Guinea Grass and Seed Balsams, and I have no doubt that there will be a considerable demand in the increasing stations of Coonoor and Jackatallah,* perhaps also at Kotagherry. Four Burgher gardeners are employed, whose wages with sundries amount to Rupees 25 per mensem. The original grant of Rupees 50 per mensem, sanctioned for a period of 2 years has lapsed. I beg to recommend that half that amount (or Rupees 25) per mensem may be continued for a further period of 2 years.

* *Where a European sanatarium is about to be established.*

17. When the Coonoor Nursery is in full vigour, and when the organization of the Garden lately established by the Commissioner of Mysore is complete, it may be desirable to dispose of the Kulhutty Nursery, and to establish in lieu of it a Subsidiary garden in the Wynaad for the diffusion of Cocoa and Spice plants, Cloves, Nutmeg and Vanilla.

Prices.—18. In regard to prices, there has been a good deal of comment. Many residents considering the charges still too high. It will be remembered that the rates were reduced 25 per cent. in accordance with the remarks of Government on my Report of last year. I am, moreover, in a position to state that when Mr. McIvor's stock has admitted of it, he has sold plants to purchasers *on a large scale* at a greatly reduced rate. There can be no doubt that with a steady and large demand such as Nursery men in Europe experience, the extent of business enables them to sell at very low rates; and the same result under similar circumstances might hereafter take place here.

19. There is more trouble involved in the sale of single plants than might at first sight appear, especially when it is remembered that in this country ready money-dealings are exceptional. I have directed Mr. McIvor's attention to the reduction of prices with a view to the accommodation of the public, and in accordance with the order† of Government, I have no doubt that in many instances considerable reductions may be made without loss. The amount of reduction may be intimated in a foot note to the next catalogue, and should depend upon the extent of the purchase.

† *E. M. of C. dated 9th May* 1856, *No.* 518, *Public Department.*

20. The amount of sales during the past year has exceeded my expectations, bearing in mind that it was a season of peculiar depression. Many houses came into the market, and few owners made any improvement in their properties. In order that Government may be able to judge of the number and amount of the purchases, I called for the information given in the margin.

Memo.— The number of purchasers from the Ootacamund garden from 1*st June* 1857, *to* 31*st May* 1858, *are as follows.*

Above	100	*Rupees*	4
,,	50	,,	3
,,	20	,,	9
,,	10	,,	82

21. I would gladly see private Gardeners undertake the work of propagating and retailing plants after their first introduction, as I do not consider their subsequent diffusion to belong properly to a Government Establishment. There are numerous market gardeners in and around Ootacamund, some of whom have been employed in the Government Garden, yet they do not seem to have found it to their advantage to establish nurseries.

Proposed Auction.—22. Mr. McIvor has been compelled to keep up a much larger stock of plants to meet casual demands than is needed for the requirements of the Garden, and he has personally proposed to me to dispose of the surplus stock by auction every year, which seems to be a good suggestion calculated to promote the diffusion of many useful trees and plants.

23. With reference to para. 62, Mr. McIvor appears to have underrated the results of the early efforts of residents on the Hills, who, as I am credibly informed, introduced many varieties of fruit and other trees under greater difficulties than are at present encountered. Steam communication and Wardian cases not having been then available. The correspondence between Mr. Sullivan and Dr. Wight, published in the Madras Agri Horticultural Society Proceedings relates to some of these first attempts at introduction on the Neilgherry Hills. Several varieties of Fruit trees are still found in the Billicul garden and elsewhere. In the older Gardens many specimens of well grown Coniferous trees (different species) are seen, particularly Kaity, Cluny, Kempstow, Dimhutty and several private individuals are now in the habit of getting large consignments of valuable plants from England and the Colonies.

Corrected with reference to Dr. Cleghorn's Memo. dated 24th Jan. 1859.

Accounts.—24. The accounts of the Gardens from January to December 1857, are under examination and an abstract of these will be forwarded hereafter in a separate communication. In accordance with the orders of Government Mr. McIvor has been instructed to transmit regularly to my office the monthly accounts after being examined and countersigned* by Dr. Mackay, Senior Medical Officer of the Neilgherries, instead of being laid before a committee as formerly. This practice commenced in January 1858. The average cost of monthly garden labor is Rupees 240-13-7, exclusive of the Superintendent's salary, Rupees 125.

* *Ex. Mins. of Cons. 7th Dec.* 1857, *No.* 1265, *Rev. Dept.*

25. It seems desirable to keep the expenditure of the ornamental Garden distinct from that of the propagating department, and the nurseries separate from the parent institution; to facilitate this, a writer should be employed to keep the accounts and copy the correspondence. This will enable the Superintendent, (without taking him away from his more immediate duties,) to keep detailed record of operations with diary of labour employed as is customary in public gardens.

26. For the sake of uniformity, I have drawn up two forms to be used in the three gardens, one of Cash Accounts, and the other of plant distribution, these are now filled up every month at Madras, Bangalore and Ootacamund, and at the close of the present official year a summary of the aggregate results shall be laid before Government.

Valuation of Gardens.—27. In para. 59 a valuation of the ground and buildings is given. I have always considered that this garden has been formed under difficulties, and at a small charge to the State. I cannot, however, venture to estimate its money value, nor does this seem necessary, for the successful working of a Public Garden is to be estimated rather by the introduction of new species, the diffusion of useful plants, and the out turn of skilled Gardeners, than by the sum it might fetch if sold by auction. Under these circumstances, I do not consider it necessary to comment upon the estimated cost and value.

Apprentices.—28. D. Hopkins completed his apprenticeship and obtained much practical information. At the close of his term, he accepted an appointment in the Telegraph Depart-

ment where the immediate prospects of advancement are greater than I have to offer. Mr. McIvor was thus left without an Assistant. Two youths have since been entertained, and it appears to me that two Apprentices may be received annually with advantage, and bound for a term of years, forming a complement of six to eight youths of European extraction in all. These lads ought to be taught punctuality and accuracy, and the first point is that they should labour with their own hands, use the spade, &c. If this system can be arranged, two trained lads would leave the Institution each year. It is not improbable that promising young men may hereafter be transferred from the Lawrence Asylum now established on the Neilgherries, and there can be no doubt that many openings for young men so instructed, will be found.

Death of Dr. Royle.—29. A heavy loss has been sustained by the death of Dr. Royle, who was much interested in Economic Botany, and forwarded annual consignments of useful plants from the India House to the Government gardens in India. I anticipate much aid from the cordial co-operation of Sir William Hooker, Director of the Royal gardens of Kew.

30. In addition to the donors mentioned by Mr. McIvor, I have to express special obligation to Dr. T. Thomson, the Superintendent of the Botanical Garden, Calcutta, who forwarded several valuable packets of seeds and four Wardian cases containing rare plants, many of which were collected by himself in the neighbourhood of Darjeeling, these were distributed to the Madras, Bangalore and Ootacamund Gardens.

31. In conclusion, I consider that two desiderata are the enlargement of the Nursery ground, and the appointment of a writer to keep the accounts. I think also that more might be done in training European Apprentices and Native Maistries as originally* contemplated. Indeed in the event of Mr. McIvor's absence, it is necessary that there should be a good foreman to divide the work and to receive orders. At present, there is no such Assistant. More of Mr. McIvor's attention might also be given to plants of Medical, Commercial and Economical value.

* *See Covenant.*

32. There are two matters requiring notice before I conclude. 1st, It is right that I acknowledge the very liberal grant from Government of 1,000 Rupees recently sanctioned† to enable Mr. McIvor to complete the Garden improvements which had lain over from want of funds, the application of this sum will be detailed in the next annual report. 2nd, the question of Mr. McIvor's salary. I urged‡ last year that his monthly allowance should be raised from 125 Rupees to 200 Rupees, in consideration of ten years' service and increased duties, Government thereupon were pleased to record the opinion that a salary of 250 Rupees should be applied for on certain§ conditions. As the preliminary operations for planting the immediate neighbourhood of Ootacamund have commenced, I would earnestly recommend that the increase be granted.

† *Ex. Mins. of Cons. dated* 10*th Augt.* 1858, *No.* 1109, *R. D.*

‡ *Memo. dated* 6*th August* 1857. *Letter dated* 10*th April* 1858, *No.* 323.

§ *Ex. Mins. of Cons.* 3*d June* 1858, *No.* 748, *R. D.*

33. With reference to the remark|| para. 15 of the order above referred to, after much deliberation, I beg to submit the following observation. Mr. McIvor resides in the Ootacamund garden and is in the habit of visiting once a week the subsidiary Nurseries at Kulhutty and Coonoor distant 8 and 12 miles respectively. On his way to the former, I consider that he can supervise the planting of the Jackatallah road, and in visiting the latter, he can superintend the renovation of the Sholas within five miles of Ootacamund and plant the 10,000 trees sanctioned, but any more extended range I feel that he cannot possibly undertake, consistently with the duties specified in his covenant, viz. "the careful management of the public garden and the directing and instructing all who may be placed under his control."

|| "*The Right Honorable the Governor in Council is of opinion that the Superintendent of the Government gardens at Ootacamund should have the general supervision of all woods and plantations on the Neilgherries.*"

He has also for some years paid a short annual visit to the Nellumboor Teak Plantations which I think it well that he should continue as being very important. With reference to these

several duties, in addition to the charge of the Ootacamund garden, for which alone he was originally engaged I proposed an increase of salary. My late observation and frequent communication with the Collector obliges me to state that the effectual conservancy and replanting of the woods on the Hills will require the whole time of an efficient officer. My report upon this matter will necessarily form the subject of a distinct communication.

REPORT ON THE GOVERNMENT BOTANICAL AND HORTICULTURAL GARDENS, OOTACAMUND, FOR 1857.

In submitting my annual report on the Government Gardens for the year 1857, it affords me much pleasure to be able to state that considerable progress has been made in every department of the Institution during the past year. At Ootacamund, an additional ornamental parterre has been added to the Garden, and the whole made as attractive as possible by means of choice varieties of flowers, trees, and shrubs. The roads leading to the gardens levelled and the bridges raised.

2. At Kulhutty, there has been a large increase of fruit trees, from which and the Gardens at Ootacamund, I have been enabled to stock the new Garden at Coonoor with a variety of fruit and other trees. Here a considerable portion of the ground is now under cultivation for the production of Vegetable seed.

3. On the whole, I consider the present report as most interesting, shewing the advantages of the Institution to the country by the introduction and dissemination of valuable timber and fruit trees, flowers and seeds.

4. With these preliminary remarks I proceed to the particulars of the report which I shall endeavour to exhibit under the following heads:

1 Progress and Improvement.
2 Present state of the Gardens.
3 Detail of Horticultural experiments.
4 Useful timber and fruit trees, flowers and shrubs recently introduced.
5 Financial Statement.
6 General and concluding remarks.

5. PROGRESS OF THE GARDENS AT OOTACAMUND.—Since my former report considerable improvements have been effected in this Garden and its approaches. The roads and bridges have been raised 3½ feet and made nearly level, an abrupt angle cut off and an easy curve substituted rendering it much easier of access than heretofore.

6. An ornamental piece of water has been formed at the north west angle being the extreme boundary of the Garden on that side numbered 1 in plan. A portion of the ground for this piece of water, being the property of E. B. Thomas, Esq., and Lieutenant Colonel Beaumont, has been kindly conceded by those gentlemen, who in addition have given 50 Rupees each, which sum with a donation of 50 Rupees from Dr. Cleghorn has covered about half the expenses of the work, as well as that of making a better approach to the properties of the two first named Gentlemen.

7. A wall, No. 2, has been erected from the entrance gate to the seed house, and enclosing the gardeners houses behind that building.

8. The required improvements in the lower garden as noted in my former reports are being actively proceeded with, and will I trust be completed in the course of another year. They comprise an entire remodelling of the ground, with a promenade from the entrance to the conservatory, the introduction of ornamental vases and the formation of flower beds.

9. The conservatory sanctioned by Government in 1856 is still unfinished, many delays having taken place, and only lately it was discovered that the work done was not in accordance with the plan; the building has in consequence been lowered 1 foot throughout; the centre not raised as suggested by me and approved of by Colonel Lawford. The consequence is the building is wanting in effect, and has the appearance of three propagating houses placed together rather than a conservatory.

10. The road, marked in the plan No. 3, on the South East side of the Garden is now under repair, and will shortly be completed. This road will be the drive for carriages and horses, putting down visitors near the centre of the Gardens, from which point the whole is easy of access on foot.

11. The improvements made in the upper part of the Gardens have been the forming of a new parterre, No. 15 in the plan, and planting the sloping banks to the North and West with choice and ornamental shrubs and trees forming a back ground, and thus separating the nurseries and vegetable Gardens from the pleasure grounds.

12. The nursery grounds have been considerably enlarged, and filled with an extensive collection of useful and ornamental plants, as shewn under the head of the present state of the Gardens and detailed in Catalogue.

13. In the garden at Kulhutty, the nursery grounds have also been extended, and my attention chiefly given to the propagation and growth of the following fruit trees, which now form perhaps the most extensive stock of these plants to be found at this time in India:—

Apples.	Raspberries.	Currants.
Pears.	Nectarines.	Strawberries.
Plums.	Apricots.	Pumplemose..
Peaches.	Vines.	Lemons.
Figs.	Loquats.	Citrons.
Almonds.	Oranges.	Pine Apples.
Mulberries.	Filberts.	

14. During the past year the new branch Garden at Coonoor for the production of seed has been formed, about 10 acres of forest cleared and trenched; one half formed into terraces and planted with Apples, Pears, Peaches, Oranges, Vines, Figs, Limes, Lemons, and Citrons in varieties, about four Acres being under crop with Vegetables for seeds.

II. PRESENT STATE OF THE GARDENS.

15. Having prepared a plan (which accompanies this report) of the ornamental portion of the Gardens at Ootacamund; this, together with the following description will, I trust, shew what has been done in laying out the ground, selecting and arranging the various species of trees, shrubs, and flowers, collected from every quarter of the globe.

16. On entering the Garden a main promenade, now in course of formation, No. 4 in plan, leads in a direct line to the Conservatory, on each side of this promenade, six ornamental vases are to be placed, alternated with flower beds, filled with florists' flowers, *viz.* Scarlet Geraniums, (2 varieties,) Verbenas, (8 varieties), Calceolarias, (16 varieties), Petunias, (6 varieties), Picotees, (6 varieties).

17. On the lawn (No. 5) to the South East of this promenade are planted clumps of Conifers, consisting of *Cedrus deodara, Cupressus sempervirens, Cashmeriana* and three species of *Thuja*, nearer to the border, clumps of the varieties of Himalayan Rhododendrons, *Veronica Lindleyana*, Weeping Willows and Australian Acacias. To the North West (lawn No. 6) are varieties of the Pine, amongst which will be found the Patagonian, stone, and long-leafed Pines with Cypresses of varieties planted in clumps, also single specimens of *Camellia*. The varieties used being *Chandlerii, imbricata, florida, Storerii* and *fimbriata*. Specimens of the English Oak are planted in the lawn north of the road numbered in plan 7.

18. Here also at No. 8, and near the edge of the ornamental piece of water, the border is formed of sheep's fescue grass; single plants of the Babylonian and Napoleon Weeping Willows being planted near the edge of the water. Towards the seed house, No. 9 in plan, is a shrubbery planted with Chinese Lilacs, Sweet Bay, Turkey Box, *Escallonia micrantha, Veronica Lindleyana* and various species of Cytisus and Roses; the beds in front of this shrubbery being filled with gay florists' flowers.

19. No. 10 is a pond bordered with German daisies, no description can convey an idea of the beauty of these daisies when used as a border for ponds. They continue in flower all the year notwithstanding the frost. On the right of the pond is a shrubbery of Australian Acacias, Cytisus, Laburnum, clumps of choice Roses and a few fine specimens of *Rhododendron arboreum*,

(indigenous) these latter being trees upwards of 30 feet high, and when in flower at the end and beginning of the year are truly magnificent.

20. On the lawn No. 11 to the North East of the pond are some rare Conifers, *Cupressus funebris, stricta, torulosa* and *Doniana, Cryptomeria Japonica, Salisburia adiantifolia* and *Taxus Hibernica.* The oval beds on this lawn shewn in the plan are filled with choice florists' flowers, the dwarf varieties being used towards the border while the higher growing plants occupy the beds in the centre. The figures to the East of these beds are also filled with dwarf florists' flowers, the whole being arranged with reference to colour and effect.

21. To the East of this stands an Octagonal bower, No. 12, covered with various varieties of honeysuckle. On the lawn, No. 13, are planted single specimens of *Araucaria imbricata* and *excelsa, Cunninghamia lanceolata, Cupressus funebris* and *Lawsoniana, Cedrus Deodara, Pinus Pinea, Robinia pseudoacacia, Casuarina equisetifolia* and *tenuissima,* with a few Cape Oaks. The pond, No. 14, is also bordered with varieties of German daisies. In this border are placed single plants of Weeping Willow, and the adjacent rock work planted with Cape bulbs, Oxalis, Verbenas, &c. The back ground being formed of Turkey Box, Berberries, Brooms and Cypresses.

22. On the South East a hedge of mixed China Roses separates the carriage drive from the Gardens. The lower Garden above described comprehends three main walks, three small do., 5 lawns with flower beds, a seed house and conservatory, four ornamental pieces of water, and contains an area of about 12 acres. The dotted line running South East and North West separates the lower Garden from what is named the upper Garden.

23. No. 15 in plan is the lower portion of the upper Garden andindicates the manner in which it is laid out. The flower beds in the foreground on lawns Nos. 15 and 16, are planted with perennials such as Campanulas, Statices, Cupheas, Perennial stocks, Dahlias, Roses, Hollyhocks, Verbenas, Petunias, &c. At the end of the propagating house, No. 17, is a fine specimen of *Acacia premorsa,* in the front are two large specimens of *Brugmansia suaveolens,* along the borders of the walks; on lawns No. 18 and 19 are planted single specimens of Roses, *Sutherlandia frutescens,* Pimelias and Veronicas.

24. The clump immediately in front of the propagating house is composed of *Acacia verticillata, Cupressus triquetra* and *Casuarina muricata.* The large lawn No. 20 is bordered in front with single specimens of Roses of the Chinese and Hybrid perpetual varieties, *Polygala myrtifolia* and *oppositifolia.* Along the centre of the lawn is a grass walk and avenue of *Cupressus torulosa.* On the right of the avenue are clumps different species of young Pines, Pomaderris, Bossias, Diosma, Westringia and Psoralea with a row of Australian trees, and to the left a clump of the same of extraordinary height (upwards of 50 feet) considering that they are only 8 years of age. To the left of this spot Himalayan trees are planted in clumps, lawn No. 21.

25. Numbers 22 to 28 comprehend that portion of the Gardens between the propagating house and the cottage of the Superintendent. No. 21 is the pond containing the water used for irrigation during the dry season. Immediately beyond this is the new Rosery on lawn No. 22, and at No. 23 the Turkish walk. On either side are borders of mixed flowers, and at regular intervals Turkish cypresses, and in clumps on the lawn Turkey Oak and Box.

26. Beyond this walk on the lawns Nos. 24 and 25 stand single plants of English Ash, *Acacia longifolia, dodonœifolia, stricta* and *lophanthus,* also specimens of *Cytisus racemosus, Clianthus puniceus, Cedrus Libani, Grevillea linearis,* 3 species of Westringia and the American Maple. Along the side of the walk are planted at regular intervals 8 species of Cape heath; near the angle of this walk is a large rock covered with *Kennedya rubicunda* and *coccinea,* with English Ivy, on the right of this are a few fine specimens of *Mahonia Leschenaultii* and *Cassia corymbosa.* Along the edge of this walk to the North of lawn No. 27 is a hedge of Fuchsias, and on the South Walk bounding the same lawn a hedge of Rose Gloire de Rosamere. Lawns Nos. 26 and 27 form the Cape and Australian Gardens being planted with Pulteneas, Hakeas, Isopogons, Leucospermums, Eucalyptus, Acacias, Psoraleas, Polygalas and Cape Heaths; towards the right of lawn 26 are 4 specimen plants, namely 2 of *Acacia verticellata* and 2 of *Cupressus Doniana.* These are the largest plants of these species in the Garden averaging 18 feet in height and 8 years of age. The beds here shewn in plan are occupied with Cape bulbs only. On lawn No. 28, clumps of *Acacia speciosa, Brugmansia suaveolens,* and *sanguinea,* Sollyas, Roses and Geraniums, and on the North, a border of perennial flowers. No. 29 is the Italian parterre with an Octagonal bower covered with Fuschias trained as climbers of the following varieties. Princeps, Beauty of Deal, Gem of the season, Splendidissima, Attraction and Equisetæ. In front of the bower are two Medici vases and garden seats. Advantage has been taken of the rock on the left of this for the growth of indigenous Orchids, Ferns, and Lycopodiums of the various species found at this elevation; beyond appears the winding walk which leads to the fountain.

27. On the lawn No. 30 to the South East of this portion of the garden are oblong flower beds for the growth of annuals for seeds, between the beds are ornamental trees and shrubs, among these may be named the *Erythrina crista galli* and *Caffra, Salisburia Adiantifolia, Cupressus torulosa* and *funebris, Acacia pulchella, Cytisus racemosus, Virgilia Capensis, Callistemon speciosum, Eucalyptus pendula* and *Edwardsia macrophylla,* on the edge of this walk on the west of this lawn is a fine hedge of *Fuchsia mi rophylla.*

28. Number 31 in plan is a natural forest of fine indigenous Rhododendrons, Holly, Michelia and Andromeda. In this forest, and under the shade of the above named trees, Fuchsias planted in clumps and beds have attained to such a size as to form shrubberies. Here, are also beds of dwarf Geraniums and Pelargoniums of the choicest varieties, their bright flowers contrasting admirably with the deep emerald green of the sward, which here consists of one species of grass only, *viz.* the *Agrostis stolonifera.* Advantage has been taken of portions of this ground to form terraces and flower beds; turf seats being placed around the roots of the Rhododendron trees and indigenous Orchids, Moss and Fern upon their stems. The species of Orchids here used being the *Ærides Lindleyana, Saccolabium rubrum* and *speciosum, Cœlogyne odorata, corrugata* and *Wightiana.* Through these trees have been opened vistas affording delightful views of the Gardens, the station of Ootacamund with the Koondah mountains in the distance. This place being sheltered from the sun has become an agreeable resort for pleasure parties. To the West of the terrace, No. 31, shewn in the plan pyramidal beds have been raised. The bottom covered with deep red Petunias. The centre with light coloured and the extremity with scarlet Alonsoas.

29. Near this spot a small stream passes through the Garden, this has been taken advantage of to form small Water falls. A fine specimen of Camellia (scarlet variety) may be seen on the sloping bank numbered 32. This was one of the first plants introduced, and is now seven years old. On this bank are also clumps of Fuchsias, Roses, Veronicas, Acacias, Magnolias and Berberis.

30. No. 33 is the Fountain and Garden around it. The beds are here filled with Geraniums, Hydrangeas, Verbenas, Heartsease, Crassulas, Begonias, Gesnerias, Mignonette, Achimenes, Aconitum, Cyclamen, Polyanthes, Primroses of European and Chinese varieties, Cinerarias, Calceolarias, Blue and scarlet Salvias, Statices, Picotees, Carnations and Hollyhocks. The borders around being planted with Roses, Fuchsias, Camellias, Rhododendrons, Osbeckias, Sonerillas, &c. On the banks as creepers are various species of Clematis, Kennedya, Sollya, Tropæolum, Lophospermum, Begonia, Mandeviliea, Dolichos, Tecoma and Brugmansia sanguinea; climbing over the rocks is English Ivy and around their base indigenous Lycopodiums, Ferns and the *Torenia asiatica,* or Sissipara creeper; along the borders of the streams have been planted, Musk, Daisies, Mimulus, and the Forget-me-not. The edgings of the walks to the centre and front of the fountain are of Box; and around the border Daisies. On the left of this border is a small rock work planted with English Heath, Oxalis, &c., and to the right, a similar rock work planted with varieties of Verbena and Cape Bulbs.

31. No. 34 is a portion of the Garden recently laid out. Here, the beds shewn in the centre are planted with Verbenas and bordered with Daisies, to the south is a pond with a small island in the centre and a plant of Weeping Willow; the banks on the East are covered with English Ivy, the borders to the East and West being planted with 100 varieties of Roses, these are backed with a shrubbery of Escallonias and China Lilacs. Here in the beds of mixed plants will be found Himalayan Osbeckias, indigenous Sonerilas, Fern and Lycopods, *Begonia fuschioides, maculata, nitida, reniformis, dichotoma* and *peltata,* with scarlet and fancy Geraniums.

32. The above description comprehends the whole of what is termed the ornamental portion of the Garden containing about 30 acres.

33. The Nursery Grounds at Ootacamund are principally occupied with young timber and ornamental trees and shrubs and perennial flowers. The number of species and varieties growing in this nursery at the present time being 451. Names and description being given in the Catalogue forwarded in the beginning of the year. The number of plants of each

species and variety vary exceedingly owing to recent introduction and demand, for instance Acacias, Willows, Cypresses, &c., being of early introduction and in great demand, the number of plants of these sorts average about 4,000 of each. While of others of late introduction and difficult of propagation such as Araucarias and Camellias do not exceed 15 or 20 plants of each variety. The number of perennial bedding and border plants, annually required for the ornament of the garden exceeds 30,000 and the rearing of these alone occupies much time and space.

34. At Kulhutty, the nursery grounds are devoted entirely to the growth of fruit trees. The number of species and varieties here propagated being 178. Of each variety now in this Garden the number of plants range from 10 to 300. These also are specified in Catalogue above referred to.

35. The nursery near Coonoor has also been stocked with fruit trees, but they are not sufficiently advanced to be offered for sale.

36. The following table exhibits the financial position of the Institution from the 1st January 1857 to the 31st December of the same year.

37. By this table it will be observed on comparison that the amount realized under the head of sales to the Public is considerably less than in 1856. The causes for this have doubtless been the reduction of prices, the late issuing of the Catalogues, and the general depressed state of the affairs of the country. The Catalogue of plants, seeds, &c., for sale in the gardens for 1858 was forwarded in the early part of January last to Dr. Cleghorn, in order that that Gentleman may fix the prices opposite to each species as directed in Minutes of Consultation noted in the margin.*

* Extract from the Minutes of Consultation No. 1264, dated 8th September 1857. "Dr. Cleghorn is of opinion that the prices named in the Catalogue are high and operate restrictively, and that a reduction of the rates would prove highly beneficial. He is accordingly authorized to make the experiment."

Table of Distribution of Plants, Seeds, &c., from the Horticultural Gardens for the year 1857.

To whom supplied.	Fruit trees and shrubs.	Timber trees.	Shrubs & flowers.	Bulbs.	Grasses (roots.)	Parcels & seeds.	Value. R.	A.	P.	Remarks.
Collector of Coimbatore		2,120	.....	.....	.....	.....	405	0	0	For public planting.
Bangalore Gardens.....	18	80	4	.....	.....	.....	29	8	0	In exchange.
Medical Board	.....	.....	.....	.....	.....	6	30	0	0	Digitalis leaves.
Messrs. J. Veitch and Son	.....	.....	780	.....	.....	.....	300	0	0	In exchange for plants from Europe.
Sales to the Public.....	416	1,836	2,824	401	13,080	205	2,161	6	5	
Total...	434	4,036	3,608	401	13,080	211	2,925	14	5	

38. The above table of distribution shews under all heads nearly an equal number of plants and seeds to have been distributed in this year as in 1856, proving that the reduction of prices has materially affected the income of the Gardens, and it is the opinion of the Superintendent that in his anxiety to meet the wishes of the Government and the public, the prices in the lists of 1857 were placed too low. Other grounds upon which this conviction is based are described at length in the general and concluding remarks.

39. DETAIL OF THE VARIOUS HORTICULTURAL EXPERIMENTS MADE AND PLANTS INTRODUCED.—The experiments on the production of European vegetable seeds has been prosecuted during the past year with all the means available, and promises to prove successful. The seeds distributed being upwards of 200 parcels. The accounts received of these from various parts of the country are very encouraging.†

† Extract of a letter from Captain A. A. Bayley, dated Bombay 6th May.

"Will you kindly pack carefully and send as soon as possible seeds as per annexed list. They are required for the soldiers' garden at Ahmednugger, which owes its thriving state almost entirely to the excellent seeds you have always supplied to it. The last batch you will be glad to hear succeeded to the full, as well as those heretofore sent, and both officers and men prefer them infinitely to all other kinds."

40. A packet of European vegetable seeds, the produce of the Neilgheries, was forwarded to Dr. Wight, who very kindly submitted them to Dr. Lindley, the Superintendent of the Gardens of the London Horticultural Society to be tested.

"1. I Have been unable to answer sooner your enquiries respecting McIvor's seeds owing to the sudden death of the man who had charge of them * * *

I however find that none of the seeds grew with the exception of a few Lettuce seed, from which half a dozen lettuce plants have been reared As I see that Major Bennett's also failed in the Punjaub it looks as if they had not been sufficiently ripened or dried; perhaps the latter.

2. The Lettuces are very small but they seem to be true to their kind and I see no reason to doubt their having been as good in quality as European seeds.

3. It will however be found in India as in Europe that no single garden will provide many kinds of seed of good quality. Onion should be raised in one place. Turnip, radishes, in another; long radishes in a third, the places being selected so as to suit the constitution of each kind. e. g. Onions in hot dry districts, Lettuces in an English or Paris climate, and so on."

This remark of Professor Lindley is worthy of attention. H. C.

41. The report in the margin from that Gentleman being incomplete for the reasons therein specified, a fresh packet of seeds of this year's growth will be forwarded in order that thay may be fairly tried and again reported upon. The remark in para. 3 though perfectly correct when applied to Europe does not attain to such a degree in this country and climate. In Europe the whole seed harvest comes in about one time, and the danger to the varieties especially to the Cruciferœ from inoculation is much greater than in this country. Here, crops for the production of Vegetable seed can be so planted as to flower at any period of the year, so that one crop can come into flower immediately that the other has gone out; thus avoiding deterioration by Hybridising.

42. The Cruciferæ or Cabbage tribe being most subject to deterioration from the effects of crossing. The custom here has been to plant one variety so that it may come into flower three months after the other, or when the seeds of the first are beginning to ripen, therefore with our three gardens at different elevations, and the means which the climate thus gives us of alternating the seasons of flowering and perfecting the seeds, comparatively a great many varieties can be produced, and these quite true to their kind.

43. *Fruit trees.*—It was remarked in my previous reports, that the introduction of the best varieties of plums and peaches had proved a failure, inasmuch as these could not be induced to produce fruit, I have now much pleasure in being able to state that these are now more promising, some of the varieties having produced fruit such as the Barrington and the late admirable Peaches; the Golden Drop and the Greengage plum; this has been effected by placing the plants in partially shaded and damp situations, being quite the reverse of the site usually chosen for these trees in Europe.

44. All the English varieties of Apple and most of the Pears have succeeded well, fruiting abundantly at the age of 5 or 6 years from the time of grafting; Vines of the best varieties also thrive well. The same may be said of Oranges, Limes, Lemons, Citrons, Figs, Pineapples and Strawberries.

45. Of ornamental plants, the Camellia has been found to grow luxuriantly and flowers abundantly.

46. This plant being a general favourite will soon become common, and add much to the beauty of the gardens here.

47. The Australian Acacias consisting of 3 or 4 species take so well to the climate, that they are used in plantations for shelter and ornament, in preference to the indigenous trees. Roses also thrive remarkably well, and such varieties as grow from cuttings, have been propagated to such an extent as to be planted for hedges. The varieties most commonly used for this purpose are the Chinese and Dog roses. In the Ootacamund Gardens however there are hedges formed of the finest varieties; for instance Rose la Reine, Coup de Hebe and Gloire de Rosamere. The beauty of these when thus used and properly kept can scarcely be imagined.

48. Of florists flowers, Dahlias, Verbenas, Geraniums, Petunias, Fuchsias, and Cape bulbs; grow very luxuriantly and are extensively used in ornamenting the Gardens. The finest varieties of these plants are annually introduced from England and various fine seedlings raised here.

49. The use of mixed grasses for lawns has been found in this garden owing to the luxuriance of vegetation during certain seasons to be unseemly, and almost unmanageable, in consequence their use has been abandoned, and the whole of the lawns in the upper part of the Garden formed of one species of grass only, *viz.*, the *Agrostis stolonifera*, while some of the lawns in the lower part of the garden are formed of sheeps fescue grass *(Festuca ovina,)* and others of *Festuca tenuifolia.* The growth of these grasses being uniform, the lawns are much easier kept in order. I may here observe that for experiment, I introduced all the best English varieties of pasture grasses, and some are now largely and profitably cultivated on the Hills.

50. The plants commonly used for borders consist of Daisies, Indian pinks, Sweet William, Thrift and Box.

51. *Medicinal plants.*—The production of Foxglove as before noticed in previous reports has succeeded perfectly, the medical stores being annually supplied from these gardens. The peppermint continues to grow very well, as also the Medicinal Rhubarb and Jalap. The Ipecacuan has grown well this season and formed several large roots, which will allow of its being increased.

52. *Plants introduced.*—The only species of medicinal plants introduced during the past season is the Leontodon Taraxacum; seeds were kindly forwarded to me by Dr. Cleghorn, and from them about 800 plants have been raised. There is no doubt that this drug will shortly be produced in sufficient quantities for the supply of the Medical Department.

53. Four species of fruit trees have been added to our stock this season, the Gardens already containing nearly all those known to be of value.

54. Of timber trees, 8 species have been introduced from the Himalayas, and 2 from America. Of ornamental plants, a great many new species and varieties have been received. Among these are 13 varieties of the best sorts of Camellia, 1 of Hydrangea, 6 of Rhododendron, 2 of Azalea, 2 of Osbeckia, 6 of Geranium, 2 of Ribes, 6 of Fuchsia, 100 of Rose, 6 of Crassula, 2 of Statice, 2 of Begonia, 3 of Tropæolum, 8 of Verbena, 3 of Hypericum, and numerous varieties of Dahlia, Heartsease, &c. Of Agricultural plants, all the best varieties of European grains and grasses.

General and concluding remarks.

55. In September last, this Establishment with its branch Gardens and Nurseries was (vide Minutes of Consultation, No. 1264 of 8th September 1857) placed unreservedly under the control of the Conservator of Forests. On the occasion of this change of management, I am naturally anxious to bring to the notice of Government the result of my unwearied endeavours to accomplish successfully the important objects entrusted to my care, and the difficulties encountered in bringing this Institution to its present most gratifying position.

56. In 1848, the year of my assuming charge of the Gardens, the upper portion was a forest, with heavy trees on its steep and rugged banks, the lower part a swamp, the whole being traversed by deep ravines. To fill up these an immense quantity of earth was required. The funds of the garden not admitting of its removal by manual labor, advantage was taken of the rainy season to force the soil by flushes of water into these ravines from cuttings and levellings, the earth thus carried with the water being deposited in the places required, behind screens of wicker work, formed of brushwood and rubbish, and thus was accomplished at a trifling cost and in a most efficient manner a work, which if executed in the usual way, would have exhausted the resources of the Institution; the four bunds across the ravine to retain water and forming the ponds being also made as above described.

57. The Parterres, No. 3, 24, 29 & 33, shew portions of this ravine filled up as above described. The steep and rugged banks have also been transformed into easy walks, terraces, lawns and flower beds are now planted with a choice and rare selection of plants, illustrating the Vegetable productions of a large portion of the world, and not only has this been successfully accomplished, but also the erection of the garden buildings and stocking of the nurseries both here and at Kulhutty at the small cost to Government of 100 Rs., or £ 10 per mensem, extending over a period of nearly 10 years, I have therefore no hesitation in stating that probably not in any country, certainly not in India, has such a small expenditure of public money produced such results.

58. In order that every opportunity should be turned to the advantage of the Institution by means of my professional connections I have been enabled to introduce the whole stock of fruit trees and shrubs now in the nurseries without expense to the Garden.

59. My endeavour has been during the period the Institution has been entirely under my control, *viz.* 4 years and 7 months, to obtain the greatest result from the smallest possible expenditure, and the following table will prove how far this object has been attained.

Dr. *Ootacamund Gardens in account with the Madras Government.* *Cr.*

	Rs.	A.	P.		Rs.
To purchase of land for a portion of the lower garden.....	266	12	7	Estimated value of stock in Nursery grounds at Ooty.....	8,000
Government allowance for, from 20th 1848 to 31st December 1857 at 100 Rs. per mensem...	11,433	5	4	Do. do. in Kulhutty nurseries.	6,000
Government allowance for Coonoor Gardens from 20th June 1856 to 31st December 1857 at 50 Rs...	916	2	...	Do. do. in Coonoor nurseries..	700
To repair of Superintendent's House.....	570	...	...	Value of seed house and buildings attached.....	2,000
				Value of propagating House.....	1,000
				Superintendent's House,.....	3,000
				Value of Ootacamund Gardens, grounds and plants.....	25,000
				Coonoor garden grounds.....	500
Rupees.....	13,186	3	11	Value of seeds in store.....	1,200
Profit.....	35,213	12	1		
Rupees.....	48,400	...	...	Rupees.....	48,400

60. It may be supposed that the sums here entered as value of Stock will be long before it is realized. However this may be, there can exist no doubt that were the stock, grounds, and buildings sold by public auction they would realize more than three times the sum expended by Government on them.

61. Not only have I had to create the Gardens with the limited means above stated, but even these small means have on various occasions been seriously misapplied, for example, during the first three years of the Garden's existence the whole of its resources together with my labor was directed by the Committee to the production of vegetables for the gratuitous supply of subscribers.

62. The Conservator of Forests having stated it as his opinion, that the continuance of the present prices will cause a partial failure in the objects of the Institution, and induce residents to procure plants and seeds from England instead of availing themselves of the local Institution, and fearing the general opinion that Government Institutions should supply their produce gratis,* or at a very low rate, may prevail, I am desirous of placing on record my views on this subject. With regard to individuals procuring plants from England, I may observe, if such a thing were practicable, how is it that it has not been done long before, when certainly greater inducements existed than at present. Our prices in the 1st instance (in 1853) being three times what they are now, and yet no plants were introduced. I am aware that before the commencement of this establishment persevering efforts were made to introduce plants from England. The late Mr. Casamajor and General Kennett being noted for their interest in the welfare and prosperity of these Mountains, spent large sums in their endeavours to introduce European fruits, and their united efforts, extending over a period of 15 years, has been to secure to the country two varieties of apple only. With these exceptions they invariably arrived in a dead or dying state. The prices of our Lists of 1857 were on an average fully 100 per cent. less than the prices charged in Europe for recently introduced plants of the same description.

* *The order of Government was clear on this point.* "The seeds should be sold at the cheapest possible rate that will repay the cost of production." Ex. M. of C. 9th May 1856. No. 518, para. 4.—H. C.

63. There exists less difficulty with regard to seeds which may be received from Home in a good condition, though this is not always the case. The prices charged in Europe is 2*s.* 6*d.* for many of the packets of seeds we are now selling for 2 Annas or 3d. It does not therefore appear that even seeds will ever be extensively imported.

64. I am convinced that to charge fair prices, that is, a price giving a reasonable profit on the cost of production should be invariably adopted, as experience has taught me that this is as essential to the well being of a Government Garden as it is necessary to ensure success and prosperity in private ones. Persons who purchase plants at a fair price establish by the very act of doing so that they value and consequently take care of them. Moreover, it also induces purchasers to propagate and increase the plants themselves, and this in fact has been done to a large extent with the introductions of these gardens. When profit is to be had on the propagation and sale of plants, it naturally induces private individuals to establish nurseries, securing the propagation and distribution of plants by private means and individual exertion to an extent which could not otherwise be accomplished, thus relieving a Government Institution from an immense deal of retail work which cannot be sufficiently attended to where the main object is the introduction of new species.

65. The paramount object of every Government Garden being the introduction of useful and ornamental plants, and as this continues annually nearly in the same ratio as new plants are discovered or originated, and supposing this not to be neglected, for a public garden constantly to propagate and keep on hands a nursery stock of all the plants introduced year after year, must in course of time become impossible, so that many of the plants introduced will ultimately be lost either from want of attention or space, unless the earlier introduction of such Establishments are taken up and propagated by private nursery men.

66. If Horticulture in India is ever to rise above its present low condition, it must principally be accomplished by private nurseries and private exertions, and all that can be done ought to be done to encourage such establishments. When public Institutions charge for its produce cost prices only, it is a direct prohibition to the establishment of private nurseries, a contrary course is an encouragement. To illustrate this I may mention that during the 4½ years the Gardens have been under my management, and remunerating prices fixed on its produce two private nursery Gardens have sprung up at this station.

67. Low prices are injurious inasmuch as people do not value that which they get for little or nothing, and to this may be attributed the little care bestowed on plants so procured in this country.

68. For the first three years of these Gardens' existence, plants, seeds and flowers were given gratis. Parties availing themselves of this privilege removed from the Gardens many valuable plants and frequently failed to put them into the ground, or if planted, so little care was given them that they frequently died, I readily recognize the correctness of making large reductions to parties forming extensive plantations of such plants as cannot be procured elsewhere.

69. In concluding this subject, I would earnestly bring to notice of Government and fo. their consideration that the system of charging a fair price has been practised here for the last 4 years, and whether viewed with reference to the benefit to the public or the Institution, has been very successful, and I trust these facts will be taken into consideration before an opposite course is adopted.

Extract from Dr. CLEGHORN'S Memorandum on the Government Gardens of Ootacamund.

"With reference to the restrictions considered necessary by the Committee and Mr. McIvor, I think the following rules which have been found to answer well in the Calcutta and other Government Gardens will be suitable: 1st, to keep on the Walks, especially near the Walks and flower beds; 2nd, not to break flowers, leaves or branches or cut names or the like on trees; 3rd, not to disturb the Gardeners; 4th, not to offer them money or presents of any sort; 5th, no shooting allowed, Horses and Dogs are also prohibited; 6th, the hours of admittance are from 6 A. M. to 6. P. M.

There is an outside road belonging to the Garden by which Visitors may ride to the higher part but the admission of horses and conveyances within the gate seems objectionable, and does not obtain in other Institutions, the road above mentioned would give Visitors a complete command of the whole garden and many of the Invalids could walk down through any part of the grounds, to whom the ascen would be difficult."

70. Since the date of my last report, rules as per margin have been furnished by Government for the protection of the Gardens.

71. In concluding this report, I beg to tender my thanks to the President of the Garden Committee, E. B. Thomas Esq., for the generous confidence he has reposed in me and for his ready co-operation and support. To Dr. Cleghorn, for some valuable packets of seed and the warm interest he has evinced in the welfare of these Gardens. To the late Dr. Royle of the India House, to Mr. Veitch of Exeter, and Dr. Jamieson of the Saharunpore Gardens for many valuable plants and seeds.

Government Gardens,
Ootacamund,
May 31st 1858.

Signed) W. G. McIVOR,
Superintendent.

72. Since concluding this report, I have received intimation that a 2d portion of the seeds sent from the Institution to the London Horticultural Gardens, referred to in para. 40 of this report, have been sown a second time and grown freely. The following is an Extract from the *Gardener's Chronicle and Agricultural Gazette* of the 3d July 1858, on this subject. "That seeds continually refuse to grow is notorious; but it is equally certain that many persons calling themselves Gardeners have no idea how seeds should be raised, accustomed to "putting into the ground" Pears and Beans, and Radish and Mustard and Cress, they fancy themselves acquainted with seed sowing in general, and when they fail the blame is laid not upon their ignorance but upon the seedsman who supplies their masters. Undoubtedly the complaint that Lettuce seed and Onion seed will not grow should very often be "that a man does not know how to sow Lettuce seed and Onion seed." An example or two about which there can be no mistake will explain our meaning. Two years ago some seeds sent from India to a great garden near London, where any degree of skill ought to have been found, were partly sown and reported on as "bad, will not grow." This year what remained of the original seed although so much older was again sowed and it grew freely, why was this? the explanation is simple, the Gardener had been changed."

(True Copy.)
(Signed) H. CLEGHORN,
Supt. Govt. Botanical Gardens.

No. 64. ORDER THEREON, No. 323; dated 15th March 1859.

This letter contains a review by the Conservator of Forests of the Report of the Superintendent of the Government garden at Ootacamund.* Mr. McIvor's Report forms the enclosure of Dr. Cleghorn's letter, and a Map of the garden is submitted, shewing the improvements which have been effected. The Government proceed to remark on the points requiring orders or notice.

* *Note.—Placed under the Conservator by para. 8 of Ex. Mins. Cons. 8th Sept. 1857, P. D.*

2. The Conservatory was ordered to be proceeded with on 8th December 1857, too late of course for the completion of the work by the end of the year. It is presumed that the building has long since been completed. Adverting to the fact that nearly a year had elapsed since the expiration of the period to which this report relates when the review of it reached Government, it is hoped that more punctuality will be observed in future. It appears that Mr. McIvor's memorandum, in itself late, lay more than five months in the Conservator's office.

3. The suggestion that the sketch plan of the garden should be lithographed with descriptive letter press, is approved. Dr. Cleghorn will make the requisite arrangements with the Central Office of Public Works, (whither a copy of this order will be sent), stating how many copies he wishes struck off. The formation of a classified Catalogue, to be bound with the plan of the garden, is likewise approved.

4. The Medicinal products have not been apparently much utilized, except the Digitalis. A report of what is available should be made to the Medical authorities. The suggestion that the "Cinchona Calisaya" should be obtained from Java, is approved. The Government will await Dr. Cleghorn's suggestions as to the manner of obtaining it.

5. With reference to the alleged deficiency of suitable land for nursery purposes at Ootacamund, it is not expressly stated that the purchase of adjacent ground on a proper level is impossible though it is apparently implied. This matter should be enquired into by Dr. Cleghorn, who can lay his recommendations before Government (after communication with the Collector) in his report for 1858, now due. It is very desirable that an ample stock of young plants should be kept, and made accessible to the public. Application will be made to the Government of India for the grant of half the sum formerly* sanctioned (50 Rupees a month for two years) or twenty five Rupees a month for two years more as re-recommended by Dr. Cleghorn. It is hoped that at the end of this period the gardens will be entirely self supporting in this respect.

* *From Government of India No. 757, dated 20th January* 1856.

Vide from Professor of Botany dated 28th March 1856, *para.* 4.

6. The proposal to abolish eventually the nursery at Kalahatti is approved. But the Governor in Council is of opinion that branch nurseries in well chosen localities will be of use in affording the garden the advantage of a variety of climates.

Paras. 18, 21, 22.

7. Government concur with Dr. Cleghorn in the advisability of reducing the prices of plants, &c., supplied at wholesale rates, and likewise approve his proposal to hold an annual auction to dispose of surplus stock.

Para. 24 as amended by Dr. Cleghorn's official Memo. dated 24th January 1859.

8. The accounts will be laid before Government hereafter. The delay in submitting the report has already been noticed. The Governor in Council cannot but remark with disapproval that even up to the present time the accounts have not been received. As soon as ready they should be transmitted to the Board of Revenue for examination and submission to Government agreeably to Extract Minutes of Consultation of 3rd February, No. 143.

9. With reference to the observations in para. 31, the Government are prepared to attend to any suggestion which Dr. Cleghorn may offer.

10. In para. 15 of Extract Minutes Consultation 3rd June 1858, the Government expressed themselves prepared to urge upon the Government of India the propriety of recommending the Home Authorities to increase Mr. McIvor's salary to Rupees 250 as soon as the supervision of the Government Plantations on the Neilgherries should be added to his other duties. Dr. Cleghorn now recommends that the increase in question should now be granted, on the ground that "operations for planting the immediate vicinity of Ootacamund have commenced." It is observed however that at the close of para. 33 of his report, Dr. Cleghorn expresses the opinion that the effectual conservancy of the woods, &c., on the hills will require the whole time of an efficient officer. This appears incompatible with their being united with the immediate charge of the garden, and Dr. Cleghorn will be pleased to explain his views more particularly.

11. Meanwhile, the Government have just received a Despatch from the Secretary of State for India wherein sanction is granted for the increase of Mr. McIvor's salary to Rupees 200 a month. This increase will take effect from the date of this order. The Governor in Council has much pleasure in giving effect to this order of the Home Authorities, being of opinion that Mr. McIvor has fully earned this augmentation of salary by his zealous and intelligent discharge of his duties; and he desires to express his sense of the great improvement which Mr. McIvor's care and skill and judgment have effected in the garden.

No. 3 of 1859, *Public Despatch dated 12th January, para.* 25.

12. The Government recognize the propriety of allowing the Superintendent of the garden the aid of a writer to keep his accounts and copy his letters, &c., as proposed in para. 25 of the Conservator's letter. They will be prepared to consider favourably a more definite application from Dr. Cleghorn for that object. The duties of the writer will not be heavy or of great importance, and a very moderate salary will be sufficient for him.

13. Ordered that 300 copies of the Conservator's Report and of its enclosure, be printed as before, with the foregoing remarks appended, and that the usual number be forwarded to the Right Honorable the Secretary of State for India.

(Signed) J. D. BOURDILLON,
Secretary to Government.

March 29 1834

My dear Norman

The "Gowlees"
I presume are a nomadian savage race devoted
to breeding cattle principally Buffaloes. of a
very inferior descrip-
tion, inhabiting the
villages on the crest of
the Ghauts in the Extreme
North of Canara. & the
neighbouring part of
Dharwar — inhabiting

at least so far as they
can be said to have
any fixed habitation –
for they roam about
in search of pasturage
and are not difficult
to please with a locality.
They used to range far
& wide through all the
Forests. & did infinite
damage to the timber.
The cattle eat down
all saplings. & it is a
common thing
for the herdsmen to
fell a full grown

10x

fine timber tree merely
to obtain the young shoots
at the extremity for
their cattle.
To preserve the
timber they were at
last limited to the
tract marked in
the map. Where there
is not much timber
valuable or otherwise
I think. as they object
altogether to regulations
& I suppose this – or
some attempt on their

15th March 1859
No 323

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Official Memorandum No 523.

Requested that the first sentence of para 24 headed "Accounts" of the letter of the Conservator of Forests No 488 dated 13th November 1858 reporting on the Government Gardens Ootacamund be altered as follows.

"The accounts of the Gardens "from January to December 1857 "are under examination, and an "abstract of these will be forwarded "hereafter in a separate com= "munication. In accordance with "the orders of Government," &c.

Madras, 24th Jany 1859.

H. Cleghorn M.D.
Conservator of Forests

To, The Secretary to Government.

15th March 1859
No 323

From Supt. Govt. Botanical Garden, of 13th Nov./58. C. No. 1805 Cons.

Revenue 1859 Deptt.
15th March

No. 146.

Official Memo:

From the Conservater of Forests.

Dated 24th } January 1859.
Recd. 28th }

R. 1805/58

Proposing certain alterations in certain Para of his letter No. 488 dated 13th November 1858 reporting on the Govt. Gardens Ootacamund.

No 63-64

Recd. 28th 5. 1859

No. 323

Extract from the Minutes of Consultation
Under date the 15th March 1859.

Read the following letter from the Conservator of Forests and Superintendent of Govt. Botanical Gardens.

(Here enter 13th Nov./58
No. 488)

This letter contains a review by the Conservator of Forests of the report of the Superintendent of the Government Gardens at Ootacamund.× Mr. McIvor's report forms the enclosure of Dr. Cleghorn's letter and

× Note. Placed under the Conservator by Para 8 of Ex. Mins: Cons: 8 Septr. 1857 C.D.

and a Map of the Garden is submitted, shewing the improvements which have been effected. The Government proceed to remark on the points requiring orders or notice.

2. The Conservatory was ordered to be proceeded with on 8th December 1857: too late of course for the completion of the work by the end of the year. It is presumed that the building has long since been completed. Adverting to the fact that nearly a year had elapsed since the expiration of the period to which this report relates

relates when the report of it reached Government, it is hoped that more punctuality will be observed in future. It appears that Mr. McIvor's memorandum, recently late, lay more than five months in the Conservator's office.

3 The suggestion that the sketch plan of the Garden should be lithographed with descriptive letter press, is approved. Dr. Bleshorn will make the requisite arrangements with the Central Office of Public Works, (whither a copy of this order will

will be sent / stating how many copies he wishes struck off. The formation of a classified Catalogue, to be bound with the plans of the garden, is likewise approved.

4 The Medicinal products have not been apparently much utilized, except the Digitalis. A report of what is available should be made to the Medical authorities. The suggestion that the "Cinchona Calisaya" should be obtained from Java is approved. The Government will await Dr. Cleghorn's suggestion.

&c &c

Bolaram

as to the manner of obtaining it.

5 With reference to the alleged deficiency of suitable land for nursery purposes at Bolaram, it is not expressly stated that the purchase of adjacent ground on a proper level is impossible though it is apparently implied. This matter should be enquired into by Dr. Cleghorn, who can lay his recommendations before Government (after communication with the Collector) in his report for 1858, now due. It is very desirable that an ample stock of young plants should be kept, and made accessible to the public. Application will be made to the Government of India for the grant of half the sum formerly sanctioned (60 Rupees a month for two years)

From Govt of India No 757 of 20th June 56.

years) or twenty five Rupees
a month for two years more
as recommended by Dr
Cleghorn. It is hoped that
at the end of this period
the gardens will be entirely
self supporting in this
respect.

Vide para Professor of Botany
of 28th March 66 para 4.

6 The proposal to abolish
eventually the nursery at
Kalahatti is approved. But
the Govern in Council
is of opinion ~~this~~ that branch
nurseries in each chosen
localities will be of ~~much~~
use in affording the Garden
the advantage of a variety
of climates.

P. 18, 21, 22

7 Government concur
with Dr Cleghorn in the
advisability of reducing the
prices of plants, &c. sup-
plied at wholesale rates,
and likewise approve his
proposal to hold an an-
nual auction to dispose
of surplus stock.

The

Para 24 as amended by Dr
Cleghorn's Offg Memo of 27th
June 1859.

Comms

8 The accounts will be
laid before Government
hereafter. The delay on
submitting the Report has
already been noticed. The
Governor in Council cannot
but remark with disapprob-
-ation that even up to the pres-
-ent time the accounts
have not been received.
As soon as ready they
should be transmitted to
the Board of Revenue for ex-
-amination and submission
to Government agreeably
to Extract Minutes of Con-
-sultation of 3d February
No 113.

9 With reference to the
observations in Para 31 the
Government are prepared
to attend to any suggestion
which Dr Cleghorn may
offer.

10 In Para 15 of Gt Minc. Cons
3d June 1858 the Government
expressed themselves prepared
to urge upon the Government
of

of India the propriety of recommending the Home authorities to increase Mr. McIvor's salary to Rupees 250 as soon as the superviision of the Government Plantations on the Neilgherries should be added to his other duties. Dr. Cleghorn now recommends that the increase in question should now be granted, on the ground that "operations for planting the immediate vicinity of Ootacamund have commenced". It is observed however that at the close of Para 33 of his Report, Dr Cleghorn expresses the opinion that the effectual conservancy of the woods &c. on the Hills will require the whole time of an efficient Officer. This appears incompatible with their being united with the immediate charge of the garden, and

Dr.

No 3 of 1859 Public Despatch dated 12th Jany. Para 25

Dr. Cleghorn will be pleased to explain his views more particularly.

11 Meanwhile the Government have just received a despatch from the Secretary of state for India wherein sanction is granted for the increase of Mr. McIvor's salary to Rupees 200 a month.

12 This increase will take effect from the date of this order. The Governor in Council has much pleasure in giving effect to this order of the Home authorities, being of opinion that Mr. McIvor has fully earned this augmentation of salary by his zealous and intelligent discharge of his duties; and he desires to express his sense of the great improvement which Mr. McIvor's care and skill and judgement have effected in the garden.

The

12 The Government recognize the propriety of allowing the Superintendent of the garden the aid of a writer to keep his accounts and copy his letters &c., as proposed in ¶ 25 of the Conservator's letter. They will be prepared to consider favourably a more definite application from Dr. Cleghorn for that object. The duties of the writer will not be heavy or of great importance, and a very moderate salary will be sufficient for him.

13 Ordered that 200 Copies of the Conservator's report and of its enclosure, be printed as before, with the foregoing remarks appended, and that the usual number be forwarded to the Right Honorable the Secretary of State for India.

M.U.
Feb 26.

J.D.H.

4 Copies to the Conservator of Forests with Plan.
Desp. 16.
10 — Chief Engr. ✓
3 — Supt. of Govt.
for infmn & for Comn to the Collr of Coimbatore ✓
2 — Dr. Genl. Med. Dep. ✓
1 — Acctt. Genl. ✓
1 — Civil Auditor ✓

R 10 August/58 No 61-62
— 8th June — — 19 a 21
— 18th Septem/57 — 56-57
— 8 Decem — — 51-52
Pub. Cons: 13th May/56 — 32 a 35

Copy in a letter Regd
21 May 1860 No 50

~~1884~~
1824/12

118/684
385/12

Revenue 1859 Departt
Cons: 15th March

No 323.

Extract Mins of Cons:
Dd 15th March/59

From the Conservator of Forest Dd/31st
March/59 C. No 558 Cons:

From B of Revd 29 April
C. No 761 29 March/60

From Conservr of Forest Dd/31 Decmr/57
C. 121 - in Cons 20th May/60 No 59 a 60
(Reporting on the Govert Gardens at Ootacamund)

Passing orders on the
Annual Report of Mr
Mc Ivor Superintendent
of the Government Garden at
Ootacamund for the year
1857.

No 63 & 64.

C. 26th Feby R 5th August