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Revenue Department

Minutes of Consultation

for June 1828

Back No. 19–21

Order No. 748 dated 3rd June 1828

47 pages

பாதுகாப்பு பிரிவு-1

செப்பனிடுபவர் பெயர்: 8108

செப்பனிடுவதற்காக எடுத்துக்-
கொள்ளப்பட்ட நாள்: 9/08

31/10/08

சரிபார்க்கும்	சரிபார்க்கும்	ஆராய்ச்சி
முதல் நிபாள	2ம் நிபாள	உதவியாளர்
கையொப்பம்	கையொப்பம்	கையொப்பம்

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Fort Saint George, Revenue Consultation of 8th June 1858.

No. 19. Read the following Papers.

Letter from H. CLEGHORN, Esq., M. D. Conservator of Forests: to the Secretary to Government, Revenue Department, Fort St. George; dated Bangalore 10th April 1858, No. 323.

SIR,

Having had occasion to visit the Neilgherry Hills on duty in May and September of last year, I took the opportunity of examining the experimental Plantations of Australian and Himalayan Trees near Jackatallah, under the management of Captain Campbell, and having inspected them carefully on both occasions, I beg to submit the following Report in accordance with instructions contained in Extract Minutes of Consultation dated 26th June last, No. 655.

Hon'ble. J. Sullivan...Agri. Hort. Socy. Proceedings.
Capt. Allardyce., *Dr. Wight.*, *Capt. Ouchterlony.* } *Madras Journal of Science.*
E. B. Thomas Esq., *Capt. Campbell.*, *Mr. McIvor.* } *Official Reports.*

Much has been written on the subject of planting the Neilgherry Hills, chiefly by the Gentlemen named in the margin, who have successively recommended the establishment of tree plantations. It is scarcely necessary for me to dwell upon the advantages to be derived from promoting this desirable measure, but the utility of so doing may be briefly stated thus.

1st. Plantations create, improve the soil and secure the permanency of the springs.
2nd. Do. shelter from the violent winds and modify the climate.
3rd. Furnish material for Housebuilding, Furniture, &c.
4th. Furnish fuel, fencing materials, &c.
5th. For purposes of Ornament.

Much has been done by private individuals near their dwelling houses, through the instrumentality of the well furnished Arboretum existing at the Government Gardens, but the experiment recommended in the first instance and superintended in its progress by Captain Campbell, is the only attempt of forest planting in the Neilgherry Hills on a considerable scale on the part of Government.

Having in my first visit been pleased with the general arrangements and the healthy appearance of the young trees, I requested Captain Campbell to favor me with a summary of the progress of his operations specifying

1st. The Establishment employed.
2nd. The method of procedure and number of trees planted.
3rd. The sum of money received and expended.
4th. The prospects of the plantations and his own wishes in regard to its future management.

The annexed Memorandum dated 10th August 1857, furnishes these details.

"Memorandum of the present condition and prospects of the new forest of Konagatty near Jackatallah on the Neilgherries commenced in March 1856 under sanction of Minutes of Consultation No. 129 of 7th February 1856.

1*st. Site and Physical features.*—The valley of elevation selected for experiment partly on account of its vicinity to works under my charge, extends in an easterly direction from the saddle of Billy Kumby (where the public road from Coonoor to Kotagherry distant 3½ miles from Jackatallah bounds it for a few yards) till it joins the great "Kotasholay" from which the Public Works, have during the last five years drawn sum (15,000) Fifteen thousand tons of wood. The valley which attains a mean elevation of 6,400 (six thousand four hundred) feet is well sheltered from the dry cutting northerly winds, and the sweeping easterly blasts by high ranges of Hills, and is intersected by a small stream of water which reveals a variety of soils from rich black mould, to a thin red oxide of Iron, mixed with siliceous masses resembling Laterite, all reposing on a stiff Felspathic clay, in which very faint traces of Lime may occasionally be detected.

2d. Establishment.—No regular Establishment has been kept up, working parties European or Native, chiefly the latter, as they could be spared from other duties, have received orders direct from myself, the funds at my disposal not admitting the entertainment of a qualified Overseer. During the last six months, however, I have derived much assistance from Corporal Hall* H. M's. 84th Foot (whose services have been partially available). He has some acquaintance with Forestry, and is a steady zealous workman in whom I place confidence.

* *Placed under orders of Conservator of Forests M. of C. 6th January* 1858, *No.* 13, *R. D.*

3rd. Number of trees planted and method of Procedure.—At intervals of 4 feet on four Acres of grass land (14,400) fourteen thousand four hundred Acacias (Robusta) were planted out this year, the ground being previously well trenched at a cost of 90 (ninety) Rupees (the ordinary English rate it may be remarked) per acre. Three thousand three hundred running yards of ditch 4 feet deep and 7 feet wide at top have been dug, and some twelve hundred yards of paling put up. The trees are planted in long lines of mathematical accuracy, so that not one can be cut without immediate detection. No manure has been used, close planting and trenching (of which I generally disapprove) have produced vigorous plants from seedlings purposely raised on the most exposed situations, now averaging three feet in height and one inch round the collar. In the Khotasholay success has been attended on easier terms, we have there (36,000) thirty-six thousand hardwoods comprising, *Halay, Kaingu, Buckanie, Halloonee, Narchippi, Nakaloo,* and other varieties *pitted* on 11 (eleven) acres of clearing bared by the wood cutting parties (yet in both instances the young trees are of their age, the largest and healthiest I remember to have seen (even in America) unstimulated by manure, which I have always found produces soft heart and sometimes premature decay.

4th. Money received and expended.—Of the (7,500) seven thousand five hundred Rupees placed by Government at my unreserved disposal, I have spent Rupees (5,640-10-10) five thousand six hundred and forty, annas ten and pice ten, as follows.

	Rs.	A.	P.
On trenching 6 acres at 90 Rupees, ...	540	0	0
,, 3,300 yards ditching, fencing and on water courses, ...	618	5	0
,, 15,000 Seedlings at 7 per 100, ...	1,050	0	0
,, Seeds and nursery beds, ...	371	8	6
,, Baskets, ...	212	1	11
,, Purchase of land, ...	700	0	0
,, Forester's house, ...	100	0	0
,, Rifle, for shooting wild animals, ...	80	0	0
,, Ventilating paths, ...	8	2	0
,, 36,000 Hardwoods including the necessary watering, nurseries and fencing, ...	1,780	9	5
	5,460	10	10
Leaving unexpended balance, ...	2,029	5	2
Total...	7,500	0	0

5th. Prospects and proposed management.—The prospects of the plantation are such that if owing to the present financial pressure, Government should not feel disposed to make me any further grant of money before May 1858, I can easily manage to carry on fencing, pitting, nursery beds, &c., on a reduced but still safe and efficient scale for the next 9 months, when I expect to have one lac of young trees ready to set out, by that time funds will probably be available, and assuredly they will be required.

2. I must say I was desirous of withholding any report at all at this infant stage of proceedings, for though I clearly see my pledge of 14th November in current course of redemption, others may not so clearly apprehend the value of my nurseries which now make but little shew to an unpractised eye; but even now though confessedly desirous of avoiding criticism for some months to come, the success of the experimental forest is no longer a matter of speculation, but a pleasant fact to repose on, of which I have the pleasure to cite Dr. Cleghorn as an eye witness.

JACKATALLAH,
10th August 1857.

(Signed) JOHN CAMPBELL, Captain,
7th Light Cavalry.

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Remarks on the foregoing Memorandum.

Site.—The Plantation is situated, as Captain Campbell observes, at Conagutty 3½ miles from Jackatallah, close to the public road from Coonoor to Kotagherry and near the site selected by Mr. Rohde for the proposed European Jail. The valley is sheltered from the prevailing winds, is watered by a stream and is altogether a *well chosen* spot. The soil is generally good and the slopes enjoy a variety of aspects well suited for experimental planting.

Price of land.—The purchase money 700 Rupees was paid to the Burgher villagers after negotiating with the Collector of the District, the entire extent is 600 acres.

Area planted.—The area planted when I visited the hills was about six acres in extent, fenced in with wooden paling and protected by a young hedge of *Coes alpinice sepiaria*, the Mysore thorn. This was much required, the wild animals being very destructive. Since I was there, the plantation has been extended and may perhaps now cover eight acres.

System pursued nursery.—The seeds are sown in four feet beds, and in dry weather watered once in 3 or 4 days from a small water course led in for the purpose. Long rows of the *Acacia Robusta* were just coming above ground, 4 rows in each 4 feet bed, so that the rows were 1 foot apart. This tree is considered to be most eligible for the rapid production of firewood. The quick succession of suckers which it throws up had led to its being banished from the Horticultural Garden, but this renders it extremely valuable to the Forester with a view to future timber for fuel. Several suckers are thrown out from each tree which form much wood if all have room to grow.

In addition to these nursery beds, there were some thousands of seedlings in baskets arranged systematically around in the shade of a long pandal.

In the nursery beds, Captain Campbell stated, that he computed that the total number of seedlings in May next would be 1,00,000.

I saw also a large number of young Deodars sown on 17th May coming up well. There were also many young *Kalungoo*, an indigenous Cedrelaceous tree, timber excellent, prized by the Burghers. There were other indigenous trees in small number, compared to that of the Acacia, which forms the bulk of the plantation.

Planting out.—The ground in which the young seedlings were afterwards planted is pasture land, and has originally been covered with coarse grass and tangled bracken *(Gleichmia Hermanni.)* There is no scarcity of such land on the Neilgherries. At first Captain Campbell trenched 14 inches deep, and put in 11,000 young Acacias, 4 feet apart. Of these, a large proportion were looking remarkably well, but after carefully counting up the gaps, I calculated that 1,000 had died. It is but just to remark that Overseer Hall has been much absent, and is in no way to blame for these failures, which is not indeed more than might be expected. In the course of the experiment Captain Campbell has ascertained that the expense of trenching is unnecessary, he therefore discontinued the operation. He now finds it advisable to make holes 1 foot square by contract, and has engaged with a gang of Burghers at the rate of 150 holes per Rupee, that is to say, 24 holes are made by each cooly per diem.

The distance between the holes has been gradually increased from 3 to 6 feet, but varies according to situation. The arrangement is every where *quincunx*, and where other trees are mixed with the Acacia the plan of alternating hard and soft wood as shewn in the diagram is proposed to be adopted.

The yellow flowering Acacia thrives in every soil *(A lophantha,)* and answers well as a nurse to guard slow growing wood. Captain Campbell reports that the number of holes made ready in anticipation of the next rains will be equal to the number of young plants, viz. 1,00,000.

It may not be out of place here to draw attention to an error in management which causes serious mischief to many thriving young plants both in public and private experiments. I mean want of care in attending to the tender tap root in the transplanting of seedlings. I observed some delicate dwarfish plants in the Australian plantation surrounded by vigorous young trees and pulled up the nearest to ascertain the cause, which became at once apparent. The cooly employed in transplanting had pressed down the tap root so as to produce the contorted appearance seen in the annexed sketch C., the double twist had interfered with the circulation of the sap, and the plant drooped in consequence.



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Although this particular Acacia, whose root is figured was taken up in Konagutty, the same disregard to the requirements of the tap root may be seen in many of the coffee gardens of the most experienced planters, to the great injury of the plants and consequently of the future crop of coffee.

To prevent the occurrence of this mischief, Captain Campbell places trees intended for transplantation in wicker baskets, supplied in great numbers by contract; through the sides of these, the roots readily penetrate, and when the time for transplanting has arrived the half decayed baskets are lifted up and potted in the holes which have been prepared. This measure seems to answer very well.

It is proper that I should also mention that in working the great *Kota Shola* for the requirements of the barracks, Captain Campbell has shewn much attention to conservancy and economical management. He has planted out the cleared portions with many thousands of young trees, ascertained from the Burghers to be the better kinds of jungle wood.* He has judiciously pruned the stumps, made ventilating paths through the more densely wooded portions, and has shewn his desire to regulate the expenditure and to avoid the risk of a prospective deficiency of supply. Hitherto, it too often happened, when a glade has been doomed to the axe, it has speedily disappeared probably for ever, but in this case, when the calls for fuel have been emergent, there has been simultaneously an organized system to promote reproduction to the fullest extent. A broad outer fringe has been left to protect from high winds and to keep out herds of cattle, and the timber has been removed by well laid out cross roads, fenced throughout, a most necessary measure, as the depredations of cattle and wild animals of various kinds, are very injurious to the welfare of any young plantation. The roads are sufficiently broad to allow of two carts to pass one another easily, when laden with wood. In several rocky turns of the road a few Himalayan Deodars and other trees have been planted out in an ornamental manner. Private Tart 74th Highlandars was in charge of these portions when I visited the Neilgherries; he had not the same amount of professional knowledge as Corporal Hall, but is an active and trustworthy young man.

In reference to the future management of this growing plantation, I would venture to submit that, as the experiment has hitherto been successful, the trees being in a healthy growing ctate, although there are not yet certain evidences on which to found calculation of the ultimate produce and value of the trees, a further sanction of 2,500 Rupees should be given, and that Captain Campbell who has shewn himself an intelligent Forester, and who has continually watched from the beginning, be requested to continue to supervise the progress of the young plantation. Government will observe that Captain Campbell has drawn no remuneration for his services which were voluntarily offered.

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* NOTE.—*Of these my draughtsman delineated species of the genera* Cleyera, Gordonia, Ibex, *&c., being all that were then in flower.*

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II.

Experimental planting of Mr. Thomas in the vicinity of Ootacamund.

No. 989, 26th Sept. 1857, Rev. Dept.

In Extract Minutes of Consultation No. and date as per margin, a sum of 2,500 Rupees was placed at the disposal of the Collector Mr. Thomas, for planting trees in and about Ootacamund.

* *Dated 13th July* 1857.

Mr. Thomas states* that he has planted about 8000 Australian trees of different species (at a cost of 400 Rupees) and resown the old denuded forests to a certain extent. To prevent the destruction of the young trees by cattle, he finds it best to employ a watcher on 4 or 5 Rupees a month, as a ditch or fence to be really effective and to protect a plantation of several acres would entail large expenditure, and would be unsuited to his operations. So far as I could judge in my visit to the Neilgherries, the watchman was inefficient, and many young trees had been eaten down by hares or broken by cattle and deer roaming about. A hut is an essential addition and Mr. McIvor considers that wire fencing is absolutely required.

Mr. Thomas' labours have not been confined to a single locality but though apparently desultory in character, when compared with Captain Campbell's plantations, they have been in their way highly useful. He has earnestly and unceasingly exercised a personal supervision of the woods round Ootacamund when he visited the Neilgherries, and has manifested a warm interest in the progress of this department as evinced by the establishment of his private garden at Burlicar, which has been productive of much good in disseminating fruit and other trees. I do not hesitate to affirm with truth that, but for his continual exertions, the neighbourhood of Ootacamund would have been denuded of its remaining beautiful sholas long since.

III.

General views regarding the preservation of the Neilgherry Forests.

For the maintenance of the Neilgherry Sholas it is hopeless to expect conservancy by rules altogether prohibitory. Much timber runs to waste, and this when decayed and fallen is now sold, and the wood cutter's axe is necessarily in demand for its removal.

The greater part of the wood brought into Ootacamund is fetched by Burghers, and is cut within 2 to 7 miles of the limits of the Cantonment. The right to remove *dead* trees necessarily induces an interest in destroying them.

The present establishment consisting of a forester and 6 Peons for the Conservancy of the Neilgherry Sholas seems susceptible of improvement. One or more foresters are required, but the Peons unless instructed and carefully selected men are comparatively useless. They have no authority but assume much (I speak from presumption).

The duty of Forester may be easily performed by one man, provided the rules are such as to limit the authorized operations of the wood-cutters to certain localities, as has been the custom, but a better course appears to be to portion out the Sholas. To conserve only a certain number (of the finest growing trees) to the acre, or by estimate to the Shola, to limit the period of cutting to say one year in ten for each Shola, and to plant the year afterwards young quick growing trees in and around each Shola (a single man might do this).

The Forester would by personal inspection ascertain that no cutting was going on out of the authorized limits. All power to cut dead wood would be withheld, and the Sholas would be let under proper restrictions which the Forester would see enforced. Previous to the letting of the Sholas all reserved timber should be marked.

It might be a good plan in the first instance to try the experiment of a man marking or scotching all the decayed moss-covered trees in a Shola, and then selling them by auction; this would get rid of much old and useless wood, and give room for the young saplings to grow; this arrangement might supply all timber needed for 7 years. Then the woods might be worked, as in England, with a reserve of 10 large or 40 smaller trees per acre with the fringe outside, which is of great importance. Certain Sholas being set apart for each year and no axe on any pretence allowed in the rest. One English Forester on 35 Rupees and two planters on 6 Rupees each ought to be more efficient than a Forester, who has peons to depend upon, but who in fact do nothing.

	Rs.	A.	P.
* *Fusly* 1262	312	4	8
,, 1263	306	2	8
,, 1264	57	12	0
,, 1265	386	12	9
,, 1266	304	12	0
	1,367	12	1

The range of the year's operations must be contracted to enable any Establishment to work efficiently. The accompanying Statement of the receipts for five years received from the Collector shews a total amount of

	Rs.	A.	P.
*Receipts ...	1,367	12	1
Expenditure for 5 years...	2,100	0	0
Total in excess Rupees...	732	4	1

Consumption of Fuel.—The question of firewood is a difficult one in various parts of the country, and in none more than at Ootacamund. Every European house has *several* fires and every native house has at least *one* fire, these constantly burning must soon exhaust the fine woods of the Hills. The annual influx of Residents, Tradesmen and Coffee planters and the increasing demand for firewood has produced a remarkable and prejudicial effect on the indigenous woods of the Neilgherries.

Peat Bogs.—Black turf might be much more extensively used as a substitute for wood than it is at present. I have examined the Tullicherry Bog which is regularly and systematically worked by Captain Campbell. This turf is a most excellent fuel, and I advocate its use for the soldiery as well as in private houses. With a little admixture of wood it answers every purpose. It seems to be most desirable to encourage the consumption of this material. I am aware that Captains Francis and Campbell have used it successfully for Brick and Lime burning, and I would respectfully urge that its employment (in lieu of wood) should be pushed to the utmost extent in the Department Public Works. The price per ton is little less than that of wood. The chief impediment to the working of the Bogs on the Western part of the hills is, I believe, the small number of sunny days to dry the turfs thoroughly, but this does not apply to the Eastward, and the objection to the use of Peat which I have heard, viz., that the dust created is injurious to furniture, has been exaggerated.

Several Europeans work the Peat bogs, which are not burdened with any tax, but the profits being smaller than those obtainable in other vocations, the trade is not briskly followed up.

Suggested improvements.—Here I may allude to the importance of planting near the Military Cantonment of Jackatalla, at present unprotected from the prevailing strong winds, which blow over the bare hills without any screen.

I have solicited the opinion of three medical officers stationed on the hills as to the prospective value of planting generally. This measure might be gradually accomplished at little expense as there will always be amongst the Soldiers several gardeners so that tree planting may be well and economically carried out. The concurrent testimony of the three medical officers will be found in Appendix A. The thriving young plantations around the residences of Brigadier MacDuff, Doctor MacBeth and Captain Campbell shew what may ultimately be effected in that locality.

The new road from Jackatalla to Ootacamund is almost without a tree during its entire length (12 miles). Much of the Ghaut is scarped out of rock, and the slope at many points is too bare and precipitous for planting, but in the angles and sheltered corners clumps of trees might be advantageously laid down which would in some measure diminish the force of the wind. Again, on the road from Avalanche to Sissipara, there is a long stretch of bleak and treeless country, in which every year a number of Malabar coolies perish benumbed with cold (additional rest houses have been ordered for their protection). It has occurred to me that perhaps a belt of the *Australian Acacias* might be useful in sheltering the traveller, the seed might be sown in quantity and run in with the plough, and in this way a tolerable barrier might be raised against the wind, which for great part of the year blows fresh, and sometimes so strong that men can hardly stand.

Ornamental planting.—Ornament may seem to be a secondary condition, still it would not be altogether out of place in the vicinity of Ootacamund, where with a little attention in planting and laying out the ground, great effect might be produced with little trouble, and with a fair prospect of ultimate profit. Much might be done in this way, where the advantages of climate are so great and a Government Arboretum already exists.

Taking this view, I consulted Mr. McIvor and visited with him several localities in the immediate vicinity which seemed to be particularly eligible for ornamental planting. I also called upon him for an estimate of the expense of planting 10,000 trees which I beg to annex

(Appendix B.) for the favorable consideration of Government. I consider Mr. McIvor's estimate is most ample containing the highest cost that can be found necessary for making an Australian plantation.

	Rs.	A.	P.
*Cost of wire fencing.....	1,000	0	0
*Freight and carriage to Ootacamund.....	350	0	0
	1,350	0	0

It will be observed that a very large portion of the expense is for fencing; the wire fencing is most serviceable, and would no doubt come into use again either for an extention of the experiment or at the garden. In case, however, that Government be not able to sanction this outlay,* I hope that they may allow the experiment to be carried on without it. I will strictly enjoin careful vigilence and strict economy so that there shall be no needless expenditure.

I formerly ventured to suggest (Memorandum 6th August 1857) that Mr. McIvor having now served the Government for ten years without any increase of salary, might reasonably be allowed an increase so as to raise his allowances from 125 to 200 Rupees per mensem *on the express condition that he devotes his whole time unreservedly to Government service.* I would respectfully renew this suggestion. In addition to his regular garden duties Mr. McIvor may be required to conduct the experimental planting of 10,000 trees in accordance with his estimate and to supervise the renovation of Sholas within 5 miles of Ootacamund.

APPENDIX. A.

From Assistant Surgeon J. MAITLAND, Medical Officer, Coonoor; to H. CLEGHORN, Esq., M. D. Conservator of Forests; dated Coonoor 16th November 1857, No. 100.

SIR,

No. 185.

Asking opinion on the subject of tree planting on the Neilgherry Hills, with reference to health, price of firewood, &c.

I have the honor to acknowledge the receipt of your letter of 7th Instant, as noted in the margin, and, as requested, proceed to give you my opinion on the points referred to.

The subject I consider to be one of great importance both in a sanitory and economic point of view.

1st. With reference to its bearing on health. Let us take for example Jackatalla. That station may, with the exception of one or two compounds, be said to be entirely destitute of trees. Now having had frequent opportunities of observation during the last three years, I have become strongly impressed with the opinion that the larger proportion of disease especially of serious bowel complaints, at Jackatalla, than at the neighbouring station of Coonoor, is due in a great measure to this circumstance, viz. the want of wood; as in all other respects, as height, temperature, exposure, &c., there is scarcely any appreciable difference between the two places. I think therefore that by planting trees judiciously, great benefit would be derived, not only from the shelter they would afford, but from the good effects produced by a moderate quantity of vegetation in purifying the atmosphere.

These remarks would of course apply with equal force to every inhabited portion of the hills, where there is a scarcity of wood. I think moreover that by carrying out the project still further, and planting largely on the vast uncultivated tracts, which exist all over the Neilgherries, the climate might in time become so far modified that the extremes of temperature would not be so excessive, or the variations so sudden, thereby rendering the hills much more suitable as a sanitarium for invalids.

2d. Considering the question as it affects the supply of wood for domestic purposes.

There is no doubt that, if the demand for firewood, and small timber for building native houses, continues, even at the present rate, and without making any allowance for the greatly increased consumption to be expected by any addition to the troops stationed on the Neilgherries, or to the population generally, the supply must soon become exhausted, especially as there is an immense amount of waste yearly, from the reckless destruction of wood by the hill tribes in their periodical burnings of the dry grass. To provide for this immense, and steadily increasing consumption of wood there is no resource, but to plant trees to a large extent on the hills, as the difficulty and expense of procuring wood from the low country put that source of supply entirely out of the question.

From Assistant Surgeon G. MACKAY, M. D., Medical Officer, Neilgherries; to H. CLEGHORN, Esq., M. D. Conservator of Forests; dated Ootacamund 28th October 1857.

SIR,

The subject of planting on the Neilgherry Hills is one of the most paramount importance; and has, I am aware, already in some degree, engaged your attention.

2. In the Stations of Ootacamund, Coonoor and Kotagherry improvements in that way must, I presume, be chiefly carried out by private individuals, land owners and tenants; but with reference to the Cantonment of Jackatalla it seems to me a matter worthy of your best consideration. By judicious planting I feel sure that the health and comfort of the troops stationed there would be greatly benefited, while the appearance of the Station would be vastly improved.

3. Belts of trees planted along some parts of the Ghauts and roads leading from the low country, would be a very great protection particularly to the natives bringing provisions, &c., to the Hills, many of whom at present perish on the journey, and others come into hospital here in a hopeless state, from the effects of exposure.

4. In a climate where the temperature is so variable, and moisture so prevalent as on the Neilgherry Hills, an abundant supply of firewood or other fuel becomes an absolute necessity for the preservation of health among all classes, both Europeans and Natives.

5. I need hardly remark that the providing of fuel is a matter, the consideration of which, cannot be left till the urgent demand arises, but should be anticipated by every possible means. When the barracks at Jackatalla are fully occupied by European troops, and the European population on the Hills generally increases, which there seems every prospect of, the demand for fuel will be proportionably increased; and I can fancy no greater hardship that could arise, or anything more likely seriously to affect the health of all classes than a scarcity of so necessary an article as good fuel.

6. It is not my province to point out how such a contingency can best be guarded against, nor am I sufficiently acquainted with the Regulations now enforced regarding the cutting of wood and peat, to be able to offer many suggestions; but, viewing the subject as one seriously affecting the comfort and health of the community, I have ventured, at your request, thus to express my opinion.

From Assistant Surgeon W. AITKEN, M. D., Medical Officer, Neilgherries; to H. CLEGHORN, Esq., M. D. Conservator of Forests; dated Ootacamund 24th December 1857.

SIR,

In reply to your letter, No. 187, dated the 8th Ultimo, requesting my opinion regarding the probable effects of the formation of tree plantations on the health of settlers, residents and troops that may be located on the Hills, I have the honor to offer the following observations.

I infer from your letter that their formation on a large scale is contemplated; and I think that the likelihood of their proving detrimental or not will depend greatly on the manner in which this is carried out.

* * * *

At the same time, much may be done by planting judiciously within moderate limits, not only to meet any prospective increase in the demand for firewood, but also to produce timber fit for various useful purposes.

Indeed, I am disposed to think that some measures for the extension of the cultivation of trees are urgently called for, as well as for the preservation of those portions of the natural forests which still remain; as it appears doubtful if the latter will long be able to afford a supply sufficient for even the present demand for firewood, except at the expense of their indiscriminate destruction in the vicinity of the Stations; an event which might easily be obviated by the adoption of suitable precautions. The means which I should suggest as most likely to meet all the requirements in the least objectionable manner, is the planting in all directions of open clusters of trees, which would interfere little if at all with cultivation around and beneath them, and also of comparatively open rows on ground unsuited to other kinds of cultivation.

(True Copies.)

(Signed) H. CLEGHORN,
Conservator of Forests.

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APPENDIX B.

Estimate for planting 10,000 Australian trees on the neighbourhood of Ootacamund on the Neilgherry Hills.

Dr.	Rs.	A	P	*Cr.*	Rs.	A	P
Cost of Nursery of 10,000 plants and carriage to planting ground.	250	...	...	Value of timber at the end of 10 years say each tree contains 8 Cubic feet of Heartwood for building purposes at 8 Annas per Cubic foot	40,000	...	...
Cost of making 10,000 holes at from 5 to 8 holes each man per diem	300	...	...				
Preparing 10,000 holes and planting do.	150	...	...	Value of Loppings for firewood say each tree contains 4 bandy loads at 4 Annas per load	10,000	...	...
Superintendence for the 1st year.	1,200	...	...				
Clearing weeds from around the trees for the first three years	150	...	...				
Compound interest on Rupees 2,050 at 6 per cent. for 10 years.	1,303	12	10				
2,000 yards of strong wire fencing 5 feet high at 1 per running yard or sufficient to enclose 33½ Cawnies	1,000	...	...				
Freight and Carriage to Ootacamund	350	...	...				
Cost of felling and preparing the trees for market at the end of 10 years at 8 Annas each	5,000	...	...				
Net Profit	40,296	3	2				
Rupees	50,000	...	...	Rupees	50,000	...	...

GOVERNMENT GARDENS,
Ootacamund,
7th August 1857.

(Signed) W. G. McIVOR,
Superintendent.

(True Copy.)

(Signed) H. CLEGHORN,
Conservator of Forests.

Tabular Statement of increase of salary solicited on behalf of Mr. W. G. McIvor, Superintendent Government Botanical Garden at Ootacamund.

Year.	Charges. Ordinary.	Charges. Extraordinary.	Total.	Proposition. Nature of charge.	Permanent. Increase per month.	Permanent. Decrease per month.	Temporary. Increase per month.	Temporary. Decrease per month.	Period.	Casual or Extraordinary.	Grounds of proposition.	Local Government's Recommendation.	Orders of the Govt. of India. Home Dept. Remarks.	Orders of the Govt. of India. Financial Dept. Remarks.	Orders.
				Present scale. Rs. A P	Rs. A P	Rs. A P	Rs. A P	Rs. A P	Rs. A P	Casual.					
				Proposed scale. Rs. A P	Rs. A P	Rs. A P	Rs. A P	Rs. A P	Rs. A P	Casual or Extraordinary.					
				125	75						Mr. McIvor has served Government for nearly 10 years without any increase with zeal and attention. Vide Memo. on the Horticultural Gardens at Ootacamund dated 6th August and recorded in Mins. of Cons. 8th September 1857, No. 1264.				
				200											

(Signed) H. CLEGHORN,
Conservator of Forests.

No.	Date.	Extract from Home Department of Government of India.	Office to which the proposition refers.
			Government Botanical Garden Ootacamund.

No. 20,

Official Memorandum from H. F. C. CLEGHORN, Esq., Conservator of Forests; to the Secretary to the Government of Fort St. George; dated Mysore 16th April 1858, No. 329.

With reference to letter dated 10th, Current No. 323, the Conservator of Forests has the honor to forward a plan just received from Captain Campbell shewing his method of planting out the old Forest (Kota Shola) with young trees.

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No. 21, ORDER THEREON, No. 748; dated 3rd June 1858.

1. On 28th August 1855, Government referred to the Collector of Coimbatore for report through the Board of Revenue, a proposition from Captain Campbell, then Assistant Executive Engineer on the Neilgherries, to raise a forest of Australian trees on those hills. Mr. Thomas replied on the 24th of November of the same year, and Government sanctioned an outlay of Rupees (10,000) ten thousand for an experimental plantation as recommended by the Board of Revenue in their Proceedings dated 15th December 1855, No. 3328. The sum was to be divided between the Collector and Captain Campbell, who were required to submit periodical reports of the progress of the experiments. The first of these reports reached Government with the Proceedings of the Board of Revenue dated 9th June 1857, No. 1951, but it was brief, and no orders were passed upon it. The Forest Conservancy Department having in the meantime been organized, Dr. Cleghorn was requested fully to investigate the matter, and report upon it to Government. The Conservator of Forests now replies to this order in his letter recorded at the head of these proceedings.

Ex. M. C. 7th Feb. 1856, *para.* 5 *No.* 129, *R. D.*

Ex. M. C. No. 655 dated 26th June 1857, *R. D.*

2. After enumerating the advantages which ensue generally from planting, and observing that Captain Campbell's attempt is the only instance on the Neilgherry Hills of forest planting on a considerable scale on the part of Government, Dr. Cleghorn proceeds to remark upon a Memorandum on the subject by Captain Campbell, which he submits with his report, in which the site and altitude of the plantation, the establishment, and mode of working, are described, the receipts and disbursements are shewn up to August 1857, and suggestions are offered for conducting operations in future.

3. The plantation is situated near the site selected by Mr. Rohde for the proposed European Jail, and is 3½ miles from Jackatalla, and Dr. Cleghorn considers the spot well chosen. The extent of land which it is intended eventually to plant is 600 acres, and it was purchased from the Burghers for 700 Rupees, having, before it was cleared, been covered with coarse grass and "tangled bracken." The area planted, when the Conservator of Forests was on the hills, was six acres hedged and fenced, and this has since been extended to eight acres. The seeds are sown in four feet beds, and in dry weather are watered from a stream; long rows of the "Acacia Robusta" were just coming above ground at the time of Dr. Cleghorn's visit, and it is calculated that there will be 100,000 seedlings in May 1858, exclusive of a large number in baskets. Some young Deodars were thriving, and some indigenous cedrelaceous trees called Kalungoo. The Acacias however form the bulk of the plantation.

4. Dr. Cleghorn then describes the manner of planting out; for which operation 100,000 holes have been prepared in anticipation of the next rains, and he shews how, from careless planting, the roots of trees are often injured, and the trees themselves stunted in their growth.

5. In working the great Kota Shola for the requirements of the barracks, Captain Campbell has planted the cleared portions with many thousands of young trees of sorts most esteemed by the Burghers, and organized a system calculated to promote reproduction to its fullest extent. Dr. Cleghorn recommends a further sanction of 2,500 Rupees, and that Captain Campbell, who has shewn himself to be an intelligent forester, and who has continually watched this forest from the beginning, be requested to continue the supervision of its progress. The Government will request the Chief Engineer to convey to Captain Campbell their thanks for his successful and very useful services, and to inform that officer that they consider the progress which has been made towards producing a supply of timber, and wood for fuel to be very satisfactory indeed. The disbursement of the sum of Rupees (2,500) two thousand five hundred is sanctioned.

6. For the new plantation Captain Campbell has had no regular establishment, and the funds at his disposal have not admitted of the entertainment of a qualified Overseer; of the 7,500 Rupees placed at the Executive Engineer's disposal in the first instance Rupees 5,460-10-10 have been expended, leaving a balance of Rupees 2,029-5-2 unexpended.

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7. Dr. Cleghorn next notices the efforts made by Mr. E. B. Thomas, Collector of Coimbatore, to promote the growth of timber in and about Ootacamund. That officer has planted

about 8,000 Australian trees of different species at a cost of 400 Rupees; and the old denuded forests have been resown to a certain extent. A watchman, on 5 Rupees a month, has been employed to protect the young trees, but Dr. Cleghorn found him inefficient, and Mr. MacIvor, the Superintendent of the Government gardens, considers wire-fencing to be absolutely required as a protection. Mr. Thomas is, besides, reported to have earnestly and unceasingly exercised a personal supervision of the woods round Ootacamund, and the Conservator of Forests "does not hesitate to affirm with truth that, but for his continued exertions, the neighbourhood of Ootacamund would have been long since denuded of its beautiful woods."

8. Dr. Cleghorn then proceeds to suggest some general rules for the preservation of the Neilgherry forests. First, he would improve the present establishment which only consists of a forester, and six peons; and would portion out the woods, limiting the period of cutting to one year in ten for each, preserving a certain number of the finest growing trees to the acre, and planting (after cutting) young quick growing trees in and around each wood. The present system of allowing dead wood to be removed, directly encourages the Burghers to kill the trees, and should, in Dr. Cleghorn's opinion, be put a stop to; the existing decayed trees being at once sold off by auction; so that the useless wood might be at once got rid of, and room be afforded for the young saplings to grow.

Fuslies 1262-66 *both inclusive.*

9. It is presumed that the accounts of receipts for 5 years, which was furnished by the Collector of Coimbatore, shews the income derived from the sale of licenses to cut wood in the Government forests, though no detailed explanation is given.

10. Dr. Cleghorn further goes on to discuss the prejudicial effect on the indigeneous woods of the Neilgherries, arising from the enormously increased demand for firewood on the hills, and he shews the necessity for encouraging, as much as possible, the consumption of turf or peat, for fuel in private houses, in the barracks, and in the Department Public Works.

11. And lastly, Dr. Cleghorn advocates the formation of plantations round the barracks at Jackatalla, of an avenue or belt of trees (where practicable) along the Ootacamund and Jackatalla, and Avalanche, to Sispara roads, and the planting of 10,000 trees in the vicinity of Ootacamund for ornamental purposes at a cost of Rupees 1,350.

12. The Government attach the greatest importance to the preservation of the woods on the Neilgherries, and resolve to communicate a transcript of Dr. Cleghorn's suggestions relative to improvements in the system of conservancy to the Collector of Coimbatore, who will, in communication with the Conservator, frame a set of rules based on those suggestions, and submit them to the Government for approval. The proviso respecting the non-removal of dead timber seems highly necessary. When the wants of the Forest Conservancy Department on the hills in the way of an establishment, have been fully considered, the Government will be prepared to make the necessary application to the Government of India for the entertainment of the additional servants required. In reporting further on the subject, the present system of licensing or renting the woods should be accurately detailed, and a table of receipts and disbursements drawn up, shewing the items from which income is drawn, and the chief heads of expenditure.

13. The Government readily sanction the small sum of Rupees 1,350 requested by Dr. Cleghorn for the ornamental planting of 10,000 trees in the neighbourhood of Ootacamund under the superintendence of Mr. McIvor, under the conviction that the outlay is trifling in comparison with the advantages to be derived from the proposed plantation, even in an economical point of view, and that it is highly desirable that an example of successful planting should be placed before the residents on the hills in each of the chief places of resort, as an encouragement to others to engage in an enterprise which while it will be generally beneficial, will also be individually remunerative.

14. With reference to the increase of salary to Mr. MacIvor; 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, with a proper establishment; Captain Campbell's plantation should however be left under his own management as long as he is on the hills, but on his departure it should be included in the general system.

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15. The Conservator of Forests will therefore put himself into communication with Mr. McIvor, and report to Government the extent of the establishment which would be required, in order to maintain an effective supervision over all plantations and woods on the hills; and when the new system shall come into operation, the Government will be prepared to urge upon the Government of India the propriety of recommending to the Honorable the Court of Directors by which authority Mr. McIvor's salary was fixed, that it should be increased to Rs. 250.

16. Transcripts of this order and of Dr. Cleghorn's report will be forwarded to the Chief Engineer who will take into consideration the suggestions made for planting trees in rows or clumps to protect the roads on the hills and will make the communication ordered above to Captain Campbell. Colonel Faber will also draw the District Engineer's particular attention to Dr. Cleghorn's remarks on the sanitary advantages of a plantation in the vicinity of the Jackatalla barracks and express to him the opinion of Government that such a work might be undertaken from the estimates at very trifling cost.

(Signed) W. H. BAYLEY,
Acting Secretary to Government.

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Bangalore

No. 323.

Office of Conservator of Forests

10th. April 1858.

From

H. Cleghorn Esqre. M.D.,

Conservator of Forests.

To,

The Secretary to Government

Revenue Department

Fort St. George.

Sir,

Having had occasion to visit the Neilgherry Hills on duty in May and Sep.-tember of last Year, I took the opportunity of examining the experimental Plantations of Australian and Himalayan Trees near Jack-atalah, under the management of Captain Campbell, and having inspected them care-fully on both occasions, I beg to submit the following Report in accordance with instructions contained in Extract Minutes of Consultation dated 9th. June last No. 655.

Much has been written on the subject of planting the Neilgherry Hills, chiefly by the Gentlemen named in the margin, who have successively recommended the establishment

F. Gamble J. Sullivan. Agri. Hort. Soc. Proceedings

Capt. Allardyce. Dr. Wight. Capt. Beechtelamy. } Madras Journal of Science.

of Tree plantations. It is scarcely necessary for me to dwell upon the advantages to be derived from promoting this desirable measure, but the utility of so doing may be briefly stated thus.

1st. Plantations create, improve the soil and secure the permanency of the springs.

2nd. Do. shelter from the violent winds and modify the climate

3rd. Furnish material for Housebuilding, Furniture &c.

4th. Furnish fuel, fencing materials &c.

5th. For purposes of Ornament.

Much has been done by private individuals near their dwelling houses, through the instrumentality of the well furnished Arboretum existing at the Government Gardens, but the experiment recommended in the first instance and superintended in its progress by Captain Campbell, is the only attempt of Forest planting in the Nielgherry Hills on a considerable scale on the part of Government.

Having in my first visit been pleased with the general arrangements and the healthy appearance of the young trees, I requested Captain Campbell to favor me with a summary of the progress of his operations specifying

1st. The Establishment employed.

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2nd. The method of procedure and number of trees planted.

3rd. The sum of money received and expended.

4th. The prospects of the Plantations and his own wishes in regard to its future management.

The annexed Memorandum dated 10th August 1857 furnishes these details.

"Memorandum of the present condition and prospects of the New Forest of Konaguttay near Jackatallah on the Neilgherries commenced in March 1856 under sanction of Minutes of Consultation. No. 129 of 7th Febry 1856

1st Site and Physical Features. The valley of elevation selected for experiment partly on account of its vicinity to works under my charge extends in an easterly direction from the saddle of Billy Kumby (where the public road from Coonoor to Kotagherry distant 3½ miles from Jackatallah bounds it for a few yards till it joins the great "Khola Sholay" from which the Public works, have during the last five years drawn some (15000) Fifteen thousand tons of wood. The valley which attains a mean elevation of 6,400 (six thousand four hundred) feet is well sheltered from the dry cutting northerly winds, and the sweeping

easterly blasts by high ranges of Hills, and is intersected by a small stream of water which reveals a variety of soils from rich black mould, to a rhenyped oxide of Iron, mixed with siliceous masses resembling Laterite, all reposing on a stiff Felspathic clay, in which very faint traces of Lime may occasionally be detected.

2nd Establishment. No regular Establishment has been kept up, working parties European or Native, chiefly the latter, as they could be spared from other duties, have received orders direct from myself, the funds at my disposal not admitting the entertainment of a qualified Overseer. During the last six months, however, I have derived much assistance from Corporal Hall H.Q. M.s 84th Foot (whose services have been partially available). He has some acquaintance with Forestry, and is a steady zealous workman in whom I place confidence.

3rd Number of Trees planted and method of Procedure. At intervals of 6 feet on four Acres of grass land 14,500 fourteen thousand four hundred Acacias (Robusta) were planted out this year, the ground being previously well trenched at a cost of 90 (ninety

*Placed under orders of Conservator of Forests 18th May 1878 by Govt No 13. Dt 7th

Dft

Trees planted out in Feby

ninety Rupees (the ordinary English rate it may be remarked) per Acre. Three thousand three hundred running yards of ditch 6 feet deep and 7 feet wide at top have been dug and some 1200 Twelve hundred yards of paling put up. The trees are planted in long lines of mathematical accuracy, so that not one can be cut without immediate detection. No manure has been used, close planting and trenching (of which I generally disapprove) have produced vigorous plants from seedlings purposely raised on the most exposed situations, now averaging three feet in height and one inch round the collar. ... On easier terms, we have there 34,000 Thirty Six thousand hardwoods comprising Hale Kaingu, Buchania, Calloonee, Narchippe Nakalos and other varieties pitted on 11 (eleven) Acres of clearing bared by the wood cutting parties (yet in both instances the young trees at 3 of their age, the largest and healthiest I remember to have seen (even in America) unstimulated by manure, which I have always found produces rapid heart and sometimes premature decay.

4th Money received and expended. Of the (7500) Seven thousand five hundred rupees placed by Government at my disposal

Estimate for 1879

receipt & disbursements

served

served disposal, I have spent Rupees 5640-10-10 Five thousand six hundred and forty, Annas ten and pies ten, as follows.

On trenching 6 Acres at 90 Rupees	540	- -
" 3300 yards ditching, fencing and on water courses	618	5 -
" 15000 Seedlings at 7 per 100	1050	- -
" Seeds and nursery beds	371	8 -
" Baskets	212	1 -
" Purchase of Land	700	- -
" Forester's House	100	- -
" Rifle, for shooting wild animals	80	- -
" Ventilating paths	8	2 -
" 36000 Hardwoods including the necessary watering, nurseries and fencing	1780	4 -
Rupees	5,460	11 10
Leaving unexpended balance	2039	5 2
Total Rupees	7500	- -

5th. Prospects and Proposed management. } The prospects of the plantation are such that if owing to the present financial pressure, Government should not feel disposed to make me any further grant of money before May 1858, I can easily manage to carry on fencing, pitting, nursery beds &c. on a reduced but still safe and efficient scale for the next 9 months, when I expect to have One Lac of

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young trees ready to set out, by that time funds will probably be available, and assuredly they will be required.

2. I must say I am desirous of withholding any report at all at this infant stage of proceedings, for though I clearly see my pledge of 16th November in current course of redemption, others may not so clearly apprehend the value of my nurseries which now make but little show to an unpractised eye; but even now though confessedly desirous of avoiding criticism for some months to come, the success of the experimental Forest is no longer a matter of speculation, but a pleasant fact to propose on, of which I have the pleasure to cite Dr. Cleghorn as an eye witness.

Jackatallah } Signed, John Campbell Capt.
10th August 1857 } 7th Light Cavalry.

Remarks on the foregoing Memorandum.

Site. The Plantation is situated as Captain Campbell observed at Conagutty 3½ miles from Jackatallah, close to the public road from Coonoor to Kotagherry and near the site selected by Mr. Rohde for the proposed Coonoor Jail. The Valley is sheltered from the prevailing winds, is watered by a stream and

is altogether a well chosen spot. The soil is ge-
=nerally good and the slopes enjoy a variety of
aspects well suited for experimental plantings.

Price of Land. The purchase money 700 Rupies
was paid to the Burgher Villagers after negoti-
=ating with the Collector of the District. The
entire extent is 600 Acres.

Area planted The Area planted when I visited
the Hills was about six acres in extent, fenced
in with wooden paling and protected by a young
hedge of Cocs alpinica Lepiaria, the Mysore
thorn. This was much required, the wild
animals being very destructive. Since I was
there, the plantation has been extended
and may perhaps now cover eight acres.

System pursued
Nursery } The seeds are sown
in pour feet beds, and in
dry weather watered once in 3 or 4 days from
a small water course led in for the pur-
=pose. Long rows of the Acacia Robusta
were just coming above ground, 4 rows in
each 4 feet bed, so that the rows were 1 foot
apart. This tree is considered to be most
eligible for the rapid production of firewood.
The quick succession of suckers which it throws
up had led to its being banished from the
Horticultural Garden, but this renders it
extremely valuable to the Forester with a

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view to future timber for fuel. Several suckers
are thrown out from each tree which forms much
wood if all have room to grow.

In addition to these nursery beds, there
were some thousands of seedlings in baskets
arranged systematically around in the shade
of a long Pandal.

In the nursery beds, Capt. Campbell
stated, that he computed that the total number
of seedlings in May next would be 100,000.

I saw also a large number of young
Deodars sown on 17th May coming up well.
There were also many young Kalungoo, an indi-
=genous Ordelaceous tree, timber excellent,
prized by the Burghers. There were other in-
=digenous trees in small number, compared
to that of the Acacia, which forms the bulk of
the plantation.

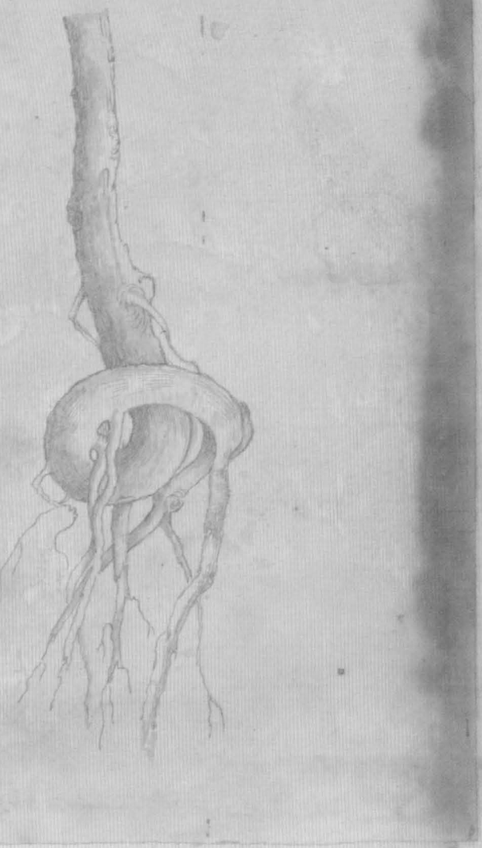
Planting out. The ground in which the young seedlings
were afterwards planted is pasture land, and has ori-
=ginally been covered with coarse grass and tangled
Bracken (Gleichenia Hermanni). There is no scarci-
=ty of such land on the Neilgherries. At first
Captain Campbell trenched 18 inches deep, and put
in 15000 young Acacias, 4 feet apart. Of these, a large
proportion were looking remarkably well, but after
carefully counting up the gaps, I calculated that
1000 had died. It is but just to remark that however
Hall has been much absent, and is in no way

to blame for these failures, which is not indeed more than might be expected - In the course of the experiment Captain Campbell has ascertained that the expence of trenching is unnecessary, he therefore discontinued the operation - He now finds it advisable to make holes 1 foot square by contract, and has engaged with a gang of Bheghers at the rate of 150 holes per Rupee, that is to say, 24 holes are made by each Cooly per diem -

The distance between the holes has been gradually increased from 3 to 6 feet, but varies according to situation - The arrangement is every where uniformity, and where other trees are mixed with the Coffee, the plan of alternating hard and softwood as shewn in the diagram is proposed to be adopted -

The yellow flowering Acacia thrives in every soil (A. Lophantha) and answers well as a nurse to guard slow growing wood - Capt. Campbell reports that the number of Holes made per day in anticipation of the next rains will be equal to the number of young plants viz 40,000

It may not be out of place here to draw attention to an error in management which causes serious mischief to many thriving young plants both in public and private experiments - I mean want of care in attending to the tender tap root in the transplanting of seedlings - I observed some delicate dwarfish plants in the Australian plantation surrounded by vigorous young trees and pulled up the nearest to ascertain the cause, which became at once apparent - The Cooly employed in transplanting had pressed down the tap root so as to produce the contorted appearance seen in the annexed sketch C, the double twist had interfered with the circulation of the sap, and the plant drooped in consequence -



Although this particular Acacia, whose root is figured was taken up in Konagutty, the same disregard to the requirements of the taproot may be seen in many of the Coffee Gardens of the most experienced planters, to the great injury of the plants and consequently of the future crop of Coffee -

To prevent the occurrence of this mischief Captain Campbell places trees intended for transplantation in wicker baskets, supplied in great

timber has been removed by well laid out cross roads, fenced throughout, a most ne-cessary measure, as the depredations of Cattle and wild animals of various kinds, are very injurious to the welfare of any young plant-ation. The roads are sufficiently broad to allow of two Carts to pass one another easily when laden with wood. In several rocky turns of the road a few Himalayan Deodars and other trees have been planted out in an ornament-al manner. Private Dart 75th Highlanders was in charge of these portions when I visited the Neilgherries; he had not the same amount of professional knowledge as Corporal Hall, but is an active and trustworthy young man.

In reference to the future management of this growing plantation, I would venture to submit that, as the experiment has hitherto been successful, the trees being in a healthy growing state, although there are not yet cer-tain evidences on which to found calculation of the ultimate produce and value of the trees, a further sanction of 2500 Rupees should be given, and that Capt. Campbell who has shewn himself an intelligent For-ester, and who has continually watched

from

from the begining, he requested to continue to superview the progress of the young Planta-tion - Government will observe that Captain Campbell has drawn no remuneration for he services which were voluntarily offered -

II

Experimental planting of Mr. Thomas in the vicinity of Ootacamund -

No 900 - 25th Sept 1857 Rec'd Sept.

In Extract Mof/C. No and date as per margin a sum of 2500 Rupees was placed at the disposal of the Collector Mr. Thomas for planting trees in and about Ootacamund.

* dated 13th July 1857 -

Mr. Thomas states* that he has planted about 8000 Australian trees of different species (at a cost of 500 Rupees) and preserved the old denuded Forests to a certain extent - To prevent the destruction of the young trees by Cattle, he finds it best to em-ploy a watcher at 4 or 5 Rupees a month, as a ditch or fence to be really effective and to protect a plantation of several acres would entail large expen-diture, and would be unsuited to his operations." So far as I could judge in my visit to the Neilgherries the watchman was insufficient, and many young trees had been eaten down by hares or broken by cattle and Deer roaming about. A hut is an essential addition and Mr. Moor considers that wirefencing is absolutely required

Mr. Thomas' labours have not been confined to a single locality, but though apparently desultory in character, when compared with Capt. Campbell's plant-ations, they have been in their way highly useful - He has earnestly and increasingly exercised a personal supervision of the woods round Ootacamund when he visited the Neilgherries, and has manifested

a warm interest in the progress of this Department as evinced by the Establishment of his private Garden at Burliar, which has been productive of much good in disseminating Fruit and other Trees. I do not hesitate to affirm with truth that, but for his continual exertions, the neighbourhood of Kotacamund would have been denuded of its remaining beautiful Sholas long since -

III

General views regarding the Preservation of the Neilgherry Forests

For the maintenance of the Neilgherry Sholas it is hopeless to expect conservancy by Rules and Prohibitory - Much timber runs to waste, and dies or is decayed and fallen is now sold and the wood cutter's axe is necessarily in demand for its removal.

The greater part of the wood brought into Kotacamund is fetched by Burghers, and is cut within 5 or 7 miles of the limits of the Cantonment. The right to remove dead trees necessarily induces an interest in destroying them.

The present Establishment consisting of a Forester and 6 Peons for the conservancy of the Neilgherry Sholas seems susceptible of improvement - One or more Foresters are required, but the Peons under instructed and carefully selected men are comparatively useless - They have no authority but

The duty of Forester may be easily performed by one man, provided the rules are such as to limit the authorized operations of the wood-cutters to certain localities, as has been the custom, but a better course appears to be to portion out the Sholas - To conserve only a certain number (of the finest growing trees) to the Acre, or by estimate to the Shola, to limit the period of cutting to say one year in ten for each Shola and to plant the year afterwards young quick growing trees in and around each Shola (a single man might do this).

The Forester would by personal inspection ascertain that no cutting was going on out of the authorized limits - all power to cut dead wood would be withheld, and the Sholas would be let under proper restrictions which the Forester would see enforced - Previous to the letting of the Sholas all reserved timber should be marked.

It might be a good plan in the first instance to try the experiment of a man marking or pollarding all the decayed moss-covered trees in a Shola and then selling them by auction - this would get rid of much old and useless wood, and give room for the young saplings to grow; this arrangement might supply all timber needed for 7 years - Then the woods might be worked, as in England, with a reserve of so large or so small trees per Acre with the fringe outside,

which is regularly and systematically worked
by Capt.s Campbell. This turf is a most ex-
cellent fuel, and I advocate its use for the soldiery
as well as in private houses. With a little a mix-
ture of wood it answers every purpose. It seems
to be most desirable to encourage the consumption of
this material. I am aware that Capt.s Francis and
Campbell have used it successfully for Brick and Lime
burning - and I would respectfully urge that its em-
ployment (in lieu of wood) should be pushed to
the utmost extent in the Department Public Works.
The price per Ton is a little less than that of wood -
The chief impediment to the working of the bogs on
the Western part of the Hills is I believe the small
number of sunny days to dry the turf thoroughly -
but this does not apply to the Eastward - and the
objection to the use of peat which I have heard viz
that the dust created is injurious to furniture, has
been exaggerated.

Several Europeans work the peat bogs, which
are not burdened with any tax, but the profits being
smaller than those obtainable in other occupations
the trade is not briskly followed up.

Suggested improvements - Here I may allude to
the importance of planting near the Military
Cantonment of Jackatalla, at present impro-
tected from the prevailing strong winds, which
blow over the bare hills without any perceptible

which is of great importance. Certain Sholas being set
apart for each year and no axe or any portion al-
lowed in the rest. One English Forester on 35 Rupees
and two planters on 6 Rupees each ought to be more ef-
ficient than a Forester, who has peons to depend
upon, but who in fact do nothing.

The range of the years operations must be con-
tracted to enable any Establishment to work efficie-
ntly. The accompanying Statement of the receipts for
the year received from the Collector shews a total

Receipts Rs 1347-12-1

Amount of - - - - - - - - - - - Rs 2100-0-0

Expenditure for 5 years - - Rs 752-4-1

Total in excess Rupees 752-4-1

Consumption of Fuel - The question of Firewood is a
difficult one in various parts of the Country,
and in none more than at Botacamund -
Every European house has several fires and
every native house has at least one fire; as
these constantly burning must soon exhaust
the fine woods of the Hills. The annual
influx of Residents, Tradesmen and Coffee
planters and the increasing demand for Fire
wood has produced a remarkable and pre-
judicial effect on the indigenous woods
of the Neilgherries.

Peat Bogs - Black turf might be much more
extensively used as a substitute for wood than it
is. I have examined the Tullichurry Bog

Tax by 1862 - Rs 312-4-8
" " 1863 - " 306-3-8
" " 1864 - " 57-12-0
" " 1865 - " 386-12-9
" " 1866 - " 305-12-"
Rs 1347-12-1

I have solicited the opinion of three Medical Officers stationed on the Hills as to the prospective value of planting generally. This measure might be gradually accomplished at little expense as there will always be amongst the soldiers several gardeners so that tree planting may be well and economically carried out. The concurrent testimony of the three Medical Officers will be found in Appendix A.

The thriving young plantations around the residences of Brigadier Mac Duff, Dr. Mac Beth and Captain Campbell show what may ultimately be effected in that locality.

The new Road from Jackatalla to Votacamund is almost without a tree during its entire length (12 miles). Much of the Ghaut is scarped out of rock and the slope at many points is too bare and precipitous for planting, but in the angles and sheltered corners clumps of trees might be advantageously laid down which would in some measure diminish the force of the wind. Again on the road from Avalanche to Kidiparai, there is a long stretch of bleak and treeless country, in which every year a number of Malabar bullocks perish benumbed with cold and additional rest houses have been ordered for their protection. It has occurred to me that perhaps a belt of the Australian Acacias might be useful in sheltering the traveller - the seed might be put in with the plough,

19/548

and in this way a tolerable barrier might be raised against the wind, which for great part of the year blows fresh, and sometimes so strong that men can hardly stand.

Ornamental Planting - Ornament may seem to be a secondary condition, still it would not be altogether out of place in the vicinity of Botacamund, where with a little attention in planting and laying out the ground, great effect might be produced with little trouble, and with a fair prospect of ultimate profit. Much might be done in this way, where the advantages of climate are so great and a Government Arboretum already exists.

Taking this view, I consulted Mr. McIvor and visited several localities in the immediate vicinity with him particularly eligible for ornamental planting. I also called upon him for an estimate of the expense of planting 10000 trees which I beg to annex (Appendix B) for the favorable consideration of Government. I consider Mr. McIvor's Estimate is most ample containing the highest cost that can be found necessary for making an Australian plantation.

It will be observed that a very large portion of the expence is for fencing; the wire fencing is most serviceable, and would no doubt come into use again either for an extension of the experiment or at the Garden. In case, however, that Government be not able to sanction this outlay, I hope that they may allow the experiment

* Cost of Wire fencing - Rs 1000
Freight & Cartage 10% } 350
Rs 1350

to be carried on without it. I will strictly enjoin careful vigilance and strict economy so that there shall be no needless expenditure.

I formerly ventured to suggest (Memorandum 1st August 1857) that Mr. McIvor having now served the Government for ten years without any increase of salary, might personally be allowed an increase so as to raise his allowances from 125 to 200 Rupees per mensem on the express condition that he devotes his whole time unreservedly to Government Service. I would respectfully renew this suggestion. In addition to his regular Garden duties Mr. McIvor may be required to conduct the experimental planting of 10000 trees in accordance with his estimate and to supervise the renovation of Sholes within 5 miles of Ootacamund.

I have the honor to be,
Sir,
Your Most Obedient Servant

H. Cleghorn
Conservator of Forests.

Appendix A
20
748

No 160

From A. Spekenbuyen Esqr. Assistant Conservator of Forests

To H. Cleghorn Esqr. No. 2
Conservator of Forests.
Dated Coonoor 15th Sept. 1858

Sir,

I have the honor to acknowledge the receipt of your letter of 7th Instant, as noted in the margin, and, as requested, proceed to give you my opinion on the points referred to.

No 185 asking opinion on the subject of tree planting on the hill along Hill with reference to health, price of firewood &c.

The subject I consider to be one of great importance both in a sanitary and economic point of view.

1st With reference to its bearing on health. Let us take for example Jackatalla. That station may, with the exception of one or two compounds, be said to be entirely destitute of trees. Now, in having had frequent opportunities of observation during the last three years, I have become strongly impressed with the opinion that the larger proportion of disease, especially of serious bowel complaints, at Jackatalla, than at the neighbouring Station of Coonoor, is due in a great measure to this circumstance, viz the want of wood, as in all other respects, as height, temperature, exposure &c. there is scarcely any appreciable difference between the two places. I think therefore that by planting trees judiciously, a great benefit would be derived, not only from the

shelter they would afford, but from the good effects produced by a moderate quantity of vegetation in purifying the atmosphere.

These remarks would of course apply with equal force to every inhabited portion of the Hills, where there is a scarcity of wood. I think moreover that by carrying out the project still further, and planting largely on the vast uncultivated tracts, which exist all over the Neilgherries, the climate might in time become so far modified that the extremes of temperature would not be so excessive, or the variations so sudden, thereby rendering the Hills much more suitable as a Sanitarium for invalids.

In considering the question as it affects the supply of wood for domestic purposes.

There is no doubt that, if the demand for firewood, and small timber for building native houses, continues, even at the present rate, and without making any allowance for the greatly increased consumption to be expected by any addition to the troops stationed on the Neilgherries, or to the population generally, the supply must soon become exhausted, especially as there is an immense amount of waste only, from the reckless destruction of wood by the hill tribes in their periodical burnings of the dry grass. To provide for this immense, and steadily increasing consumption of wood there is no resource, but to plant trees to a large extent on the Hills,

as the difficulty and expense of procuring wood from the low country put that source of supply entirely out of the question.

I have the honor to be Sir
Your most obedient humble Servant
Signed J. Maitland, Asst. Surgn.
Medical officer Coonoor.

Coonoor
16th Novemr. 1857.

Ootacamund 28th October 1857.

From,

Assistant Surgeon G. Mackay M. D.
Medical Officer Neilgherries.

To,

H. Colegrave Esqr. M. D.
Conservator of Forests.

Sir,

The subject of planting on the Neilgherry Hills is one of the most paramount importance, and has, I am aware, already in some degree, engaged your attention.

2. In the Stations of Ootacamund, Coonoor, and Kotagherry improvements in that way must, I presume, be chiefly carried out by private individuals, Land owners and Tenants; but with reference to the Cantonment of Jackatalla it seems to me a matter worthy of your best consi-

duration - By judicious planting I feel sure that
the health and comfort of the Troops stationed
there would be greatly benefited, while the ap-
pearance of the station would be vastly improved -

3. Belts of trees planted along some parts
of the plants and roads leading from the low-
country, would be a very great protection par-
ticularly to the natives bringing provisions &c to the in
Hills, many of whom at present perish on the journey and
others come into Hospital here in a hopeless state, from
the effects of exposure.

In a climate where the temperature is so variable,
and moisture so prevalent as on the Neilgherry Hills,
an abundant supply of firewood or other fuel becomes
absolute necessity for the preservation of health among
all classes, both Europeans and Natives.

4. I need hardly remark that the providing of fuel
is a matter, the consideration of which, cannot be left
till the urgent demand arises, but should be antici-
pated by every possible means. When the Barracks at
Jackatalla are fully occupied by European Troops, and
the European population on the Hills generally increases,
which there seems every prospect of, the demand for fuel
will be proportionably increased; and I can fancy no
greater hardship that could arise, or any thing more
likely seriously to affect the health of all classes than
the want of so necessary an Article as good fuel.

I feel it unnecessary to point out how such a

sufficiently acquainted with the regulations now en-
forced regarding the cutting of wood and peat, to be able
to offer many suggestions; but, viewing the subject as
one seriously affecting the comfort and health of the com-
munity, I have ventured, at your request, thus to express
my opinion -

I have the honor to be Sir
(Signed) Geo: Mackay - Asst Surgeon
Medical Officer Neilgherries.

Ootacamund 24th December 1857

From,

Assistant Surgeon W. Aitken M.D.
Medical Officer Neilgherries

To,

H. Cleghorn Esqr. M.D.
Conservator of Forests.

Sir, [illegible] 24th Dec 57

In reply to your letter No 107 dated the 8th Instant
requesting my opinion regarding the probable effects of the
formation of tree plantations on the health of settlers, resi-
dents and troops that may be located on the Hills, I
have the honor to offer the following observations -

I infer from your letter that their formation

on a large scale is contemplated; and I think that the
likelihood of their proving detrimental or not will
depend greatly on the manner in which they is carried out.

× × × × ×

At the same time, much may be done by plant
ing judiciously within moderate limits, not only to meet
any prospective increase in the demand for firewood, but
also to produce timber fit for various useful purposes.

Indeed I am disposed to think that some measures
for the extension of the cultivation of trees are urgently
called for, as well as for the preservation of those portions
of the natural forests which still remain; as it appears
doubtful if the latter will long be able to afford a sup-
ply sufficient for even the present demand for firewood,
except at the expense of their indiscriminate destruction
in the vicinity of the Stations; an event which might
easily be obviated by the adoption of suitable precautions
The means which I should suggest as most likely to a
meet all the requirements in the least objectionable man-
ner, is the planting in all directions of open clusters of
trees, which would interfere little if at all with cultiva-
tion around and beneath them, and also of compara-
tively open posts on ground unsuited to other kinds of
cultivation.

I have the honor to be Sir
(Signed) W. Arthur M.D.
Asst. Surgeon
Medical Officer Neilgherries.

(True Copies)

Bangalore 10th April 1858.
Sir,
I have the honor to forward herewith for the information of Government a Report on the Cultivation of Cinchona and Coffee at Ootacamund and Neddiwuttum, and to solicit that a sum of Rs. 3,000 may be placed at the disposal of Capt. Campbell Superintendent of Plantations for the encouragement of tree planting from the Revenues of the Station.
I have &c.
(Signed) B. Ward
Secy. to Govt.

To
The Secretary to Government
Public Works Department
Fort St. George

Madras 10th April 1858.
Sir,
I have the honor to forward herewith for the information of Government a Report on the Cultivation of Cinchona and Coffee at Ootacamund and Neddiwuttum, and to solicit that a sum of Rs. 3,000 may be placed at the disposal of Capt. Campbell Superintendent of Plantations for the encouragement of tree planting from the Revenues of the Station.
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(Signed) B. Ward
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The Secretary to Government
Public Works Department
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I have &c.
(Signed) B. Ward
Secy. to Govt.

To
The Secretary to Government
Public Works Department
Fort St. George

Madras. 10th April 1858.
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I have &c.
(Signed) B. Ward
Secy. to Govt.

To
The Secretary to Government
Public Works Department
Fort St. George

23/58

Madras. 10th April 1858.
Sir,
I have the honor to forward herewith for the information of Government a Report on the Cultivation of Cinchona and Coffee at Ootacamund and Neddiwuttum, and to solicit that a sum of Rs. 3,000 may be placed at the disposal of Capt. Campbell Superintendent of Plantations for the encouragement of tree planting from the Revenues of the Station.
I have &c.
(Signed) B. Ward
Secy. to Govt.

To
The Secretary to Government
Public Works Department
Fort St. George

No. 329.

Official Memorandum

With reference to Letter dated 10th Current No. 323, the Conservator of Forests has the honor to forward a Plan just received from Captain Campbell shewing his method of planting out the old Forest (Kota Shola) with young trees.

Mysore
16th April 1858

H. Cleghorn
Conservator of Forests

To
The Secretary to Government
Revenue Department
Fort St. George

Tabular Statement of increase of Salary solicited on behalf of Mr. R. Scott Moor, Superintendent Government Botanical Garden at Ootacamund.

Extract from Home Depart. of Govt. of India.		Office to which the proposition refers.	Nature of charge.		Proposition												Consent or Existence of Vacancy.	Grounds of Application.	Local Commendation.	Orders of the Government of India.		
					Permanent				Temporary											Home Dept.	Financial Department	
									Increase per Month.				Decrease per Month.									
No.	Date.		Personal Scale	Professional Scale	Increase per Month.	Decrease per Month.	Period		Period											Remarks.	Remarks.	Rules.
			Rs. a. p.	Rs. a. p.							Rs. a. p.				Rs. a. p.							
		Govt. Botanical Gardens	125 " "	200 " "	75 " "	" " "	" " "		" " "		" " "		" " "		" " "		Casual.	Mr. R. Scott Moor has served for 20 years in the Madras Army and has attained the rank of Major on the Staff of the Madras Army. He is also a Member of the Royal Asiatic Society.				

H. Cleghorn
Conservator of Forests.

R 57/58.

Appendix B

Estimate for planting 10,000 Australian trees in the neighbourhood of Cotacamund on the Neilgherry Hills.

Dr.			
Cost of Nursery of 10,000 plants and Carriage to planting ground	250	"	"
Cost of making 10,000 holes at from 5 to 8 holes each man per diem	300	"	"
Preparing 10,000 holes and planting do	150	"	"
Superintendence for the 1st year	1,200	"	"
Clearing weeds from around the trees for the first three years	150	"	"
Compound Interest on Rupees 2,050 at 6 per Cent for 10 years	1,303	12	10
2000 yards of strong wire fencing 5 ft high at 1/ per running yard or sufficient to enclose 33¼ Cunnies	1,000	"	"
Freight and Carriage to Cotacamund	350	"	"
Cost of felling and preparing the trees for market at the end of 10 years at 8 Rs each	5,000	"	"
Net Profit	40,296	3	2
Rupees	50,000	"	"

Cr.			
Value of timber at the end of 10 years say each tree contains 8 Cubic feet of Heartwood for building purposes at 8 As. per Cubic foot	40,000	"	
Value of Loppings for firewood say each tree contains 4 Bandy loads at 4 Annas per load	10,000	"	
Rupees	50,000	"	

True Copy

(Signed) W. G. McIvor
Superintendent

Government Gardens
Cotacamund
7th August 1857

H. Cleghorn
Conservator of Forests

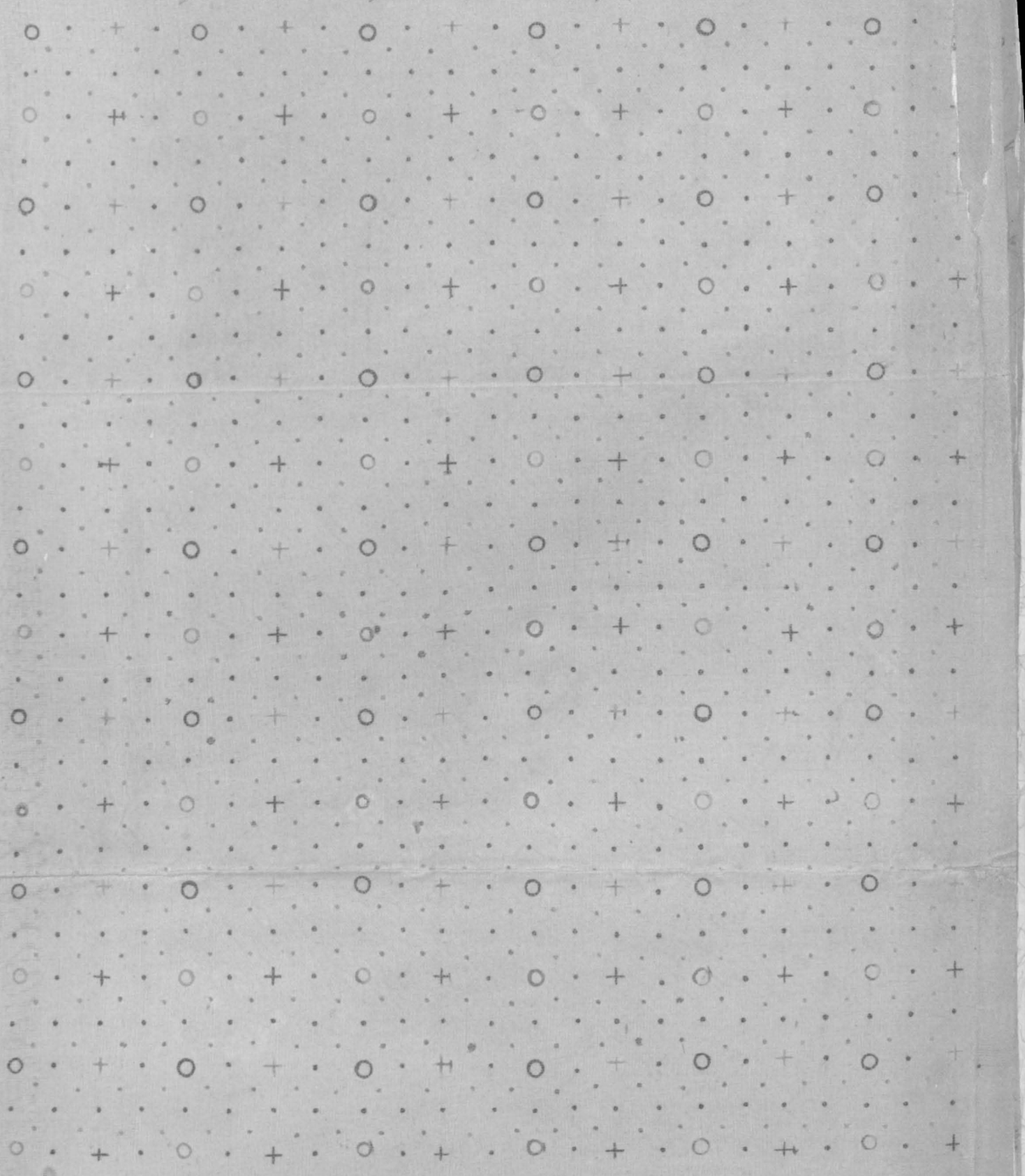
85/1552

B
28/148



A

Diagram showing the approved system of distributing trees in a mixed Hardwood plantation





PLAN

SHEWING THE ARRANGEMENT OF 363 TREES

in a Square of 65 feet for proposed

NEW FOREST

NEAR

JACKATALLA

34
748

Revenue Dept.

No. 748.

Extract from the Minutes of Consultation

Under date the 2nd June, 1858.

Read the following

Papers.

From the Conservator of Forests

/Here enter 10th April 1858 No 820/

Official Mem.m from Do

/Here enter 16th ——"——"——/

1. On 28th August

1855, Government referred

to the Collector of Bombay

for report through the

Board of Revenue, a

proposition from Captain

Campbell, Rear Assistant

Executive Engineer on the

Salsette Service, to raise a

forest of Australian

trees

trees on three Hills. Mr
Thomas replied on the 24th
of November of the course
pursued at Portsmouth
on cutting of Eighteen
Ten thousand for an Experi-
mental plantation as
recommended by the Board
of Revenue in
their proceedings dated 18th
December 1850 No 1328.
The sum was to be divided
between the Collector and
Captain Campbell, who
were required to submit
periodical reports of
the progress of the expe-
riments. The first of
these reports is received
Government with the

E. Dn. C. No 17. 7th Feby 1856
Encl. to No 129
R. D.

32
748

proceedings of the Board
of Revenue dated 9th
June 1857 No 1951, but it
was brief, and no
orders were passed upon
it. The Forest Conservancy
Department having in
the meantime been orga-
-nized, Dr. Cleghorn was
requested to fully investi-
-tigate the matter, and
report upon it to Govt.
The Conservator of
Forests now replies to
their order in his letter
recorded at the head of
these proceedings.

2. After enumerating
the advantages which
ensue generally from
planting

E. Dn. C. No 655 dated
26th June 1857. R. D.

planting; and observing
that Captain Campbell's
attempt is the only instance
on the Neilgherry Hills of
Forest Planting on a con-
siderable scale on the
part of Govt., Dr Cleghorn
proceeds to remark upon
Memorandum on the
ject by Captain Campbell,
ich he submits with
s report, in which
e site and altitude
the Plantations, the
tablishment, and mode
working, are described,
receipts and disburse-
nts are shewn up
August 1857, and sug-
ions are offered for
Conducting

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conducting operations
in future.

3. The plantation
is situated near the
site selected by Mr
Rohde for the proposed
European Jail, and is
3½ miles from Ootacamund,
and Dr Cleghorn considers
the spot well chosen.
The extent of land which
it is intended eventually
to plant is 600 acres, and
it was purchased from
the Burghers for 700 Rs.
Rawing, before it was
cleared, been covered
with coarse grass and
"long leaf bracken". The
ared planted, when the
Conservator

Conservator of Forests was
on the Hills, was six acres
hedged and fenced; and
it has since been extended
Eight acres. The seeds
sown in four feet
ds, and in dry wea-
ther are watered from
stream; long rows of
"acacia Robusta"
st coming above ground
the time of Dr
Thom's visit, and it
calculated that there
be 100,000 seedlings
May 1858, exclusive
large number in
beds. Some young
ars were thriving,
some indigenous
cedrelaceous

cedrelaceous trees cal
Kalungoo. The acacia
however forms the ba
of the plantation.

4. Dr Oleghorn
then describes the ma
-ner of Planting out
for which operation 100,
holes have been prepa
in anticipation of th
next rains, and re
shews how, from car
-less planting, the roots
of trees are often in
-jured, and the trees
themselves stunted
in their growth.

5. In inverting th
great Kola shola for
the requirements of
the

the Barracks, Captain
Campbell has planted
the cleared portions
with many thousands
of young trees of sorts
most esteemed by the
Burghers, and organized
a system calculated
to promote reproduction
to its fullest extent.
Dr. Clayhorn recommends
a further sanction of
2,500 Rupees, and that
Captain Campbell, who
has shown himself
to be an intelligent
Forester, and who has
continually watched
this Forest from the
beginning, be requested

to

36
36
748

to continue the supervision
of its progress. The
Government will
request the Chief En-
-gineer to convey to
Captain Campbell
their thanks for his
successful and very
useful services, and
to inform that Officer
that they consider
the progress which has
been made towards
producing a supply of
Timber, and wood fu
-ful to be very satisfac
-tory indeed. The disburse
-ment of the sum of
Rupees (2,500) Two
thousand five hundre
is sanctioned.

Jon

6. For the new Plan-
-tation Captain Campbell
has had no regular
Establishment, and
the funds at his dis-
-posal have not ad-
-mitted of the enter-
-tainment of a qual-
-ified Overseer, of
Rs 7500 Rupees placed
at the Executive En-
-gineers disposal in
the first instance
Da a P
60-10-10 have been
hundred, leaving a
Da a P
balance of 4029-5-2 un-
-ended.

Dr Cleghorn myself
can vouch the efforts made
by Mr C. D. Thomas,
Collector

Ordered
Journal
Ps

36
748 Collector of Coimba
to promote the gro
of timber in and
Ootacamund. That
has planted about
Australian trees o
different species at
cost of 400 Rupees
and the old demand
Forests had been re
-sown to a certain
extent. A watchma
on 5 Rupees a month
has been employed to
protect the young trees
but Dr Cleghorn foun
him insufficient, and Mr
Mac Ivor, the Super
-intendent of the Govern
-ment Gardens, consider
wire

some general pul
for
~~regulating~~ the pr
-vation of the Fo
Forester. Such fu
would improve
present Establish
which only consists
a Forester, must sup
Rent; and whereon co
portion out the wood
limiting the period
of cutting to one year
in ten for each 1/10th
-serving a certain
number of the finest
growing trees to the
acre, and planting
(after cutting) young
quick growing Trees
in and around each
wood

ire fencing to be abso-
etely required as a pro-
ction. Mr Thomas
Bexley reported th
have earnestly and
ceasingly exercised
personal superin
ion of the woods
nd Estates committee
Forests does not re
te to affirm with
t that, but for his
ined exertions, the
ighbourhood of Esta
mal would have
long since denuded
beautiful woods.
Dr Leighton
proceeds to suggest
some

who were desir
their fencing act
of Ground —

wood. The present sys-
-tem of allowing dead
wood to be removed,
directly encourages the
Burghers to Kill the
Trees, and should, in
Doctor Cleghorn's opi-
nion be put a stop to; the ex-
isting decayed trees
being at once sold off
by auction; so that
the useless wood might be
at once got rid of,
and room be afforded
for the young saplings
to grow.

It is presumed
that the accounts of
receipts for 5 years,
which was furnished

F1262 66
both inclusive

by the Collector of Customs, shews the income de-
-rived from the sale of
licences to cut wood on the
Govt. grants, though no
detailed explanation is
given.

9 Dr. Cleghorn further
goes on to discuss the pre-
-judicial effect on the indi-
-genous woods of the Nil-
-gherries, arising from the
enormously increased de-
-mand for Firewood on the
hills, and he shews the
necessity for encouraging,
as much as possible, the
consumption of Turf or Peat,
for fuel in private houses,
in the Barracks, and in
the Department of Public
Works.

10 And lastly Dr. Cleg-
-horn advocates the forma-
-tion of plantations round
the

the Barracks at Jakka-
-tolla, of an avenue a belt
of trees where practicable
along the Coimbatore and
Jakkatolla, and the
Coimbatore to Singanal-
-ur roads, and the planting
of 11,000 trees in the vicinity
of Coimbatore for ornam-
-ental purposes, at a cost
of 1 Rupees 1,350.

The Govt attach
the greatest importance
to the preservation of the
woods
forests in the Neilgherries,
and resolve to communi-
-cate a transcript of Dr
Clegherns suggestions, rela-
-tive to improvements in the
system of conservancy to the
Collector of Coimbatore, who
will in communication
with the Conservator, frame
a set of rules based on
those suggestions, and submit

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748

them to the Govt for ap
-proval. The provision re
-specting the non removal
of dead timber seems
highly necessary. When
the wants of the Forest
Conservancy Department
on the hills in the vicin
of an Establishment has
been fully considered, the
Govt will be prepared to
make the necessary ap-
-plications to the Govt of
India for the entertain-
-ment of the additional
servants required. In re
-porting further on the
subject, the present sys
-tem of licensing or renting
the woods should be accu
-rately detailed, and a
table of receipts and dis
-bursements drawn up, re
-ferring the items from
which income is drawn
and the chief heads of
expenditure

...peculations.

3. The Govt readily sanction the small sum of £1,350, requested by Dr Kellyhouse for the experimental planting of 1500 trees in the neighbourhood of Ootacamund under the superintendance of the Nilgherry, under the conviction that the outlay in planting in comparison with the advantages to be derived from the proposed plantation, even on an economical point of view, and that it is highly desirable that an example of successful planting should be placed before the residents on the Hills in each of the chief places of resort, as an

40
748

encouragement to others to engage in an enterprize which while it will be generally beneficial, will also be individually remunerative

13 With ref: to the increase of Salary to Mr Conductor Ross R.A. the Sec. C. in Council Opinion that the Supt of the Govt Farm at Ootacamund should have the general supervision of the woods and Plantations on the Nilgherry Hills, with a proper Establishment; Captain Campbell's plantation shd however be left under his own management as long as he is on the Hills, but on his departure shd be included in the general system

14 The Conservator of Forests will therefore put himself into communication with Mr Conductor Ross, and report to Govt the extent of the

Establishment which would be required, in order to maintain an effective supervision over all plantations & woods on the Hills; and when the new system shall come in to operation, there will be prepared to urge upon the Govt of India the desirability of recommending to the Secretary of State for India by which authority the salary was fixed that it be increased to Rs 250.

4. Duplicate of this order and of Dr Cleghorn's report will be forwarded to the Chief Secy who will take into consideration the suggestions made for planting trees in rows & clumps & protecting the roads on the Hills

4/748

ordered above to Supt Camptheca. Col. Faber will also draw the District Surs particular attention to Dr Cleghorn's remarks on the sanitary advantages of a plantation in the vicinity of the Sakatalla Barracks and request him the opinion of Govt that such a work might be undertaken from the Estimates at every Station

In

Jno 6.

4 Copies to the Conservator of Forests Dr 4 Nov
9 — " — Chief Engr &
1 — " — Collr of Coimbatore &
1 — " — Accountt Genl &
1 — " — Civil Audr &

Revenue 1858 Dft. 11
D.G. to Cons. 8th June

No 748

Extract Minutes of Hons:
Dft 3d June 58.

From the Commissioner of Forests 2/20th
June /58 & No 1022 in Cons. 16 July

From the Govt. Botanical Dept. 25
Dft. 20 Nov. & Dec 1857

Sanction certain grants
of money for carrying on the
plantations on the Neilgherry
Hills and authorizing the framing
of a set of rules for the preserva-
tion of the woods of the Neil-
gherries. a report called for
as to the extent of the Estab-
lishment required for the
Superintendence of the plantas.
tions and the Chief Engineers
attention drawn to certain
points in connection with
the matter.

Copies 19 ab

From Conservator of Forests 27
5th April /59 & No 604
Cons. 6 May 59 No
From Do. 28 Nov. 59 & No 2097 in
Committee of Plantations