

# MADRAS RECORD OFFICE.

Government of Madras.

*Marine* DEPARTMENT.

G.O. No.

3/8

Press

~~Mis.~~

Dated

20. 8. 1858

Not to be folded or roughly handled

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*Fort Saint George, Marine Consultation, 24th August 1858.*

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No. 9.     EXTRACT FROM THE MINUTES OF CONSULTATION in the Revenue Department, under date the 5th August 1858, No. 1086.

(*Vide* Diary, Revenue Consultation, 10th August 1858, Nos. 9 to 11.)

(*Communicating Proceeding's reviewing Reports of Operations in the Forest Conservancy Department.*)

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No. 10.     ORDER THEREON, No. 318; dated 20th August 1858.

To be Recorded.

(Signed) T. PYCROFT,  
Chief Secretary.

From H. CLEGHORN, Esq., Conservator of Forests; to the Secretary to Government, Revenue Department, Fort St. George; dated Mangalore 1st May 1858, No. 337.

SIR,

1. I have the honor to report for the information of the Right Honorable the Governor in Council that during the past year I proceeded on my first tour of inspection, traversed Mysore and visited the Depôts at the mouths of nearly all the rivers on the Malabar Coast, examining great part of the Western Ghauts with a view to ascertain the exact state of the Government Forests, their extent and capabilities. I travelled through the most wooded portions along the chain of Ghauts, ascending and descending by the mountain passes as per margin, from the Bombay Frontier down to Ponany. I afterwards went across the Anamallay Hills and round the slopes of the Neilgherry Hills. I also made a circuit of the Wynád and twice visited the Conolly Plantations at Nellumboor,

*Anisy.*  
*Arbyle.*  
*Boon.*  
*Sumpajee.*  
*Perambady.*  
*Sissipara.*  
*Tambacherry.*  
*Palghaut.*  
*Segoor.*  
*Conoor.*

being altogether eight months absent from the Presidency.

2. As I have already submitted my views at length on several topics in accordance with the instructions of Government, such as

Jackatallah Plantations.  
Neilgherry Woods.  
Ootacamund Garden.  
Anamallay Forests.  
Canara Forests.  
Streeharricottah Jungles.  
Price of Timber.  
Memorandum on Gutta Percha.

I shall here confine myself to a summary of my observations on the Forests generally and of the operations of the Forest Department during the first year of its existence, mentioning the further measures contemplated when it is in a state of more complete organization.

3. In the beginning of the century, an immense almost unbroken forest covered the Western Ghauts, from near the water shed to the most elevated ridges, left to nature, thinly peopled, abounding in wild animals, and all the higher portions without exception covered with timber, and now the passing traveller looking down from the higher peaks of Coorg or Malabar, conceives that an inexhaustible forest

See { *Dr. Hove's Travels* 1786.  
*Buchanan* 1801.  
*Lord Valentia's Travels* 1804.

lies below him, but as he descends the Ghauts he finds that the best timber has been cut away and that the wood contractor is felling in more remote localities. I speak especially of teak, blackwood and poon spars which are every year becoming more scarce in accessible situations. The practice in this country has been the converse of that in Europe where the soft wood is thinned out and the hard wood left. Here the valuable kinds are removed and the scrub left. By one of these authorities, burning the jungles was recommended as a sanitary measure, and to diminish the number of wild animals, but circumstances have much changed. Now the axe of the Coffee planter and of the Coomree cultivator have made extensive and often wanton havoc, devastating a large portion of the area of the primeval Forest. The former is encouraged as endeavouring to rescue the soil for legitimate purposes (except when the timber is peculiarly valuable) but the squatter who clears without leave in one year the land which he abandons the next is punished and repressed. The profuse waste has been altogether prohibited in Mysore and the Bombay Collectorates, and is checked to a great extent in Canara, but has not altogether ceased. The exertion of the Collector and Sub-Collector have, however, been very successful in keeping under the destruction, called Coomree, caused by vagabond tribes in burning wood with the view of raising from the ashes a crop of inferior grain.

4. In Canara, the Forest Rules framed by Messrs. Maltby and Hall, and amended by Messrs. Fisher and Robinson are calculated to ensure a regulated and safe expenditure, if the subordinates do their duty, and if the trees be marked by the Conservancy establishment. In regard to Forest arrangements I may observe that Canara though still imperfectly organized is in advance of every other District. The arrangements for the Conservation of the Teak and Blackwood are so far satisfactory, but there are still difficulties as to the supply of firewood to the large towns and of house building timber in those parts where there are no auctions.

5. *Wants of Public Departments.* The requirements of the Indian Navy, the Madras and Bombay Railways, the Department Public Works, Telegraph, &c., have been unusually heavy, and the partially organized establishment was seriously crippled and curtailed for a time by the removal of officers, Overseers, Elephants and Bullocks required in the Field during this eventful year, so that the pressing Indents of various Departments have been met with difficulty and in some cases imperfectly.

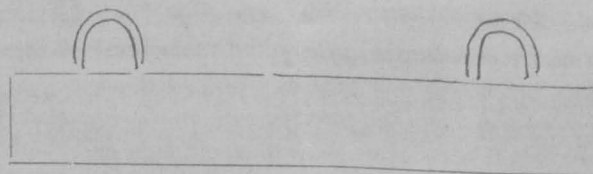
6. *The progress of the Railway* has produced marvellous changes on the face of the country, as regards tree vegetation in some districts. I may specify Palghat, the Shevaroy Hills, and the North Arcot Hills; in these the old woods have every where fallen, to meet the urgent demand for Timber, and the pressure continues to exist in the central portions of the line between Vaniembady and Palghat, at the two extremities the supply has been completed.

In the Official Road Book (published not many years ago) opposite Walliár we find this remark "Dense jungle, beware of Elephants," but in looking from the staging Bungalow, the traveller sees several tentative lines of Rail each 200 yards broad and so extensive a clearing of the neighbouring Forest that no Elephant would easily find a cover. The encircling hills formerly crowned with timber are now to a considerable degree laid bare. These changes so far as I can learn have been the gradual result of unrestricted cutting, but much aggravated during the last few years, in connection with the enormous demand for Railway sleepers, and for the Department Public Works. In the contracts which have been made for the supply of the Bombay Railway, one and a half Rupee has been charged per tree. In some contracts for the supply of the Madras Railway 3 or 4 Annas has been the seignorage per sleeper according to the kind of wood and the facility of transport, and with the permission of Government I would recommend that at least 3 Annas be invariably paid.

7. In other places and from other causes wasteful cutting has been observed to a less injurious extent. Lieutenant Beddome's report on the Pulney Hills, communicated by Government to the Madras Journal of Science, describes the devastation which has been committed there in the formation of plantain gardens. The Green Hills have been stripped of their woods and much of their beauty has departed. The reckless cutting there, however, has been vigorously checked by the Collector under orders from the Government.

8. *Slovenly felling.* The axe formerly in many parts was laid to the trunk one yard from the ground, while a further waste took place from diffuse hacking over a broad surface, this unnecessary loss of timber has been prohibited by a printed Circular enjoining all contractors as well as Forest employeés to cut within  $1\frac{1}{2}$  foot of the ground, otherwise the contractors are not paid.

9. *Wasteful trimming.* The former plan of cutting logs by which one half the timber was wasted is now obsolete, I have only seen one or two specimens, and I hope that dragholes may be



altogether dispensed with, by an improved application of ropes, and the introduction of sling carts, &c. The method of trimming logs so that they may fit carts in length and width is still prevalent in many parts but is giving way to a better system. The old state of things continues only at a distance from check and control, or where there are peculiarities of tenure and few facilities of communication as in the Wynaad.

10. *Proposed system of operations.* The trees are classified according to size.

1st Class 6 feet in girth.

2nd do.  $4\frac{1}{2}$  do.

3rd do. 3 feet and upwards.

4th do. under 3 feet; seedlings.

It is proposed that in every Forest that is to be worked, all 1st class trees be marked, and such a proportion should be cut down as will be naturally replaced by those of the 2nd class. This is clearly a sound principle, and if carried into practice will prevent the exhaustion of the Forests. It would be obviously impossible to fell and remove  $\frac{1}{4}$  of the trees of the 1st class in every district. Therefore to facilitate the execution of this principle, it is necessary to divide each Assistant's range into six divisions, one of which only shall be worked at one time. These divisions should be formed as much as possible in accordance with the Geographical features of the District, and the Forest operations should be confined to the District having the largest quantity of ripe wood.

11. *Saving of Fragments.* In my visit to the Anamallay and Wynád Forests, I found the larger branches, tops and butts left on the side of the road, or in the place where the tree was cut, exposed to the heat of the sun and to the annual fires. I desired that all such pieces as would bear the expence of removal should be brought out of the Anamallay and Heggadevincottah Forests, and that no wastage be allowed in future. The importance of saving every foot of Teak (at a time when Government has been put to great shifts for its own requirements) has been strongly impressed upon every member of the Department. I am also very anxious that the use of this timber should be disallowed for common purposes, as Camp Furniture, Hospital Almirahs, Accountant's Boxes and the like.

12. *Auction sale of Timber.* It having been considered desirable that an auction sale of timber unsuited for naval purposes (tops, bottoms, slabs and side pieces) should be held at the foot of the Anamallay Hills, Captain Hamilton, the late Superintendent, was directed to make the arrangements. Great exertions were made by that Officer, and when the Timber had been collected, every publicity was given regarding the sale. Before the auction took place Captain Hamilton was removed on account of the paucity of Officers with his Corps, and the duty devolved on his successor Lieutenant Beddome. The result proved satisfactory; the account rendered shews as follows:

|                        | Rs.   | A. | P. |
|------------------------|-------|----|----|
| Amount realized ... .. | 3,391 | 5  | 8  |
| Deduct charges ... ..  | 189   | 6  | 4  |

Leaving a net profit of Rupees ... .. 3,201 15 4

Taking the average prices obtained, the timber sold at one Rupee the Cubic foot.

In this Forest this year, after the Bombay Marine were supplied, the better logs were selected for the new Jail at Salem and the Trichinopoly Barracks, while the fragments sold by auction were greedily bought by the general trader, by the Railway Department for doors and windows and by a Native Surgeon for his Dispensary building at Poolachy. In like manner wastage has been disallowed in cutting Teak for the Military Buildings at Bangalore.

13. *Teak.* This invaluable wood has received the special attention of the Department, and I may say has occupied at least two thirds of my own time during the past year. Along the whole length of the Malabar Coast from Goa to Cochin, there is now very little of this wood in a ripe state on Government land below the Ghauts, and there are only three localities above the Ghauts where I found Teak in abundance and of good size, viz.

1st. The Anamallay Forest in Coimbatore.

2nd. Wynád and Heggadevincottah, (partly in dispute between Mysore and Malabar).

3rd. Goond Tableau, North Canara; near Dandellie. I shall briefly notice the chief points connected with these Forests, which stand in the order of their respective value.

The Anamallay Forests have been the subject of annual Reports to Government since 1848, when their importance was first declared by Captain F. C. Cotton, (Madras Journal), and as Captain Michael's Reports have been published in the Madras Government Records, I will only now allude to the recent changes and improvements in management of this Forest effected during the past year. After the removal of Captain Hamilton, Lieutenant Beddome, Travelling Assistant, received charge. He was in the immediate neighbourhood at the time of the vacancy.

An additional Overseer sanctioned.

The Timber slip repaired by Wuddur contract at an expence of Rupees 500.

The Bridge at Machenackempollium has been rebuilt, much required for the transport of wood eastward from Anamallays.

The Road from Colungode has been repaired, several nullahs bridged to facilitate the cartage to Ponany.

The Overseer's house purchased.

Six Sling Carts were made up by Mr. Ross, Railway Engineer.

Arranged Dépôt at bottom of slip.

Site selected for Overseer's house at Poolachy during the unhealthy months.

I may here mention that the prospective supply of teak (roughly estimated at the rate of the present requirements) from the Forest now rented from the Colungode Numbody will not apparently exceed 15 years. This is a serious consideration, as it is the only forest from which long planks suitable for a Man-of-war can be procured. I have in view a scheme for consolidating the table land of the Anamallays, that part belonging to Government as well that rented from the Colungode Numbody into one Government Forest, which should be a reserve in perpetuity for the Indian Navy, and where planting operations should be systematically carried on. This, however, will form the subject of a separate communication.

The working Establishment of the Anamally Forest has always suffered very severely from sickness, and considering the large number of Employés, I recommended to Government the location of a Medical Officer. Unfortunately Dr. Drew was removed by death before joining, and as the Inspector of Jails disapproved of the introduction of convict labour into the Forest for fear of the escape of the Prisoners, I have not again asked for the services of a Medical officer, more especially as the establishment of a Dispensary at Poolachy under Native surgeon Kanagaroyn will be of much importance to the Department, and an adjacent piece of ground has been allotted for the Overseers.

14. *Wynaad and Heggadevinctollah Teak.* The Forests on the borders of Mysore and Malabar are of great value and stand second in importance. I went through part of these Forests, in company with Captain Pearse, Superintendent of Astagram, which are about 40 miles long by 30 broad, and believe that they will supply 2000 Bandy loads annually (or say 40,000 cubic feet of Teak) without apparently injuring the resources of the Forest. There being no cultivation and a very scanty population, and the timber consequently not being required for local purposes, I would strongly urge that this should be considered a reserved Forest. From the situation and natural slope of the country, the Timber must be carried eastward, and will be extremely valuable for Military purposes in Bangalore. The new Barracks are at present being built of this Teak. It is probable that this Timber will come into use also to meet the increasing demand at Ootacamund. It is much to be regretted that no means of transport exists by which the crooks and other Naval Timber found in this Forest can be conveyed to the coast, where they would be extremely valuable. The expense of carriage by the usual route to Mysore and Manantoddy and down the Peniah Ghaut to Tellicherry is altogether prohibitory. The average price of teak at the quarterly auctions held at Mysore has been almost exactly the same as at Anamallay, about one rupee per cubic foot. I have experienced great difficulty in obtaining exact information as to the extent, tenure, revenue and productions of this Forest, partly on account of its being little frequented from the fear of wild animals. In no place have I seen such abundant traces of Elephants. However the authorities at Astagram and Coorg and the Commissariat officer at Hoonsoor all drew my attention to the terrible waste of teak which occurs there, the timber being carted out in large quantity by three roads under the plea of passes from two Devasthanams, the limits of whose Enam land, I have no means of ascertaining. A particular Survey, well drawn lines of demarcation between Mysore, Malabar and Coorg, and an improved system of regulations are required for placing this Forest on a proper footing, and securing an uninterrupted supply of this valuable wood for the future. I think this duty would be best performed by an officer of energy and character, who would work well with the neighbouring authorities, and who would constantly traverse the Forests (as was done at Anamallay by Captains Michael and Hamilton) till the system of robbery and spoliation is suppressed. I would also strongly urge the location of a European Magistrate in the Wynaad, who would enforce the observance of regulations, and see to the management of the roads, Ferries, Police, Revenue, Conservancy, &c., in that remote locality.

15. *Canara Teak.* Is of much smaller scantling generally than that of Wynaad. It has the advantage of water carriage to the Coast, not possessed by the two last, but it has for some years been chiefly obtained for Naval purposes from the banks of the *Kalta Nuddee* where it emerges from the Soopah Hills, and the supply has gradually been sent down from more distant

localities, as in Malabar, where the Teak is now cut by the Teroopaud of Nellumboor just under the Neilgherry Peak. Above the Ghauts in the Soopah and Soondah Talooks, there is a very considerable supply of smaller wood suited for the Engineer requirements at Belgaum, Dharwar, Lingasoooor, &c.

16. *The Goond Forest*, however, is the chief remaining reserve in Canara. I saw here several thousand trees on an elevated plateau with precipitous sides, the trees are well grown and ripe, conserved by their inaccessible position, which has been rarely visited by Europeans. The Teak here is scarcely intermixed with any other tree, (the Billi Nundee excepted) and grows on slaty rock, in many places having very steep gradients. The early working of this valuable Goond Forest is of the first importance, being much threatened with fire; some trees are already scorched at the root and much deadwood lies in the Forest.

The question for consideration is, how to get out the wood? whether by a rocky nullah with at least three small falls, or by making a road of 23 miles. This is a question I cannot venture to answer, but I may mention that the Collector Mr. Fisher and Dr. Gibson I believe incline to improving the road, whilst Colonel A. F. Cotton and Lieutenant Taylor, Indian Navy, recommending the blasting of the rocks in the Nulla. I ordered an experiment to be made of floating 20 prepared Logs of Jungewood, branded "Goond" at the height of the flood. These were despatched on a given day but they never reached Sedashegur, having been caught in the rocky turnings of the river.

The importance of removing the valuable Teak of this Forest at an early date is so great that I would suggest that an Engineer Officer be deputed to visit and report. Captain G. W. Walker, Engineers, shortly expected from England is one of the few Europeans who have visited this remarkable place, and has I am told a knowledge of its requirements. If Government think proper to direct that officer to inspect this locality, Mr. Müller would arrange to accompany him.

As the Goond is inaccurately delineated in the Survey Maps, I have the pleasure to forward a rough Survey of my industrious Assistant, Mr. Müller, with the tracing of the roads he suggests for working this Forest. I would recommend that it be lithographed and say 100 copies struck off. When the Forest is being worked, I have instructed Mr. Müller to be present at the marking and girdling of the trees. I have reason to believe that proper classification and selection of the trees have not hitherto been made in the Government Forests. First class trees, i. e. 6 feet in girth and those commencing to decay only are to be removed at the first cutting.

17. *Teak Plantations.* I visited the remains of small teak plantations at Honore, Ankola and Sedashegur, which had been superintended by Colonel Gilbert in 1804; the trees are very poor specimens of teak, the soil is laterite and the exposed situation of the sea-shore is most unsuitable, a worse locality could scarcely have been chosen, the only possible excuse for so grave a blunder is that the peculiar requirements of the Teak tree were not known in those days.

Up the Black River, at Tarea Mullapoor is a plantation of recent date. The late Mr. Poulton commenced this in 1854, there are I believe 2,000 remaining of 7,000 trees put down.

18. *Conolly Plantation.* The fine and promising plantations on the banks of the Nellamboor River which were commenced about 15 years ago by the late lamented Mr. Conolly, Collector of Malabar, are worthy of a full and separate Report, which will be a Historical Record of what can be effected by artificial means. These plantations will be an important source of supply in future years. They are under the immediate charge of Chatoor Menon, a Nair, who conducted all the preliminary experiments under Mr. Conolly's orders and who has watched the young trees from the day of germination.

I propose that two Duffadars should be sent, one to the Anamallays, and one to North Canara, to introduce the Conolly system of plantations into those districts.\*

19. *Poon Spars.* These are becoming very scarce and consequently are perhaps more valuable than teak. Young ones especially such as are in accessible places are most carefully preserved. Strict orders on this subject have been given in Coorg, Mysore and Canara. In one

\* NOTE.—Since writing this I find that the Nair Subordinates are unwilling to leave their native place. One has been found ready to proceed to the Anamallays, but none is willing to proceed to North Canara on any terms. Therefore one of the Canara Establishment will be detached for instruction to Nellumboor.

case which came within my observation, several valuable spars were found on a bridge, the total estimate of which was 250\* Rupees. This incident will illustrate the importance of officers in the Department Public Works, Telegraph, &c., making themselves acquainted with the description of timber available and suitable for their wants. I may also mention that the Superintendent of Coorg has received several tenders for the supply of Poon spars and other timber at the distances of at least 3 miles from the Soolia river, showing the scarcity of such wood and the readiness of the Mangalore Contractors to carry it several miles to the nearest water carriage.

20. *Blackwood.* This valuable wood has risen much in price. Indents were received during the year both from Madras and Bombay Gun Carriage Manufactories each for 5,000 cubic feet. This tree was formerly given to applicants at 3 Rupees each, but with the concurrence of the Collector of Canara I have disallowed this practice. There is not much blackwood remaining in the Anamallay Forest, but there is a considerable quantity in the escheated forest of Chennat Nair, and it is abundant in the Wynad and Coorg. In consequence of its increasing value I have given instructions for an experimental sowing this year at Nellumboor.

21. *Sappan Wood.* This important dyewood has engaged my attention. It appears to grow with great luxuriance in South Malabar and is cultivated rather extensively by the Moplahs who plant a number of the seeds at the birth of a daughter. The trees require 14 or 15 years to come to maturity and then become her dowry. I saw more on the Banks of the Nellumboor River than any where else; why it should be there in particular is not obvious, as Malabar is generally uniform in its character. A better system of cutting and cultivating the Sappan is desirable, and the dyewood is damaged I believe by being allowed to float in salt water. The quantity raised is not great, but it grows without any care, and from the facility of water carriage to Calicut, I think that the district is very favorable for its extension. I sent a packet of seeds to Canara for experimental sowing on the banks of the Black River.

22. *The Sandal wood tree in Mysore.* Canara, Coimbatore, Salem, and a little in North Arcot has received much attention. It would appear that the spontaneous growth of this tree has increased to a considerable extent, and it seems certain that with the vigilant supervision of local officers and slight assistance to Nature in clearing the heads of young plants which are often matted down by strong creepers an addition might accrue to the revenue of these provinces. From information received from the late Assistant Surgeon Drew, I was enabled to communicate to the Commissioner of Mysore the existence of a large band of smugglers in an unfrequented path near the Carcoor Pass, who were captured by the Mysore Horse to the number of 78 with the Sandalwood tied on their backs. This seizure effectually stopped a long continued system of robbery on the Malabar frontier.

23. The "*Gutta Percha* tree of the Western Coast" so called, has been traced from Coorg to Trevandrum. All the reliable information procurable has been condensed into a Memorandum, and a large sample has been transmitted to England for report, as to its suitability for Telegraphic and other purposes.

24. *Catechu.* The enhanced value of Cutt has caused an unusual destruction of the *Acacia Catechu*, which was properly restricted by Mr. J. D. Robinson to certain places in the North Canara jungles to prevent total destruction.

25. *Kino.* Two thousand trees, of the Kino tree, (*Pterocarpus Marsupium*), were seen along the roads through the Wynad notched, as delineated in the margin, for the extraction of Kino which is taken to the Coast where it meets with a ready market and is exported in wooden boxes to Bombay.

As the V shaped incision appeared to be deeper than required, the Collector has given instructions for the more careful treatment of the trees. This tree is greatly prized at Dharwar not for its exudation, but for its timber, which is extensively used in the Gin Factory.

26. *Bamboos.* Immense quantities of fine Bamboos are floated down the various rivers of the Western Coast. It is one of the riches of the Provinces. They are ordinarily 60 feet long

and five inches in diameter near the root, these are readily purchased standing at 5 Rupees per 1000, and small ones at 3½ Rupees per 1000. Millions are annually cut in the Forests and taken away by water in rafts or by land in hackeries; from their great buoyancy they are much used for floating the heavier woods as (Mutte) the *Terminalia tomentosa* and (Biti) *Dalbergia Arborea*, and piles of them are lashed to the sides of the Pattimars going to Bombay. The larger ones are selected as out-riggers for Ferry Boats, or studding sail booms for small craft.

In addition to the vast export by sea, it is estimated that two lacs are taken from the Soopah talook Eastward. The Malabar bamboo is much smaller than that of Pegu (*Bambusa gigantea*) which is 8 inches in diameter.

27. *Mode of floating timber.* It is curious to see the clever management of the Floaters who are a distinct class of persons. Rafts are of all sizes, usually longer than broad, and the logs bound together by the stringy bark of various trees, and stout branches passing through the dragholes at right angles to the log. In the centre of the raft a small hut is generally made of thatch, or bamboo lathes covered with Palmyra leaves, in this the floaters are sheltered at night. It is not usually considered advisable to float logs when the river is at the fullest, as the raft is apt to go over the bank and be stranded. Numerous logs may be seen high and dry all along the sides, and the following year the flood lifts them. At night, floats are brought to under steep banks or deep water, they are then tied to the trunk of some adjoining tree, occasionally the banks fall in and serious accidents occur.

28. *Introduction of Saw Machinery.* This has been much under consideration, there can be no doubt that it is most desirable to substitute the saw for the axe, especially when the planks are being prepared, economising both time and labor. Great efforts have from time to time been made with more or less success to induce Sawyers voluntarily to resort to the forests for employment.

As to the question of introducing circular saws to the little frequented forests the measure would be attended with this difficulty that, when the heavy machinery was conveyed to the Forest Depôt as the Elephant station in the Annamallays, it must either be carried back again at great expense or left exposed to the mischievous effects of extreme damp and perhaps to injury from herds of Elephants. At present, therefore, it seems more desirable that saw pits should be for the most part confined to the Coast Depôts, and that their management be left to private enterprise.

29. *Forges for Charcoal.* One of the difficult questions connected with forest conservancy is regarding the making of charcoal for iron-smelting. The forges in Canara are few, but in Dharwar, Belgaum, Bellary and Mysore there are many; and parties go into Nugger or North Canara to make charcoal in large quantity. They make a hole 4 feet deep, 8 or 10 feet broad, fill it with wood and cover it up. Having set fire to it  $\frac{2}{3}$  or  $\frac{3}{4}$  is burnt,  $\frac{1}{3}$  or  $\frac{1}{4}$  remains as charcoal. Not only is there great waste in the making of charcoal, but there is great waste when made, the charcoal being inferior. The Blacksmiths insist upon the wood being either of bamboo or jambay (*Inga Xylocarpa*) which is without reason, as I saw beautiful charcoal prepared by Mr. Lowry at Tuddry of the common woods.

Brice and Co., have instructed 20 charcoal burners, who use the more common kinds of wood, and turn out a superior article; they regulate the furnace by small holes, as do the Porto Novo Iron Company. Mr. Boesinger manufactures good charcoal. Dr. Forbes do. do. at the Gin Factory Dharwar. It is difficult to instruct Native Artizans in this matter, but it is hoped that the example of so many Europeans may be useful.

30. *Executive Engineers, Surveyors, &c.*, when making traces in the Ghauts or visiting secluded Forest Districts might render good service to this Department by informing the nearest Revenue officer or Conservancy employé when they see the firing of the jungles or destruction of timber.

I have received on several occasions useful information from the Chief Engineer, who has sent me Extracts from the Diaries of his officers bearing on the destruction of timber. On the occasion of making a new road or increasing the breadth of an old one, through a valuable Forest (as at Yellapoor) it would be desirable that the District Engineer should communicate with the Forest Assistant, so as to give an opportunity of removing the timber which is often rolled down the side of a Ghaut, or left to decay where it falls.

31. *Noxious Insects.* I have called the attention of my Assistants to the noxious Insects of country, the depredation of several common Coleoptera, being most mischievous rendering

In the above contracts with Mr. Ross and Messrs. Brice and Co. strict provisions are made prohibiting their felling of valuable kinds of wood, such as Teak, Blackwood, &c.

40. *Establishment of Depôts on Western Coast.* I am desirous to seeing well arranged Timber Depôts established at the mouths of the Rivers on the Western Coast, and a classification of Timber to suit the various purchasers. European Pensioners of reputed integrity will probably be found ready to take charge of these Depôts. Contractors have this year been required to separate sound from unsound timber whilst still in the water. I pointed out at Sedashegur and Hullial some desirable improvements but the operations were suspended on account of the recent disturbances. At the latter place the Depôt occupies an open space and a very large quantity of wood is scarcely safe without an enclosure. A small house for the European Overseer is also required. The establishment of Coast Depôts involves an extension of the Department not contemplated, but I believe that from the absolute impossibility of finding a trustworthy agency in the interior this is unavoidable.

41. *Additional Overseers required.* There are several localities as Pootoor in South Canara, Palghat, and the Hills South West of Vellore which require the supervision of a qualified Overseer.

I am now on my way to explore the capabilities of the first of these places which formerly yielded much timber. At the second, I believe the salary of an Overseer may be more than met from the aggregate receipts of the Walliar Jungle and the escheated Forest of Chennat Nair at present leased to Mr. Tomlinson, and at the third, which I visited a fortnight ago it is of importance that supervision should be exercised over these Hills, which the neighbourhood of the Railway has tended so much to denude. The demand for firewood has been so much enhanced by the vicinity of the rail that I have seen the roots, stocks and gnarled stems removed from the Hill side which should have been allowed to remain in order to secure a little moisture and to afford leaves for manuring the adjoining fields. Mr. Sullivan, Sub-Collector, is at all times most ready to assist in checking wasteful cuttings, but the appointment of an Overseer in his opinion is most desirable.

The tract of wood must be extensive which will cover the charge of an Overseer's salary, and therefore in several instances, I have urged the location of two talook Peons as at the top of Palamanair Ghaut, and at Devaroydroog in Mysore, the vigilance of two men during 13 months at a cost of 7 Rupees per month has produced visible results; although the Conservancy has not been adequately provided for, yet the Jungle already begins to assume a much improved appearance.

My attention has been directed to other places as Ramandroog, the Nulla Mulla Hills, the Shevaroy Hills, the Nellore Jungles, and various localities in the Northern Division. I have been in correspondence with the Collectors of those Districts, but have refrained from making any recommendations of Establishments to supervise these various pieces of Forests until I had an opportunity of personally inspecting them and judging of their requirements. I hope to visit many of these localities during the ensuing year. The great difficulty I experience is in finding suitable Overseers. The essential qualifications desired are as follows.

- 1st. Robust health.
- 2nd. Rudimentary knowledge of Forestry.
- 3d. Acquaintance with Accounts.
- 4th. Integrity of Character.
- 5th. Knowledge of Native Languages.

In addition to the absolute scarcity of suitable men, the exposure and personal risk and the low salary compared with that sanctioned in the Department Public Works have united to deter men from entering the Department, whilst the formation of the Police and Revenue Survey Establishments have attracted others whose services might have been available. Out of the large body of Europeans who have this year been sent out to India, I hope to find one or two who have the great essential of practical knowledge of woodcraft.

42. *Proposed Depôt of Books and Tools.* It has been proposed to supply a Forester's Guide and the more necessary tools to each Overseer on his appointment (See Manual.) The Conservator, as he has leisure and opportunity, spends an hour or two with his Overseers to improve their minds, and has directed the Assistants to teach the Overseers, as Medical Officers are enjoined to train their Subordinates. By adopting a system of weekly or occasional examinations, it is to be hoped that a class of Foresters superior to the present may be obtained.

43. *System of Correspondence.* Where Overseers are located or Forest operations being carried on orders are given through the Assistant Conservator in whose range the Overseer is situated, but in any case when Forest management appears to affect the Revenue or Cultivation of the District, I immediately avail myself of the advice and counsel of the Collector, and throughout I have desired to be in the position of his adviser and not as an executive trenching upon his authority.

44. *Manual of Accounts.* A Manual of Instructions for the employés in this Department, compiled by J. T. MacLagan, Esq., under instructions of Government, including simple forms of Accounts to be used, and printed circulars for the guidance of Overseers, &c., was submitted to Government on the 6th Ultimo. At this early stage of Forest correspondence, this Manual must necessarily be imperfect, but being clear and concise I believe that it will be of great use in the preparation of contracts and simplifying accounts.

45. *Proposed Herbarium of Reference.* Having received from the Royal Gardens of Kew a valuable set of named Indian Plants being duplicates issued after the publication of the Flora Indica of Hooker and Thomson, I intend to arrange these materials in a consultable Herbarium at the Presidency. It was indeed upon these conditions that I received the specimens. Such a collection is a great desideratum in the present day, when men of science frequently visit our capital, and we have not a single specimen of the collections of Roxburgh or Wight to shew, but can only refer to their description. I shall not ask Government for any pecuniary assistance except to supply paper, the cases and hereafter perhaps some manual assistance.

46. *Manual of Indian Botany.* I have the honor to enclose a specimen copy of the Manual of Indian Botany, now being prepared in compliance with the wishes of the Honorable Court of Directors.

The small amount of time which I can spare from other avocations, the bodily fatigue and exposure I undergo, and my absence from my library for great part of the year will necessarily protract the preparation of the work, but the great opportunities I enjoy of collecting materials are eagerly laid hold of, and I trust that the Manual may when completed, be a useful guide to the Botanical riches of the Presidency.

47. The expenditure on account of the Department generally has been as follows.

|                                                                                                               | Rs.    | A. | P. |
|---------------------------------------------------------------------------------------------------------------|--------|----|----|
| Salary of the Conservator, the Assistant in charge of the office at the Presidency and the establishment..... | 17,373 | 0  | 7  |
| Salaries of travelling Assistants and their establishments.....                                               | 6,847  | 10 | 4  |
| Contingent charges.....                                                                                       | 3,868  | 14 | 4  |
|                                                                                                               | <hr/>  |    |    |
| Rupees.....                                                                                                   | 28,089 | 9  | 3  |

The income, expenditure and accounts of the Anamallay and Canara Forests from 1st July 1857 to 30th April 1858 will be submitted separately and as soon as practicable.

the rafters a mere honeycomb. The importance of immersing the logs of all woods except teak in solution strongly impregnated with mineral salts as in Baurgerie's process has received my attention.

32. *Provisions for the Ryots' wants.* It is most important that whilst strict supervision is enforced in the Government Forests, Conservancy should not be carried so far as to interfere with the supply of Agricultural Implements to the bonâ fide ryot, or to obstruct the application of leaves and branches for Alkaline material to fertilize his fields. In North Canara the ryots have their *Coomuc* 200 yards above or 100 yards below Ghaut, enclosed pieces of land available for the use of their fields which is a very good arrangement when allowed to such estates as have been surveyed. But I do not recommend this to unsurveyed estates because it leads to fraudulent abuses. It is surprising how strictly these *Coomucs* are conserved.

33. *Mercantile classes buy wood.* I have already ruled in cases referred for decision that the ryot is from old custom entitled to wood for his plough, &c., but that the sowcar who wishes to make a cradle or a Palanqueen or requires wood for house building, &c., must pay for the material. There are periodical auctions at nine places in Canara where the sowcars can suit themselves, and an extension of the system so as to have talook Depôts is under consideration.

34. *Coffee.* The successful cultivation of the coffee plant is extending remarkably, and applications for grant of Forest land pour in upon the Revenue Authorities. In the Sisipara, Perambady and Sumpagee passes vast clearings are being made. In the Coonoor Ghaut six large plantations may be seen, and there are very large and numerous holdings, above 30, in the Wynâd, which from year to year will increase. The plant has succeeded admirably in Mysore, and there are patches of cultivation in Madura and even in North Canara. I may observe that in granting Forest land, it seems to me that while the destruction of Forest (Teak, Ebony and Poon spar excepted) for *bonâ fide* cultivation may be considered legitimate, yet the preservation of the fringe along the crest of mountain ridges is of special importance in a climate point of view, and this should never be given over to the axe. As these mountain crests are not suitable for the growth of coffee, the restriction cannot be complained of.

I here beg to annex Extract of letter to the Collector of Coimbatore dated 2d October 1857, which contains my views in reply to a reference upon this important matter.

"The higher Sholas clothing the Ghauts on both sides are of the utmost importance, and the climate is believed to suffer the greatest detriment from their removal. I would therefore suggest that the high-wooded mountain tops overhanging the low country (such as Hoolicul) should be preserved with rigid care, the Forest there should not be given over to the axe, lest the supplies of water may be injured. It is the opinion of many persons, in which I concur, that the vast clearings which have taken place have had a share in producing the irregularity of the monsoon which has of late years been so much complained of in Coimbatore. In order that the course of the Rivulets should be overshadowed with trees, I conceive that the hills should be left clothed to the extent of about  $\frac{1}{2}$  of their height from the top leaving  $\frac{1}{2}$  of the slope and all the valley below for cultivation, this available portion would far exceed in extent the higher ridges which should be conserved."

It seems to me that the immense tracts of virgin Forests in the rich valleys of the Koondahs are eminently suited for coffee cultivation, and the removal of the Forest there would not be attended with the same disadvantage as on the Eastern Ghauts, where the drier climate does not admit of the same effort at speedy reproduction.

If it be desirable to lay down a general rule in regard to the limits of elevation within which clearing for coffee cultivation should be allowed, I would specify from about 2,500 to 4,500 feet, this being I understand the extreme range within which coffee planted on a large scale is found to thrive.

It is important to give every facility for the cultivation of coffee, but it is desirable to limit the clearings of those situations where this peculiar shrub can be grown with advantage. I have observed some clearings, where the ground is so precipitous that it is extremely improbable that the soil can last many years.

It may be urged that in general, people are sufficiently alive to their own interests to select only those sites which are in every way eligible, but from the inexperience of many who embark in coffee planting, it seems desirable to lay down some rule. I need only point to the vast amount of land cleared and subsequently abandoned both in this country and Ceylon, either before or after planting.

It is to be regretted that independent of considerations of climate, Coffee cultivation should find a place in those parts of the forest where the timber is of a *superior* description, and which at present Government is put to great shifts to obtain for public purposes.

I would therefore add, that in places which are accessible and which contain very fine timber, it seems desirable that one of the Assistants in my Department, should have an opportunity of removing such timber as is available, or of marking it, with a view to its being taken at a valuation by the occupier, should he desire to do so. I especially allude to 1st Teak, 2nd Blackwood, 3d Vengay and 4th Kurrah Murdah.

35. *Tea.* I think it right to bring to the notice of Government the thriving condition of a Tea Plantation near Coonoor belonging to Henry Mann Esq., who has devoted much attention to it and has spared no expense. This is a very interesting experiment. The best varieties of the shrub were imported from China in 1854, the seeds having been given to Mr. Mann by Mr. Fortune on his return from the Tea growing Districts. There are now about 2,000 vigorous plants, and to ensure success it seems only necessary to procure a supply of workmen to teach the manipulation and separation of the leaves.

36. *Difficulty of procuring Assistants.* The removal of Captain Michael to Hyderabad followed by the withdrawal of Captain D. Hamilton and the death of Assistant Surgeon Drew put me in a difficulty for some time. The two first were most zealous and willing Assistants, and the last from his patient habits of enquiry and Botanical knowledge gave promise of peculiar usefulness. The vacancy has been filled by Lieutenant Beddome a young man who has a good knowledge of the vegetable kingdom, and was recommended to Government solely on account of his powers of observation and description, he is an excellent explorer.

I have issued a "General instruction to the Forest Assistants in a circular and try to persuade each to keep a small arranged Herbarium of Flowers and Fruit bearing specimens of *all Forest trees and their varieties* with notes. By inviting them to do this, I trust some will become at least *Observers*, if not *Botanists*."

In this Country there is no class of persons who have made it their business to attend to Forestry as a branch of Rural Economy, and of all those (about 200) who applied for employment there was not one who could be considered an intelligent Forester, except Mr. McIvor Superintendent of the Ootacamund Garden. Mr. S. Müller, Assistant Conservator North Canara, who had been early trained in the Black Forest of Germany, and Corporal Hall who had been a Forester in the Midland Counties of England. Most of the others have to be paid to learn the outlines of their duty, and generally speaking those who have been Soldiers or Artificers are the most teachable, and give least trouble. They have been well disciplined and obedience comes natural to them.

37. *Contractors.* Instead of finding a class of persons possessing knowledge of the Timber trade, there is only a multitude of rogues ever ready to tender for Contracts to receive advances and to appropriate them. On the Western Coast there are a few Moplahs about Calicut and Prubhoos at Mangalore who possess Elephants the only efficient means of dragging Timber. These last take gangs of Coolies to the Coorg and Malabar Forests and show considerable energy in forming temporary dams and floating down Poon Spars, &c.

38. *Sub Conservators in Canara.* The two Subordinates I found in North Canara under Mr. Müller (Mr. Gilbert and Mr. Buonaparte Rodrigues) appeared to be much too sedentary in their habits, deputing Peons into the Jungles when they should have gone themselves and the like. The former has been removed from the Department on account of incapacity, the latter is suspended under an enquiry for receiving bribes.

39. *European Contractors.* Two Contracts have been entered into with Mr. Ross, Resident Railway Engineer, Coimbatore, whereby he has been permitted by his first contract to cut sleepers of certain specified woods in the Forest near the foot of the Anamallay paying quarterly seignorage at the rate of 3 Annas per Sleeper, and by the second he was empowered to fell 2,000 trees in the Walliar Jungle, at the rate of Rupee 1-8 per tree.

Messrs. Brice and Co. an enterprising Firm tendered for and obtained permission to fell 2,500 junglewood trees within the Forests of Ekagolly and Codloogaddey in the Soopah Talook North Canara for supplying Sleepers to the Bombay Railway Company, and agreed to pay Rupees 2,500 (half in advance) being at the rate of 1 Rupee per tree, and on exportation a further seignorage of 8 Annas per tree, and also such quantity of bamboos as they may require to float down the 2,500 trees at the rate of Rupees 5 per 1000 bamboos. This contract is to extend over a period of two years closing 31st December 1859.

*1. The Diary, Review in Consultation of the Secretary  
of the Revenue Department.*

No. 1086.

Extract from the Minutes of Consultation under date the 5th August 1858.

Read the following letters from the Conservator of Forests.

Submitting a summary of his forest operations during the past official year. (Here enter 1st May 1858, No. 337.)

Submitting a detailed account of the tours of the two travelling Assistants in this Department and the reasons for the appointment of a Financial Assistant at the Presidency. Also forwarding a corrected duplicate of his summary of Forest operations in lieu of that dated 1st May 1858. (Here enter 30th June 1858, No. 384.)

1. The first of the papers recorded above, contains the Report of the Conservator of Forests on his first tour of inspection. His general route is thus described at the outset :

" I traversed Mysore and visited the (Timber) Depôts at the mouths of nearly all the rivers on the Malabar Coast ; examining great part of the Western Ghâts with a view to ascertain the exact state of the Government Forests, their extent and capabilities. I travelled through the most wooded portions along the crest of the Ghâts from the Bombay frontier down to Ponany, ascending and descending by the Mountain passes. I afterwards went across the Anaimalai Hills, and round the slopes of the Neilgherries ; I also made a circuit of the Wainâd ; and twice visited the Conolly plantations at Nelumbâr ; being altogether 8 months absent from the Presidency."

2. The Report has been perused by the Government with much interest. It is unnecessary to review the whole in detail ; the points which require special notice are particularized below.

3. After noticing the extensive and often wanton havoc and devastation caused by the axe of the Coffee Planter and the Kumari Cultivator, Dr. Cleghorn states that the profuse waste has been altogether prohibited in the Mysore and Bombay Collectorates, and is checked to a great extent in Canara, " but has not altogether ceased, though the exertions of the Collector and Sub Collector have been successful in keeping under the destruction caused by vagabond tribes in burning wood with a view to raising from the ashes a crop of inferior grain." The Government

\* Para. 3.

resolve to communicate this para.\* to the Collector of Canara (through the Board of Revenue) ; and that officer will be good enough to furnish a brief report of the result of his exertions for the repression of the system of kumari cultivation. The conservancy system in Canara is stated to be in advance of every other District though still imperfect ; a set of forest Rules are said to have been framed, which are calculated to ensure a regulated and safe expenditure, provided the subordinates do their duty. The Government will be glad to see a copy of these Rules.

Indian Navy.  
Madras Railway.  
Bombay do.  
Department P. W.  
Telegraph Department.

4. Para. 5. The requirements of the various Departments have been unusually heavy, and owing to the withdrawal of the employes and matériel of the Forest Department on account of the Mutinies, the latter has scarcely been able to meet the demands made upon it, so that the operations of the past year do not afford a fair criterion of the prospective effectiveness of the Forest Department.

5. Para. 6. Speaking of the marvellous changes in the face of the country as regards Tree vegetation, produced by the progress of the Railway, it is mentioned that a traveller looking from the staging Bungalow at Wâliâr, sees several " tentative lines of rail, each 200 yards broad." The Government suppose that Dr. Cleghorn refers to the first attempts at opening the line through the Palghaut gap some 2 or 3 years ago, and which Colonel Pears noticed at the time. The question of the payment of seignorage for Sleepers also referred to will be disposed of elsewhere.

*Ms. 1086.  
In No 299.*

6. Para. 7. The Collector of Madura will be called upon with reference to this para. to state whether he has succeeded in putting an entire stop to the devastation formerly caused on the slopes of the Pulny Hills by the formation of plantain gardens.

7. Paras. 8-9. The improved methods of I. felling, II. trimming which have been introduced are satisfactory; though Dr. Cleghorn mentions that in some places "peculiarities of tenure" have operated as an obstacle to the introduction of improvement. In what way these peculiarities of tenure operated disadvantageously should have been explained.

8. Paras. 10-12. The proposed system of operations and the measures taken to economize fragments, and pieces of timber unsuited to naval purposes are approved. The auctions described in para. 13 should be systematically held: at the end of para. 4 mention is made of the difficulties which still exist as to the supply of firewood to the large towns; if a regular supply of timber were ensured to the people by means of these sales, it would go far to prevent clandestine cutting; and judging from the result of the sale of teak held in the *Anaimalai* Forest they are likely to be a source of no inconsiderable gain, for even the fragments were greedily bought by the general trader, the Railway Department, &c.

9. Para. 13. Teak. This invaluable wood, the Conservator states, has received the special attention of the Department. There is said to be very little ripe teak (on Government land) below the Ghâts, along the whole length of the Malabar Coast\*, and there are only 3 localities above the Ghâts where it is found in abundance and of good size, viz.

I. The *Anaimalai* Forest.

II. The *Wainád* and *Heggadevankota* Forests; partly, Dr. Cleghorn observes, in dispute between Mysore and Malabar.

III. The *Gund* Plateau in North Canara.

Sundry changes and improvements in the management of the *Anaimalai* Forests which have recently been effected are detailed; and with reference to the further development of the valuable resources of these forests, the Conservator notices that the supply of teak from the forest now rented from the *Kolangód Numboddy* (Nambúdrí?) will not last more than 15 years; "which is a serious consideration as it is the only forest from which long planks suitable for a man-of-war, can be procured"; Dr. Cleghorn has therefore conceived a scheme for consolidating the table land of the *Anaimalai* range, that belonging to Government as well as that rented, into one Government forest, to be systematically worked, and held in reserve in perpetuity for the Indian Navy. It appears probable that the forest now rented is the Janmi property of some Malabar chief, with which it is not likely that he could be induced to part, so that it is not clear how such an arrangement as the one proposed could be carried out, except by means of a money compensation. In the separate communication which the Conservator promises on the subject full particulars of the renting system should be given, and such peculiarities of forest tenure as may come under Dr. Cleghorn's notice.

10. The *Wainád* Forests adjoining Mysore are of great value, and stand second in importance. They are capable, Dr. Cleghorn roughly estimates, of supplying 2000 bandy loads or 40,000 cubic feet of teak annually, without permanently injuring the resources of the forest. But at present no means of carriage exist, by which "crooks," and other timber required for Naval purposes can be conveyed to the coast, where they would be extremely valuable. This paragraph will be communicated to the Chief Engineer, who will after conferring with Captain Francis (who is the Government believe, well acquainted with the locality) suggest a remedy, and show what line of communication could be most easily opened to the sea, or to any river navigable from where the timber could be conveyed to it, to its mouth.

11. In the same para. Dr. Cleghorn mentions that he has experienced great difficulty in obtaining exact information as to the extent and tenure of these forests. It is not stated whether the required information was sought from the Collector of Malabar. The Government are of opinion that the authoritative determination of these tenures is an important preliminary towards the establishment of any system of conservancy in the forests, and they understand that a report on the subject is now about to be submitted to them by the Board of Revenue with especial reference to *Wainád*.

From the Com. of Mysore 16th Jan. 1853.

do. Do. 16th February 1853.

Conservator of Forest 23rd January 1853.

Secretary Board of Revenue 1st April 1858.

Extract Minutes Consultation 3rd May 1858, No. 564.

11. In the same para. of the report, Dr. Cleghorn also alludes to a subject (before noticed in the correspondence respecting the Mysore and Malabar boundary dispute) which demands immediate and careful attention. He states that the authorities at Ashtagrām and Coorg, and the Commissariat officer at Hunsūr, all drew his attention to the terrible waste of Teak which occurs in the disputed tract, "the

"timber being carted out in large quantities by three roads under the plea of passes from two Devasthānams the limits of whose Inām land I have no means of ascertaining."

If these Devasthānams are in the Company's territory there would be no difficulty in prohibiting all cutting until the Dharmakartā of the Pagodas shewed title; and if this was deemed good, measures might be taken to prevent rigidly any cutting except within the limits assigned. But advertent to the scanty means of supervision in these remote regions possessed by Dr. Cleghorn, the Government doubt whether it would be found practicable to confine the felling within proper bounds; the better course would be to prohibit any such felling by the Pagoda people; and to fix an equivalent in money to the value of the timber which enquiry may shew they have a right to; if the Devasthānams are found to be within the Mysore Territory a communication of the views of Government will be made to Sir Mark Cubbon. The arrangement of the disputed boundary is now before Government. When the difficulty is solved, the Government will be prepared to consider the proposition of the Conservator as to an officer being specially appointed to that tract of country. They remark that the timber may be essentially serviceable for the Barracks and Riding School at Bangalore, and even for the Military buildings at Jackatalla.

12. Para. 19. Dr. Cleghorn here states that a particular survey, and well drawn lines of demarcation between Mysore, Malabar, and Coorg, are, among other desiderata, necessary for securing an uninterrupted supply of teak for the future and placing the establishment for the conservancy of this forest on a proper footing.

13. As to the suggestion following, that a European Magistrate should be permanently located in *Wainád*, the Government conceive that much benefit would result from such an arrangement. Independently of the fast increasing European population, which renders the presence of such an authority desirable, the residence of an European officer in regions so inaccessible and so seldom visited as *Wainád*, would not only enforce the observance of conservancy regulations, but keep the Government au fait as to the real wants and state of this important district; the present casual visits of the Collector are quite insufficient to do this. This question is also before the Government, for consideration.

14. Canara teak is stated generally to be of much smaller scantling than that of Malabar; the chief remaining reserve is a forest on the *Gund* Plateau the trees on which now well grown and ripe, are said to be conserved by their inaccessible position. Dr. Cleghorn

describes it to be of primary importance that this forest should be immediately worked, as it is much threatened with fire. There are two ways by which the wood may be got out, either by a rocky water course with at least 3 small falls, or by making a road of 23 miles. The Collector, and Dr. Gibson, the Conservator of Forests under the Bombay Government, incline to the latter course, whilst Colonel Arthur Cotton and Lieutenant Taylor, I. N. recommend that the rocks in the water course should be blasted. Dr. Cleghorn submits a map of the Forest surveyed by his Assistant Mr. Müller, in which the roads necessary for the working of the Forest are suggested. And he proposes that an Engineer Officer be deputed to visit the locality and report on the best mode of getting out the wood; Captain Walker of the Engineers, shortly expected from England, being one of the few Europeans who have visited the spot, and who has a knowledge of its requirements, might the Conservator thinks be directed to make an examination. The Government are fully alive to the importance of this *Gund* Forest, and as Captain Taylor of the Indian Navy is now surveying the *Kala Nuddee* near *Sedashegur*, that officer will be requested to afford the Government any information as to the accessibility of these Forests that it may be in his power to give.

15. With reference to Doctor Cleghorn's request that 100 Copies of the Map of the Forest now laid before Government should be struck off, it is observed that 200 copies of the Report have been asked for; these and a similar number of the maps will be printed and lithographed at once.

16. *Teak plantations*, p. 17 seqq. Colonel Gilbert's plantations commenced in 1804, are generally failures, owing to the injudicious selection of site too near the sea. The Conolly plantations, on the other hand, are in a very promising condition; and the Government recognise the very great importance of restoring the ancient and valuable forests of Malabar and will be glad to receive the report preparing by Doctor Cleghorn. The Conservator proposes to depute two of his subordinates to introduce the planting system in vogue there, into the *Anaimalai* Forests, and North Canara.

17. Para. 19. Will be communicated to the D. P. W. with a request that the Chief Engineer will impress upon his subordinates the necessity of care in selection of Timber for Government works. The wood (Poon spars) which Doctor Cleghorn saw used for the construction of a small bridge, it is most important to preserve for naval purposes.

18. *Sandal wood*.—The spontaneous growth of the Sandal tree has increased, it is stated, to a considerable extent in Mysore, Canara, Coimbatore, Salem, and a little in North Arcot, and the Conservator thinks that if the supervision of local officers is vigilant and slight assistance be given to nature in clearing the heads of the young plants which are often matted down by strong creepers an addition might accrue to the revenue of these provinces.

19. *Introduction of Saw Machinery*.—Para 28. The Government concur with the Conservator as to the propriety of deferring the introduction of Saw Machinery to the little frequented forests. This expensive plant can only be desirable when operations are to be conducted for a length of time on a large scale at the same place. At the Depôts the Saw Machinery might advantageously be introduced, the timber being conveyed thither entire; meanwhile every endeavour should be made to abolish the use of the Axe.

20. Para. 30. Will be communicated to the Chief Engineer, with a request that he will direct his subordinates to follow the course suggested.

21. Para. 33. The principle here laid down is fair and highly proper, and Collectors should give their aid in securing its observance.

22. Para. 34. The Government fully concur in Dr. Cleghorn's views as enunciated in this paragraph; which may be stated in a few words to be that while it is desirable to give every encouragement to the extension of Coffee cultivation, the destruction of timber must be prevented by restricting grants of coffee land to places where the shrub can be grown with advantage; and at the same time the denudation of the higher ridges and slopes of hills; which if allowed may result in a serious diminution of the rain fall, should be absolutely prohibited: while those intending to occupy land containing fine timber should be compelled to take the land without the timber, or take the latter at a valuation.

The Government are aware that the (late) Collector of Coimbatore, Mr. Thomas, was fully alive to the importance of the principles laid down; but they desire that the Board of Revenue will communicate to the present Acting Collector their wish that the views expressed in the letter quoted should be adhered to in every way.

23. With reference to para. 35 the Government notice with much interest the successful attempt by a private individual to introduce the Tea plant. Dr. Cleghorn will be good enough to keep them informed of the progress of an experiment so creditable to Mr. Mann.

Para. 36. The Government would be glad to see the general instructions issued by the Conservator, when he next reports progress.

24. para. 40. The Government will be prepared to take into consideration the Establishment of Depôts, when the Conservator lays a definite scheme before them.

25. Para. 41. The Conservator here represents the difficulty of procuring suitable Overseers. And he shews the causes which combine to prevent qualified persons from entering the Department. If on further experience, these causes are still found to operate detrimentally to the interest of the Establishment, it will be Dr. Cleghorn's duty to propose a remedy in the shape of a higher scale of remuneration.

26. Para. 44. The manual of accounts alluded to, has already been approved in Ex. Min. Con. 21st May 1858, No. 669, and 200 Copies (as amended according to the Conservator's Official Memorandum without date received July 2, 1858, No. 381,) will be struck off for the use of the Conservancy Department, &c.

27. Para. 46. The Botanical Manual under preparation in accordance with the wishes of the Honorable Court of Directors, will doubtless be a most useful production. The Govern-

ment would wish some uniform system to be adopted in the representation of Native terms in the Roman character.

28. The account of the disbursements of the Department in the last para. of the Report should have been placed side by side with one of the receipts.

29. The present Report as well as Dr. Cleghorn's 2nd letter submitting a detailed account of the tours of his two travelling Assistants will be submitted to the Honorable Court of Directors with a copy of the foregoing remarks.

(A true Extract.)

*[Signature]*  
Chief Secretary.

To the Conservator of Forests.  
" Board of Revenue for communication to Collectors.  
" Officiating Chief Engineer.  
" Department Public Works.  
" Military Department.  
" Marine do. *with report Recd 16th*  
" Financial Railway Department.

To Capt. A. D. Taylor, I. N.

*[Signature]*

Consultation 24 Aug 58

Marine. 1858. Sept 10

Extract Minutes consulta-  
tion in the Revenue Dept.  
1856.

2/5  
21/6 & Aug 58.

10299.  
2 spare copies. 2 copies of  
Report.

Communicating the  
orders of Govt on the Report  
of Forest operations sub-  
mitted by Dinglehorn  
in view to orders being  
passed on certain points  
connected with the  
Marine Dept.

10 3/18  
To be recorded  
21 August 1858. J.P.