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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

REV DEPARTMENT

G.O. No.
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GOVERNMENT OF MADRAS.
REVENUE DEPARTMENT.

13th June 1877, No. 1,974.

Read the following paper:—

No. 247. Proceedings of the Board of Revenue, dated 9th April 1877,
No. 1,571.

Read the following letter from J. F. PRICE, Esq., Acting Collector of Cuddapah,
to H. E. STOKES, Esq., Secretary to the Board of Revenue, dated
2nd March 1877, No. 101:—

I HAVE the honor to forward the report of the inspection of this district by
the Conservator of Forests.

2. As it has been sent to me marked for transmission "through the Collector
and Board of Revenue," I presume that I am entitled to make such remarks upon
it as occur to me.

3. It reached me only this morning.

4. Paragraph 4.—I think that the *Cassia florida* might be tried as a broad-
cast tree at Codoor. It was very successful in Salem, and is far more rapid growing
than the Jamboe. It will sustain any amount of cutting and bears drought
admirably if it has not been transplanted.

5. Paragraph 9.—I saw on the ghaut between Sanepoy and Rajampett any
quantity of young trees which the natives said were Red Sanders. I have no
doubt, from what Colonel Biddome says, that I was rightly informed for miles they
had been as mentioned in my report upon the sub-division headed down for fodder
for the cattle. The forest in this direction has been most seriously injured. I saw
some Sanders wood the other day taken out of the sluice of a tank which breached
certainly 100 years ago, and it was almost as good as it was when it had been put
down. It was quite untouched by white-ants.

6. Paragraphs 13, 14, 15.—The land referred to here is probably the same
that I saw. There is ample room to make large reserves without in the least
interfering with the grazing ground for cattle. It ought not to be very difficult or
expensive to fence in ground here with walls as there are myriads of loose stones to
be had everywhere. Aloe fencing would not grow as the soil is exceedingly stony.

7. Paragraph 16.—Casuarina appears not to grow well anywhere in this
district. I believe that it is because gravel or slate underlie the surface almost
everywhere. The Vaghi grows as I have found better when sown broadcast
mixed with *Cassia florida* than when transplanted. It is remarkable that the Nim
has failed. It is very common in those parts of the district that I have visited,
and the specimens are singularly fine.

8. Paragraph 18.—The Jamboe always grows well and rapidly in soil in which
there is sand. The timber, however, is liable to the attacks of the carpenter bee.
Where fuel is required the *Cassia florida* makes wood much the faster of the two.

9. Paragraph 20.—Colonel Biddome perhaps has not seen a very fine Carob
tree at Oosoor which is 3,000 feet above the sea. This was grown from the seed
first imported into this country, and was the only plant that was left in the seed-bed,
the remainder having been moved. All but this one died off. When I last saw it,
it was about eighteen feet high, and was covered with seed-pods. It stood in
Sergeant Brotherston's garden, and Colonel Drury will probably know of it. The
sub-division of this district, which has but little forest, is not so very much lower
than Oosoor.

10. Paragraph 21.—I agree with the Conservator of Forests, but think that the trees mentioned by him would succeed if sown.

11. Paragraph 25.—I should be inclined to try the *Cassia florida* in the Pullampett plantation; ploughing and sowing it mixed with gram which not only prevents the seeds from being too close together, but pays for ploughing.

12. Paragraph 47.—I quite agree with Colonel Beddome in the views expressed regarding cattle and goats. I have already called upon the Head Assistant Collector to report upon the necessity or advisability of allowing them into the reserves at all. The season is, however, of such a very exceptional class that it may perhaps not be judicious to prevent grazing in them for the present.

13. Paragraph 53.—I do not understand the Conservator's division of the district, unless it refers to forest mapping; if it does, it is rather confusing.

14. Paragraph 63.—I have always held and expressed the same views as Colonel Beddome on the subject of minor hill products. I believe that their systematic collection would prove a most lucrative source of revenue, and that the hill people would be very much better off when in the hands of Government than they now are in those of the grazing Chetties, for whose profit they work with exceedingly little to themselves.

ENCLOSURE No. 1.

From Lieutenant-Colonel R. H. BEDDOE, Conservator of Forests, to the Honorable D. F. CARMICHAEL, Secretary to Government, Revenue Department, Fort St. George, dated Jeypore Hills, 25th January 1877, No. 1,651.

I HAVE the honor to inform you that I have completed a tour of inspection in the Cuddapah Forest Division.

2. I met the Forest Officer, Mr. Yarde at Codoor, and, after inspecting the office records, &c., we proceeded together to the plantations and fuel reserves, and I carefully went over the plantations at Ooperapally, Codoor, Pullampett, and Camalapur, and visited several of the fuel reserves. Mr. Yarde was to have arranged for a short trip into the hill forests, but this was found quite impossible, as there was no water whatever on the hills.

3. Plantations.—These are five in number, viz., the Red Sanders plantation at Codoor and the four fuel plantations at Ooperapally, Pullampett, Reddipully, and Camalapur.

4. The Red Sanders Plantation.—This is close to the railway line near the Codoor Station; the extent is 50 acres, surrounded by a ditch and aloe fence; over an area of about 20 acres there are some 12 or 15,000 Red Sanders trees growing very straight and well, and this portion of the plantation is a very pretty sight; the largest tree now measures 41' 2" in height and has a girth of 27½ inches, but many others are nearly as large; this tree appears to rejoice in drought, and at the period of my visit, though the whole country was so terribly dried up, these trees were all looking exceedingly healthy, and the foliage was of a most brilliant green; the rest of the area does not seem adapted for the growth of Red Sanders, as the tree has failed when it has been tried, but almost the whole of this has been planted up with various other trees, viz., Teak, Sandalwood, Nim, Vaghi (*Albizia lebbek*), *Cassia florida*, Mango, *Strychnos nux vomica*, *Albizia amara*, *Emblia officinalis*, and *Pongamia glabra*; this was all seen to be a failure two or three years ago, and money has not been spent on it lately; the Sandal trees are all dying out, and the Teak can never come to any thing; this was to be expected; a few of the Nim and some of the *Cassia florida* are growing fairly, and these 30 acres may be turned into a firewood jungle by sowing Velvaylum (*Acacia leucophloea*) and Jamboe (*Prosopis spicijera*) broadcast during favorable weather, but it is not proposed to go to any extra expense in the matter.

5. The plantation was commenced in 1865; the expenditure up to date has been Rupees 5,839; receipts nil; the expenditure is now limited to Rupees 8 per mensem, the pay of one gardener.

6. The experiment is a very interesting one, and should be carefully watched; but, considering the present uncertainty as to the ultimate results, it is not intended to extend the planting of this tree at present.

7. The trees now standing in the plantation are all well-established, healthy, and of straight growth, and promise to come to maturity; if this is the case, and if the trees (or even only a good percentage of them) form heart wood, the plantation will yield a very handsome profit some 15 or 20 years hence when they may be expected to reach maturity; the soil of the plantation is richer and less stony than in the localities naturally affected by the tree, and the trees were all

heavily watered for the first few years; one or both of which causes may materially affect the formation of the heart wood or delay it, but these are the only doubts, and it is certain that the tree is proof against any drought.

8. Even if plantations succeed and pay well, there can be no doubt that the same object can be effected in a much cheaper way by fencing in small tracts on the hills where the tree grows naturally.

9. Red Sanders (*Pterocarpus santalinus*) is a most valuable product, and should, I think, be strictly conserved by the State; the timber is very beautiful, of a dark-red with streaks of a more brilliant hue, as hard and heavy as ebony, impervious to white-ants and other insects, and almost as durable as stone; it has been known to the natives probably for centuries, and much appreciated for posts in temples, chuttrams, and houses in Madras, Nellore, and other places in the vicinity of its habitat; posts about 7 feet long and about 22 inches in girth (the average size) find a ready sale at from 10 to 15 Rupees each, and as a proof of its durability, I may mention that some posts lately taken out of an old Mahal in the Yerragoontahcotta Fort, though known to be more than 60 years old, were as good as new, and sold by auction at Rs. 20 each; these were 10 feet long and 20 to 24 inches in girth. Till very lately the tree was scarcely known to Europeans, and until I figured it a few years ago in the *Flora sylvatica*, it was supposed by Botanists to be very doubtfully distinct from the Vengay (*Pterocarpus marsupium*), a much larger tree, indigenous throughout the Peninsula, and its native habitat has generally been given as the western forests, or Palghat mountains (a mistake for Balaghat). The tree is found nowhere in India except on these Cuddapah mountains, and very small portions of North Arcot and Kurnool immediately abutting on this district; the posts have been so greedily sought after for many years that very few large trees were left in the forests when this department commenced operations, and it is now difficult to find ripe trees except in inaccessible localities, but thousands of young trees are coming on.

* Vide his letter, No. 100, dated 4th May 1875, recorded in G.O., No. 1,016, dated 6th July 1875.

Mr. Horsley, the Collector, lately gave his opinion that the supply was in excess of the demand; this is a mistake. Mr. Yarde states that here is a large demand for posts, but few ripe trees, nor have there been sufficient for many years, and I have been constantly over the hills and know this to be a fact; there are plenty of young trees and saplings, but mature trees are seldom to be seen; we have of late years made good profits from the sale of the stumps and roots of old trees cut many years ago, but little or no revenue from posts; these stumps and roots are sent as a dye wood to Europe and realize in the district from 15 to 22 Rupees per ton; our highest rates have been Rupees 22-10-0 per ton, but this year the demand was slack and the sales only realized Rupees 15; the demand was also slack when Mr. Horsley wrote, and he probably had this in view, and not the demand for posts.

330 tons sold this year realized Rupees 4,955, the cost of bringing to market was Rupees 2,129, the profit consequently Rupees 2,826.

10. When it is seen that even the old roots and stumps fetch such a high price, and that the tree only grows in this one locality, the importance of its strict conservation is very apparent.

11. I have on former occasions brought to the notice of Government how recklessly this tree is destroyed; cattle as well as goats are particularly fond of its leaves more so than of any other tree, and thousands of saplings are often boiled down by cowherds to enable the cattle to get at the leaves; the tracts besides suffer very much from fire; without legislation and stricter rules than we now possess, the best we can do to check this is but a poor attempt, and there is no doubt that the forests are annually deteriorating, and without more intensive management their almost utter ruin can only be a question of time; at the same time I do not wish it to be imagined that it is too late to begin; there are thousands and thousands of promising young trees; but there is no doubt that conservancy should receive more attention.

12. Though the old and mature trees will not grow again from the stools, the young trees, such as the cowherds eat, do, but then the growth thrown back and pruning is generally necessary; the best and straightest trees are seedlings, and seed comes up freely.

13. Mr. Horsley in the letter alluded to advised the handing over of tracts for enclosure, and he has lately indicated a tract to Mr. Yarde on the hills to the west of Nundalore, north and south of the Sanepoy ghaut, which he thought might be enclosed. This is some twelve square miles and too extensive for enclosure without undue interference with grazing privileges. Mr. Yarde also states that the growth there is not so good as it is on the hills to the south (west of Codoor), where the formation of heart wood is more rapid. I propose, therefore, that Mr. Horsley's tract should only be fire-traced and not fenced in, but that as a commencement in the direction of reserves, we should immediately enclose with stone wall and fire-trace a small tract of one or two square miles on the hills west of Codoor.

14. Stone-wall enclosures cost about Rupees 210 per running mile, and are much more expensive than aloe fencing, but, owing to the wild pig, the latter is perfectly useless and simply throwing money away.

15. It will be necessary also to fire-trace other tracts, and perhaps to exclude cattle from some of the upper portion of the hills; the grazing grounds are very extensive, and I am of opinion that a very considerable belt along the upper portion of the hills might be conserved without

unduly curtailing them, although there would, of course, be complaints, but, at any rate, the grazing should be under supervision. On the hills, both sides of the line in the Pullampett and Sidhout Taluqs, there are some 600 or 650 square miles of forest (chiefly hill) now available for grazing besides the forest on the Royachoti side of western slopes of the Palacondah hills (the range west of the line), which belongs to the taluqs of Icalair, Royachoti, and Cuddapah.

16. *Fuel Plantations—Camalapur Fuel Plantation.*—One-and-a-half miles from the Camalapur Railway Station. This is an area of 247 acres, all fenced with aloes, soil sandy, but in some parts with a black sub-soil. It was taken up in 1860, in which year nurseries only were formed; planting began the following year; it is a mixed plantation.

17. *Babul* sown broadcast has grown exceedingly well near a channel and in some other parts of the plantation where there is moisture at no great depth, but it has been a complete failure in the higher and drier portions. There are many trees fit to be felled.

Casuarina.—Some twelve acres were pitted and planted with about 12,000 plants; these had reached a height of forty to forty-five feet and a girth of from nine to twenty inches, and were growing very well till some two or three months ago when they began to succumb to the lengthened drought, and 73 to 70 per cent. have died out since September, and the rest will probably also go if the drought continues.

Acacia Catechu, planted out on a small scale, are growing very fairly, but flowering whilst of too small size, which I fear promises a stunted growth.

Vaghi (*Albizia lebbek*) has been planted rather largely, and is growing fairly, and in some places very well.

Cassia florida, planted out on a small scale, is growing fairly.

Kurkapilli (*Inga Dulcis*) does not appear to answer; here and there it is growing well, though slowly, but in other places the trees are dead or dying.

Nim, planted out largely and at much expense in trenches over a considerable area, has been a complete failure.

18. The most interesting thing here is the wonderful way in which the Jamboo (*Prosopis spicigera*) has succeeded. It was never proposed to plant this tree largely, as it was supposed to grow too slowly; a few, however, have occasionally been put out in pits from the nurseries, and some sown broadcast; there has not been a single failure, and the growth is anything but slow, and it is very evident that this tree can stand any amount of drought, so I intend to have it planted largely broadcast which can be done at very small expense; it appeared to be growing well in some places where the soil was pure sand as well as where it was a mixture of sand and loam, and if it does this we could soon cover these tracts with a good fuel forest that will grow from coppice and not require replanting as the *Casuarina* does. The *Prosopis* is an exceedingly hard useful timber as well as a good fuel to grow well from the stool.

19. The *Prosopis juliflora* seed, of which I lately procured from South America as a tree likely to succeed in our most arid soils and climates, has come up very well in a nursery on this plantation.

20. The Carob (*Ceratonia*) seed has also germinated well, but I feel sure there is no chance of this answering here or anywhere in the plain; it would probably grow well at Kullhatti on the Nilgiris and Shembaganoor on the Palneys such mountain climates at an elevation of 4,000—5,000 feet, where, however, it would be of little or no use.

21. It will never pay to grow *Nim*, *Vaghi*, and such like trees which have to be planted out from nurseries in any of these fuel plantations, and the attempt has already been abandoned.

22. Trenching is a complete failure and very expensive, and nurseries and pitting even where successful are too expensive. Broadcast sowing during favorable seasons is the only method to be pursued, and, though it may often fail, it can be carried on at very little expense, and if persevered it will, I feel sure, always end in satisfactory results.

23. Mr. Yarde estimates the number of trees in this plantation at 69,000. The cost up to date has been Rupees 9,266, and I believe that the timber at present standing on it is worth more than this sum, so the result is not unsatisfactory, although the failures have been on a large scale we have besides gained much experience.

24. *Pullampett Fuel Plantation*, close to the Railway line, 4½ miles from the Rajampett Railway Station. This is an area of 402 acres, all fenced in with aloes, soil red gravelly; nurseries commenced in 1871, planting out in 1872; it was intended as a mixed fuel plantation.

25. *Vaghi*, *Cassia florida*, *Strychnos nuxvomica*, and *Terminalia arjuna* have been largely planted and are growing fairly well, but as fuel they will never recoup the cost of planting.

Nim planted in trenches and pits does not grow at all well, and may be pronounced a failure. *Babul* was tried by order of the Collector, but its failure in this dry, red, soil was a certainty; the seed often germinates and grows well at first, but the plants always die off.

Casuarina to the extent of about 500 trees were put down three years ago on a small plot where the soil was thought to be adapted; they grew well and attained 30 feet high, but all died out during the last two or three months.

26. As far as it has gone this plantation is a failure, and the planting of the *Vaghi*, *Nim*, *Babul* and other trees, hitherto attempted at great expense in trenches and pits, will never pay; the expenditure has, however, lately been reduced to a minimum. It is interesting to see how well the *Tella tooma* (*Acacia leucophloea*) grows here in this red soil; a few trees only of this tree have been raised in pits and some seed sown broadcast, but the growth is excellent, and it is evidently the only tree yet tried that will be likely to pay; it is a very good fuel, though inferior to the *Babul*, and I think the sowing of it broadcast at small expense should be the only operations here in future, and I feel sure that this will pay well, and that we shall not have much difficulty in getting up a good plantation of this tree. These operations need cost but very little. They should be carefully watched and reported on and stopped if success is not apparent.

27. Mr. Yarde estimates the number of the trees on this plantation at 34,000. The expenditure has been Rupees 7,062, which has been chiefly incurred in trenching and watering.

28. *Reddipully Fuel Plantation*, abutting on the railway line near Reddipully Station, commenced in 1860-70; 924 acres fenced in, soil red, gravelly, all trenched and planted out with the same sorts of trees as Pullampett, and much in the same condition. The *Babul* has utterly failed. The other trees are growing fairly in many instances, but not likely to pay as fuel. The plantation was pronounced a failure some two years ago, since which the expenditure has been reduced to a minimum, and it is now only Rupees 13 per mensem.

The *Tella tooma* should also be tried here. Expenditure Rupees 12,117.

I did not go over this plantation this tour, but I had a good view of the growth on it from the railway when passing along it.

29. *Ooperapally Fuel Plantation*, near the Railway line, about six miles from Codoor, commenced in 1868-69; 105 acres all fenced in, soil red sand and sandy loam, a mixed plantation, 3,900 trees of Red Sanders are growing very well and look very healthy, but the rest of the plantation is quite a failure. The trees are *Nim*, *Strychnos nuxvomica*, *Cassia florida*, *Pongamia glabra*, *Vaghi*, *Yellama* (*Conocarpus latifolius*), *Nelli-kai* (*Phyllanthus Emblica*), *Alangium lamarkii*, *Turanjee*, *Eugenia Jambolana*, *Babul* (all dead), *Santalwood* (all dying or dead). Some of the trees are growing fairly, others are dying from the drought, and it is very evident that the growth of none of them is such as could ever pay for fuel.

30. Here again there are here and there a few trees of *Tella tooma*, all showing healthy and vigorous growth, and this should be the only tree planted in future. The plantation was seen to be a failure some time since, and the expenditure was reduced; it is now only the pay of two watchmen (Rupees 13 per mensem).

31. Expenditure up to date, Rupees 7,447, chiefly incurred in digging trenches and watering.

32. Except Camalapur these mixed fuel plantations are up to date quite a failure. Now that we have found out that the *Tella tooma* and the *Prosopis* grow so well and without much care, it is hoped that we may really get up a good growth that will yield a rotation of crops; the attempt should certainly be made as it will not cost much.

33. *Fuel Reserves.*—These are seven in number, viz., Balapilly No. 1, Balapilly No. 2, Vagati Cona No. 3, Codoor No. 4, Theonaconda No. 5, Yerragoontahcottah No. 6, and Gathala No. 7; they are all situate along the North-west Line of railway between Tripatty and Nundalor; they are partly in the plains and partly on the hill slopes, and consist of the indigenous jungle which has been fenced in.

34. *Balapilly No. 1 Reserve*, abutting the west side of the line near Balapilly, area about 2,000 acres, partly hill and partly plain, taken up and fenced round in 1867, since which the growth has rapidly improved. Three acres felled as an experiment in January 1876, yielded 19½ tons to the acre (some 40 trees per acre being left standing), so that the reserve may be said to be about two-thirds stocked. It is now being demarcated by the Revenue Survey, when its correct area will be ascertained.

Expenditure, Rupees 5,014 (of which 3,632 represent cost of fencing).

Receipts, Rupees 134-3-5 (seigniorage on the fuel felled experimentally over three acres).

35. *Contents.*—*Diospyros capitellata* (very largely represented), Red Sanders (some 15 to 20 per cent. in the hill portions), *Yellama* (*Conocarpus latifolius*), *Satinwood*, *Turanjee*, *Babul*, *Vaghi*, *Strychnos nuxvomica*, *Embilica officinalis*, *Eugenia Jambolana*, *Acha*, *Hardwickia binata*, *Jallari* (*Shorea laciniata*), *Thamba* (*Shorea tumbagaia*), *Pongoo* (*Pongamia glabra*), *Miladi* (*Vitex altissima*), *Yeggi* (*Pterocarpus marsupium*), *Sandra* (*Acacia Catechu*), *Goti* (*Zizyphus jujuba*), *Nim*, *Palu* (*Alnusops hexandra*), *Pogadu* (*Alnusops Elengi*), *Alanjee* (*Alangium lamarkii*), *Blackwood*, *Woodapple* (*Feronia elephantum*), *Bridelia spinosa*, *Chronchi* (*Ruchanania latifolia*), *Butla ganapa* (*Azalea parvifolia*), *Palas* (*Bulca frondosa*), *Lunki* (*Diospyros melanoxylon*), *Padri* (*Stereospermum chelonoides*), *Tamarind*, *Ippi* (*Bissia latifolia*), *Scapnut*, *Putsari* (*Dalbergia paniculata*), *Tandra* (*Terminalia bellerica*), *Nallamadi* (*Terminalia tomentosa*), *Yeltura* (*Dichrostachys leucocera*), *Vodisha* (*Claytia collina*), *Kat Vaghe* (*Albizia odoratissima*), *Kal turanjee* (*Albizia stipulata*), *Tella tooma* (*Acacia leucophloea*), *Jambo* (*Prosopis spicigera*), *Reyla* (*Cassia fistula*), *Chinangi* (*Lagerstramia parviflora*), *Moyadi* (*Eugenia alternifolia*), *Badukai* (*Terminalia chebula*), *Alli* (*Memecylon*).

trees of both these species before conservancy came into force, and they are not procurable now except in rather out-of-the-way or more or less accessible places. A fine supply is however coming on, which will yield a considerable profit in future years.

53. The district is divided into seven taluqs, viz., Pullampett, Sidhout, Budwail, Proddatore, Peelair, Royachoti, and Cuddapah. The forests of the two first are the most valuable as they are close to the railway; the forests of the two next are much more distant; and the forests of the three last have only just been handed over to the Forest Department and had not been taken charge of at the time of my visit.

54. *Pullampett Taluq.*—This has an area of 896 square miles, and Mr. Yarde estimates the forests roughly at about 400 square miles; they are situated on the hills on both sides of the line north-west of Tripatty, and about the foot of the hills, though much of the latter is often scrub. The timbers are Red Sanders (its headquarters), Thamba Jallari, Ebony (*Diospyros ebenum* and *melanoxylon*), Teak (stunted), Ingay (*Pterocarpus marsupium*) generally small, Pala (*Mimusops bezandra*), Pogada (*Mimusops Elengi*), Yapa (*Hardwickia binata*) generally small, Nalla Maddi (*Terminalia glabra*), various jungle trees of more or less value for building purposes or fuel, and bamboos.

55. The Thamba I have never found it of this district or the confines of North Arcot abutting on these forests, though it is often said to grow in our western districts; the Jallari is often met with in our western forests, though generally of much smaller growth than it attains on these hills.

56. All the forests of this taluq belong to Government except some nineteen or twenty square miles. It would be a great help to effective conservancy if these private tracts could be purchased by the State, but if not they should be properly demarcated; they are I believe as follows:

1st.—An Agraharam of seven or eight square miles at Maharaipooram east of the line near Codoor.

2nd.—An Agraharam about five square miles at Chintagunta near Nandalore.

3rd.—An Agraharam about six or seven square miles at Mullay Madagu (under inquiry).

57. *Sidhout Taluq.*—This has an area of 610 square miles, and Mr. Yarde estimates the area of forest at 250 square miles. They are situated on the hills on both sides of the line north-west of the last taluq; the hills to the east of the line being here called the "Elleecondah Hills"; the timbers are quite similar to those in the last taluq, but there is less scrub-jungle.

58. Some ten square miles are, I understand, claimed as Agraharam; this should be settled and demarcated if it cannot be purchased by the State.

59. *Budwail Taluq.*—Area 759 square miles, estimated area of forests about 350 square miles, all situate on the southern part of the Jalla Mullays, and on the more northern parts of the Elleecondah range. The Nalla Mullay forests are very good and grow fine Nalla Maddi and Vengay besides small Teak; Red Sanders begin to disappear here and is of indifferent growth when found, and there is no Thamba or Jallari; the other timbers, &c., are the same as in the Pullampett Taluq. As regards revenue the forests are of little value at present as they are distant from the line of railway; they have consequently been but little worked except for the small local consumption.

60. *Proddatore Taluq.*—(Dhoor) Area 16 square miles, of which about 150 square miles represent the forest area, all on the southern portion of the Nalla Mullays, good growth as in the last, but too remote from the railway line or the large market to yield much revenue.

61. The forests of the Peelair, Royachoti and Cuddapah Taluqs are situated on the western side of the Palaecondah range of hills, which runs along the eastern side of the railway line between Tripatty and Cuddapah; the area is not known; they join portions of the forests belonging to the taluqs of Pullampett and Sidhout, but are naturally worked down to the western or Royachoti side of the hills. Red Sanders bounds; but has been much destroyed chiefly for feeding cattle; they are only just now being taken under conservancy, and as they have hitherto been under no management or control whatever they will require much rest. The Deputy Conservator has been ordered to thoroughly explore them, and in the meantime a small establishment is entertained from Working Charges.

62. After the passing of a Forest Act the forests of this division should be regularly demarcated: nearly all the hill forests might be treated as State Forests subject, however, everywhere to grazing rights or privileges except in limited areas fenced in or duly marked off as reserves. A broad ride drawn at or near the base of the hill would, in the present state of the jungles, give ample woodland for communal purposes; these latter woodlands (at present by far the most valuable as being much nearer a market) are rapidly disappearing before cultivation, and there can be no doubt that in time they would cease to exist as such unless they be kept under State management.

63. *Minor Hill Produce.*—These products are of much value in this division and would yield a large revenue under systematic management. The more important are as follow:—

- Gallnuts (fruit of *Terminalia chebula*.)
- Lac (from *Shorea lacifera*.)
- Surala (a dye from the bark of *Ventilago Madrasapatana*.)

Somi (a red dye from bark of *Somida febrifuga*.)
Maddi (a red dye from bark of *Mirindia* sp.)
Avaram bark (*Cassia auriculata*)
Kapli (dye powder from *Mallotus Philippinensis*.)
Honey.
Wax.

Mr. Yarde informs me that very large profits arise from the gallnuts, the honey and wax. The different products are all collected by the Yenadis (ahill tribe) for the Chetties in the plains; the latter men have no legal claim on these products, and they grossly adulterate some of them so that they never reach the market in a pure state. The hill-men would be far better off under a department of the State, and some system of this sort would immensely facilitate conservancy; the question however is before Government in my report in the Anamallays—it is a wide one affecting every Forest Division more or less, and there can be little doubt that many of these products will in time disappear or become very rare unless they are systematically treated.

64. *Revenue.*—The receipts from April till November in last year have been Rupees 33,213 against an expenditure of Rupees 11,219, showing a profit for these eight months of Rupees 21,994. I give in the margin the receipts and charges from 1860-61, (the year in which this Department commenced operations) till the end of last year, which shows a profit of Rupees 3,95,223—a very satisfactory result when we add to it the large sums spent on plantations and the formation and improvement of fuel reserves.

Year.	Receipts.	Charges		
		A. Conservancy and Works.	B. Establish- ment.	Total.
1860-61...	Rs. 4,181	Rs. 1,25	Rs. 1,258	Rs. 2,759
1861-62...	5,462	643	2,81	3,401
1862-63...	10,721	2,230	3,230	5,660
1863-64...	21,652	3,195	4,091	7,223
1864-65...	29,164	3,132	4,091	6,263
1865-66...	27,498	2,356	4,58	6,595
1866-67...	25,577	2,016	4,58	10,360
1867-68...	36,667	3,864	6,49	18,251
1868-69...	88,444	10,080	8,12	21,329
1869-70...	80,288	12,884	8,45	19,500
1870-71...	46,301	12,144	7,45	25,795
1871-72...	55,330	17,141	8,68	20,587
1872-73...	73,261	11,912	8,65	24,619
1873-74...	52,657	15,403	9,26	21,170
1874-75...	51,979	11,055	10,15	
1875-76...	37,362			
Total...	5,96,899	1,97,980	98,66	2,01,586
Deduct charges...	2,01,586			
Surplus...	3,95,223			

65. *Establishment.*—I give in the margin the establishment as lately sanctioned to be brought into force on the 1st of April last, in the face of the reductions made by the Government of India in our Budget. I have reduced this for the present by Rupees 102 per mensem as follows:

Designation of the Subordinates.	Establishment as it stood after the reorganization.	
	Salary.	Travelling Allowance.
<i>Deputy Conservator's Office Establishment.</i>		
Head clerk...	Rs. 30	Rs. 25
2nd do. ...	20	15
3rd do. (Vernacular) ...	15	10
3 Peons, one at Rs. 8 and two at Rs. 7 each ...	22	15
<i>Protective Establishment.</i>		
1st Class Forest Ranger ...	100	25
3rd do. ...	60	15
2 Foresters, at Rs. 20 each ...	60	15
2 do. at Rs. 20 do. ...	40	15
5 Forest Guards at 8 Rs. each ...	40	15
25 do. do. at 7 Rs. do. ...	175	15
<i>Rangers' Office Establishment.</i>		
2 Clerks, at Rs. 15 each ...	30	15
2 Peons, at Rs. 6 do. ...	12	15
Total ...	604	40

for the western side of the Palaecondah Hills lately transferred to the Department; the Forest Guards are just now in receipt of an extra 2 Rupees each as famine allowance.

66. *Depôts*.—There was no timber depôt at the period of my visit; Red Sanders is the only timber that has been worked departmentally of late, and this had all been sold off very recently.

67. *Office and Records*.—I found the books, records and library well kept and in good order in the Forest Office at Codoor.

68. *Map*.—In the enclosed sheet of the Ordnance Map Mr. Yarde, the Deputy Conservator, has colored in his forest tracts (light green), fuel reserves (), fuel plantations (yellow), tracts of private forest (dark blue).

No. 1,652.

FORWARDED to the Secretary to Government, Revenue Department, through the Collector of Cuddapah and the Board of Revenue, with reference to Rule VIII published with G.O., No. 1,662-A, of the 19th November 1875, Revenue Department.

JEYPORE HILLS,
25th January 1877.

(Signed) R. H. BEDDOME, Lieut.-Colonel,
Conservator of Forests.

COLONEL BEDDOME'S report of a tour of inspection in the Cuddapah Forest Division will be submitted for the information and orders of Government.

2. The plantations are five in number, viz., the Red Sanders plantation at Codoor and four fuel-supplying plantations. The first named comprises about

	Acres.	Outlay.	Approximate Number of Trees.
Codoor...	50	5,839	12,000
Ooperapally...	105	7,447	Not given.
Pallampett...	402	7,062	34,000
Reddipully...	924	12,117	Not given.
Camalapur...	247	9,265	69,000
Total...	1,728	41,730	

fifty acres, of which twenty acres are planted with Red Sanders, the trees numbering twelve or fifteen thousand being in a very thriving condition; the rest of the plantation has proved a failure and will be turned into a firewood jungle. The Red Sanders is a most valuable tree and deserves careful conservation; the

proper course is no doubt, as pointed out at paragraph 8, to fence in tracts on the hills where this tree grows naturally, and Colonel Beddome makes proposals to this end at paragraphs 13 and 15. The Acting Collector corroborates the Conservator's account of the ruthless destruction of young trees which is now carried on; and states that there is ample room for the reserves proposed, without interfering with grazing rights. A small tract of only one or two square miles will be fenced in, and more extensive tracts on the upper slopes of the hills will be merely fire-traced, grazing being placed under supervision. These proposals have the Board's concurrence.

3. The fuel plantations have for the most part proved failures owing to injudicious selection of trees and a faulty plan of operations; unsuitable trees have been reared in nurseries and planted out, the result being a considerable expenditure on trenching and watering but very little to show for it; experience has, however, been gained, and now that it has been ascertained that broadcast sowing of hardy trees is the proper plan to adopt, expenditure has been reduced to what is absolutely necessary, viz., the pay of a few watchmen.

4. The fuel reserves, consisting of fenced tracts of the indigenous jungle on the plains and hill slopes bordering the line of rail, are seven in number, the total area being 16,830 acres and the expenditure incurred in connection with them Rupees 25,830. The principal item of expenditure has been the cost of fencing. These reserves may be expected to yield a large supply of railway fuel and timber, when felling commences, the value being calculated at 4 lakhs at the present seigniorage rate of 1 Rupee per 1,000 lbs.

5. A good profit has been realized from felling in the upreserved jungles, 86,662 tons of fuel having been disposed of to the Railway Company during the last six and a half years for Rupees 1,94,064, which represents clear profit with the exception possibly of a small charge for establishment and supervision, the expense

of felling and delivery being borne by contractors; an arrangement which is evidently more remunerative than departmental working.

6. The Board concur in thinking that it would be well worth while to incur some expense in fencing the reserves properly; an estimate of the cost should be submitted as proposed. It is presumed that inquiry was made as to the existence of communal rights in the tracts in question before the reserves were constituted; if proper provision has been made for the wants of the villagers there can be no objection to the Conservator's proposals in regard to restrictions on grazing, subject to relaxation in exceptional seasons. The result of the Collector's inquiries should be communicated to the Board.

7. The forests in this district are extensive and valuable; the area of those situated in the Pullampett, Sidhout, Budwai and Proddatur Taluqs is estimated at 1,150 square miles, the whole extent being the property of Government with the exception of a few small tracts; the forests in the Cuddapah, Royachoti and Voilpand Taluqs have only recently been handed over to the Conservator, and their area is unknown. The map referred to in paragraph 68 did not accompany the report, and no information is given as to the extent to which these forests have been worked, the system of working whether departmental or otherwise, and the receipts therefrom.

8. The financial results of the administration of this division are very satisfactory, the transactions during the last sixteen years and a half showing a profit of over 4 lakhs of rupees. The cost of the establishment has been recently reduced from Rupees 604 to Rupees 502 per mensem.

9. The question of permitting the Forest Department to deal with the hill men in the matter of the collection of minor forest products has been disposed of in G.O., dated 4th December 1876, No. 1,893.

(True Copies and Extract.)

(Signed) H. E. STOKES,
Secretary.

No. 248.

ORDER THEREON, 13th June 1877, No. 1,974.

Forest No. 5.

In the above Proceedings the Board submit, with their remarks, the Inspection Report of the forest operations, &c., &c., in the Cuddapah District and the Collector's notes thereon.

Plantations.—In paragraphs 1—32 the Conservator enters very fully into the present condition and past history of the plantations (five in number), four of which are regarded as fuel and one, Codoor, as a timber (Red Sanders) plantation.

2. The results of these experimental plantations are not satisfactory, except as regards Red Sanders, Jambu, and Tella Tooma. As far as can be gathered from the Conservator's letter there probably are not more than 200,000 trees on the plantations, allowing the same proportion of trees in Reddipally as in Pallampett, regarding which the Conservator remarks that its condition is very similar to the latter. This would give the area successfully planted as equal to about 200 acres out of 1,728, taking 1,000 trees to the acre. Viewing the expenditure in this way, the cost has been about 200 Rs. per acre, and this seems to be exclusive of establishment charges.

3. As regards the Red Sanders Plantation, the Government have already (G.O., 19th April 1876, No. 509,) decided that the prospects do not justify its extension, and in this view Colonel Beddome concurs. As regards the fuel plantations, the Conservator pronounces them, with one exception, "quite a failure."

4. The area of Codur is 50 acres, in 20 of which the Red Sanders tree grows well. The remaining space the Conservator proposes to sow broadcast with certain fuel trees, at favorable seasons, reducing the establishment to one watcher. His Grace in Council considers this proposal judicious. The Collector suggests that the *Cassia florida* should be planted instead of the Jambu. This is a matter of departmental management that will be left to the Conservator.

5. For the supply of the valuable Red Sanders the Conservator proposes to enclose and strictly conserve certain tracts* where the tree is found growing luxuriantly in the same way as he would treat Sandalwood tracts in Coimbatore and Salem. The Government approve his suggestions. This course will ensure an adequate supply of timber of undoubted quality in future years at comparatively small expense. The Government have perused with interest the account of its growth and distribution, &c., &c., given in paragraph 9.

6. As regards the fuel plantations, His Grace in Council approves Colonel Beddome's suggestions to limit expenditure to sowing broadcast the descriptions of fuel trees which grow readily and are suited to the conditions of soil and climate; also as regards the maintenance of the enclosures and the up-keep of a small establishment of watchers. Though hitherto the results have been unsatisfactory, yet it is manifest that much experience has been gained. The financial condition of the department, however, in no way justifies large experimental expenditure.

7. *Fuel Reserves.*—The condition of the fuel reserves (seven in number), with a total area of 16,830 acres, is more satisfactory. The expenditure upon them, exclusive, it is presumed, of establishment, has been 25,830 Rs. This outlay has been mainly on fencing. Colonel Beddome estimates the value of the wood now standing within bounds at 4,00,000 Rs., but this estimate seems somewhat arbitrary. In fact, the data for such an estimate do not exist. The Government consider that it would be far more satisfactory if a considerable section of these reserves were felled and exact returns obtained. The Ballapilly Reserve has now been conserved for ten years, which is above the age usually allowed for reduction by Colonel Beddome. The Conservator will report whether there is any objection to this reserve being so operated on.

8. The Government observe that future expenditure on reserves hinges to a great extent on the yield that can be obtained. The Forest Department has been dealing with reserves for over (10) ten years; and the Government desire to learn whether they can now furnish any reliable data on which a judgment may be based; whether or not expenditure is likely to be recouped, and what area should be reserved for railway (should the Government resolve to persevere in the policy of forming reserves for the railway supply) or other purposes.

9. As regards financial results in this district, the department has advantages not met with elsewhere. It has few competitors, and enjoys almost a monopoly of the railway market. In the Sidhout and Pullampett Taluqs there are, it is estimated, about 650 square miles, or 416,000 acres of forest. The railway traverses these taluqs. With such vast areas of forest it may require further consideration whether the general conservancy of the forest area under the operation of a liberal enactment would not be more expedient and economical, whether in the interests of the State or the people, than the formation of close reserves for fuel. The Government observe, however, that the Board have called for a report on the question of the curtailment of privileges of the villagers by the formation of these strict reserves. And the question may then be discussed.

10. The Conservator's proposal in paragraph 45 to spend Rs. 20,000 or 25,000 on wall fences will be disposed of after receipt of that report.

As regards the forests proper no special orders seem called for. Colonel Beddome furnishes little information of a specific character.

11. Temporary sanction is accorded to the reductions made by the Conservator.

Extract.

(Signed)

G. MASTER,
Secretary to Government.

To the Board of Revenue.
.. the Conservator of Forests.
.. the Public Works Department.
.. the Financial Department.
.. and Accountant-General.

Ed. F. R. Bantleman.

No. 1,571.

PROCEEDINGS OF THE BOARD OF REVENUE, dated 9th April 1877.

Read the following letter from J. F. PRICE, Esq., Acting Collector of Cuddapah, to H. E. STOKES, Esq., Secretary to the Board of Revenue, dated 2nd March 1877, No. 101:—

I HAVE the honor to forward the report of the inspection of this district by the Conservator of Forests.

2. As it has been sent to me marked for transmission "through the Collector and Board of Revenue," I presume that I am entitled to make such remarks upon it as occur to me.

3. It reached me only this morning.

4. Paragraph 4.—I think that the *Cassia florida* might be tried as a broadcast tree at Codoor. It was very successful in Salem, and is far more rapid growing than the Jamboo. It will sustain any amount of cutting and bears drought admirably if it has not been transplanted.

5. Paragraph 9.—I saw on the ghaut between Sanepoy and Rajampett any quantity of young trees which the natives said were Red Sanders. I have no doubt, from what Colonel Beddome says, that I was rightly informed for miles they had been as mentioned in my report upon the sub-division headed down for fodder for the cattle. The forest in this direction has been most seriously injured. I saw some Sanders wood the other day taken out of the sluice of a tank which breached certainly 100 years ago, and was almost as good as it was when it had been put down. It was quite untouched by white-ants.

6. Paragraphs 13, 14, 15.—The land referred to here is probably the same that I saw. There is ample room to make large reserves without in the least interfering with the grazing ground for cattle. It ought not to be very difficult or expensive to fence in ground here with walls as there are myriads of loose stones to be had everywhere. Aloe fencing would not grow as the soil is exceedingly stony.

7. Paragraph 16.—Causarina appears not to grow well anywhere in this district. I believe that it is because grave or slate underlie the surface almost everywhere. The Vaghi grows as I have found better when sown broadcast mixed with *Cassia florida* than when transplanted. It is remarkable that the Nim has failed. It is very common in those parts of the district that I have visited, and the specimens are singularly fine.

8. Paragraph 18.—The Jamboo always grows well and rapidly in soil in which there is sand. The timber, however, is liable to the attacks of the carpenter bee. Where fuel is required the *Cassia florida* makes wood much the faster of the two.

9. Paragraph 20.—Colonel Beddome perhaps has not seen a very fine Carob tree at Oosoor which is 3,000 feet above the sea. This was grown from the seed first imported into this country, and was the only plant that was left in the seed-bed, the remainder having been moved. All but this one died off. When I last saw it, it was about eighteen feet high, and was covered with seed-pods. It stood in

Sergeant Brotherston's garden, and Colonel Drury will probably know of it. The sub-division of this district, which has but little forest, is not so very much lower than Oossoor.

10. Paragraph 21.—I agree with the Conservator of Forests, but think that the trees mentioned by him would succeed if sown.

11. Paragraph 25.—I should be inclined to try the *Cassia florida* in the Pullampett plantation; ploughing and sowing it mixed with gram which not only prevents the seeds from being too close together, but pays for ploughing.

12. Paragraph 47.—I quite agree with Colonel Biddome in the views expressed regarding cattle and goats. I have already called upon the Head Assistant Collector to report upon the necessity or advisability of allowing them into the reserves at all. The season is, however, of such a very exceptional class that it may perhaps not be judicious to prevent grazing in them for the present.

13. Paragraph 53.—I do not understand the Conservator's division of the district, unless it refers to forest mapping; if it does, it is rather confusing.

14. Paragraph 63.—I have always held and expressed the same views as Colonel Biddome on the subject of minor hill products. I believe that their systematic collection would prove a most lucrative source of revenue, and that the hill people would be very much better off when in the hands of Government than they now are in those of the grasping Chetties, for whose profit they work with exceedingly little to themselves.

ENCLOSURE No. 1.

From Lieutenant-Colonel R. H. REDDOME, Conservator of Forests, to the Honorable D. F. CARMICHAEL, Secretary to Government, Revenue Department, Fort St. George, dated Jeypore Hills, 25th January 1877, No. 1,651.

I HAVE the honor to inform you that I have completed a tour of inspection in the Cuddapah Forest Division.

2. I met the Forest Officer, Mr. Yarde, at Codoor, and, after inspecting the office records, &c., we proceeded together to the plantations and fuel reserves, and I carefully went over the plantations at Ooperapally, Codoor, Pullampett, and Camalapur, and visited several of the fuel reserves. Mr. Yarde was to have arranged for a short trip into the hill forests, but this was found quite impossible, as there was no water whatever on the hills.

3. Plantations.—These are five in number, viz., the Red Sanders plantation at Codoor and the four fuel plantations at Ooperapally, Pullampett, Reddipully, and Camalapur.

4. The Red Sanders Plantation.—This is close to the railway line near the Codoor Station; the extent is 50 acres, surrounded by a ditch and aloe fence; over an area of about 20 acres there are some 12 or 15,000 Red Sanders trees growing very straight and well, and this portion of the plantation is a very pretty sight: the largest tree now measures 41' 2" in height and has a girth of 27½ inches, but many others are nearly as large; this tree appears to rejoice in drought, and at the period of my visit, though the whole country was so terribly dried up, these trees were all looking exceedingly healthy, and the foliage was of a most brilliant green; the rest of the area does not seem adapted for the growth of Red Sanders, as the tree has failed when it has been tried, but almost the whole of this has been planted up with various other trees, viz., Teak, Sandalwood, Nim, Vaghi (*Albizia lebbek*), *Cassia florida*, Mango, *Strychnos nux vomica*, *Albizia amara*, *Emblia officinalis*, and *Pongamia glabra*; this was all seen to be a failure two or three years ago, and money has not been spent on it lately; the Sandal trees are all dying out, and the Teak can never come to any thing; this was to be expected; a few of the Nim and some of

the *Cassia florida* are growing fairly, and these 30 acres may be turned into a firewood jungle by sowing Velvaylum (*Acacia leucophlea*) and Jamboo (*Prosopis spiciopera*) broadcast during favorable weather, but it is not proposed to go to any extra expense in the matter.

5. The plantation was commenced in 1865; the expenditure up to date has been Rupees 5,839; receipts nil; the expenditure is now limited to Rupees 8 per mensem, the pay of one gardener.

6. The experiment is a very interesting one, and should be carefully watched; but, considering the present uncertainty as to the ultimate results, it is not intended to extend the planting of this tree at present.

7. The trees now standing in the plantation are all well-established, healthy, and of straight growth, and promise to come to maturity; if this is the case, and if the trees (or even only a good percentage of them) form a good stand, the plantation will yield a very handsome profit some 15 or 20 years hence when they may be expected to reach maturity; the soil of the plantation is richer and less stony than in the localities naturally affected by the tree, and the trees were all heavily watered for the first few years; one or both of which causes may materially affect the formation of the heart wood or delay it, but these are the only doubts, and it is certain that the tree is proof against any drought.

8. Even if plantations succeed and pay well, there can be no doubt that the same object can be effected in a much cheaper way by fencing in small tracts on the hills where the tree grows naturally.

9. Red Sanders (*Pterocarpus santalinus*) is a most valuable product, and should, I think, be strictly conserved by the State; the timber is very beautiful, of a dark-red with streaks of a more brilliant hue, as hard and heavy as ebony, impervious to white-ants and other insects, and almost as durable as stone; it has been known to the natives probably for centuries, and much appreciated for posts in temples, chuttrums, and houses in Madras, Nellore, and other places in the vicinity of its habitat; posts about 7 feet long and about 22 inches in girth (the average size) find a ready sale at from 10 to 15 Rupees each, and as a proof of its durability, I may mention that some posts lately taken out of an old Mahal in the Yerragoontahcottah Fort, though known to be more than 60 years old, were as good as new, and sold by auction at Rs. 20 each; these were 10 feet long and 20 to 24 inches in girth. Till very lately the tree was scarcely known to Europeans, and until I figured it a few years ago in the *Flora sylvatica*, it was supposed by Botanists to be very doubtfully distinct from the Vengay (*Pterocarpus marsupium*), a much larger tree, indigenous throughout the Peninsula, and its native habitat has generally been given as the western forests, or Palghaut mountains (a mistake for Balaghat). The tree is found nowhere in India except on these Cuddapah mountains, and very small portions of North Arcot and Kurnool immediately abutting on this district; the posts have been so greedily sought after for many years that very few large trees were left in the forests when this department commenced operations, and it is now difficult to find ripe trees except in inaccessible localities,

* Vide his letter, No. 100, dated 4th May 1875, recorded in G.O., No. 1,016, dated 6th July 1875.

by thousands of young trees are coming on. M. Horsley, the Collector, lately* gave his opinion that the supply was in excess of the demand; this is a mistake. Mr. Yarde states that there is a large demand for posts, but few ripe trees, nor have there been sufficient for many years, and I have been constantly over the hills and know this to be a fact; there are plenty of young trees and saplings, but mature trees are seldom to be seen; we have of late years made good profits from the sale of the stumps and roots of old trees cut many years ago, but little or no revenue from posts; these stumps and roots are sent as a dye wood to Europe and realize in the district from 15 to 22 Rupees per ton; our highest rates have been Rupees 22-10-0 per ton, but this year the demand was slack and the sales only realized

330 tons sold this year realized Rupees 4,955, the cost of bringing to market was Rupees 2,129, the profit consequently Rupees 2,826.

Rupees 15; the demand was also slack when Mr. Horsley wrote, and he probably had this in view, and not the demand for posts.

10. When it is seen that even the old roots and stumps fetch such a high price, and that the tree only grows in this one locality, the importance of its strict conservation is very apparent.

11. I have on former occasions brought to the notice of Government how recklessly this tree is destroyed; cattle as well as goats are particularly fond of its leaves more so than of any other tree, and thousands of saplings are often bodily cut down by cowherds to enable the cattle to get at the leaves: the tracts besides suffer very much from fire; without legislation and stricter rules than we now possess, the best we can do to check this is but a poor attempt, and there is no doubt that the forests are annually deteriorating, and without more intensive management their almost utter ruin can only be a question of time; at the same time I do not wish it to be imagined that it is too late to begin; there are thousands and thousands of promising young trees; but there is no doubt that conservancy should receive more attention.

12. Though the old and mature trees will not grow again from the stools, the young trees, such as the cowherds cut, do, but then the growth is thrown back and pruning is generally necessary; the best and straightest trees are seedlings, and seed comes up freely.

13. Mr. Horsley in the letter alluded to advised the handing over of tracts for enclosure, and he has lately indicated a tract to Mr. Yarde on the hills to the west of Nandalore, north and south of the Sanepoy ghaut, which he the might be enclosed. This is some twelve square miles and too extensive for enclosure without undue interference with grazing privileges. Mr. Yarde also states that the growth there is not so good as it is on the hills to the south (west of Codoor), where the formation of heart wood is more rapid. I propose, therefore, that Mr. Horsley's tract should only be fire-traced and not fenced in, but that as a commencement in the direction of reserves, we should immediately enclose with stone wall and fire-trace a small tract of one or two square miles on the hills west of Codoor.

14. Stone-wall enclosures cost about Rupees 210 per running mile, and are much more expensive than aloe fencing, but, owing to the wild pig, the latter is perfectly useless and simply throwing money away.

15. It will be necessary also to fire-trace other tracts, and perhaps to exclude cattle from some of the upper portion of the hills; the grazing grounds are very extensive, and I am of opinion that a very considerable belt along the upper portion of the hills might be conserved without unduly curtailing them, although there would, of course, be complaints, but, at any rate, the grazing should be under supervision. On the hills, both sides of the line in the Pullampett and Sidhout Taluqs, there are some 600 or 650 square miles of forest (chiefly hill) now available for grazing besides the forest on the Royachoti side or western slopes of the Palaeondah hills (the range west of the line), which belongs to the taluqs of Pelair, Royachoti, and Cuddapah.

16. *Fuel Plantations*.—*Camalpur Fuel Plantation*.—One-and-a-half miles from the Camalapur Railway Station. This is an area of 247 acres, all fenced with aloes, soil sandy, but in some parts with a black sub-soil. It was taken up in 1869, in which year nurseries only were formed; planting began the following year; it is a mixed plantation.

17. *Babul* sown broadcast has grown exceedingly well near a channel and in some other parts of the plantation where there is moisture at no great depth, but it has been a complete failure in the higher and drier portions. There are many trees fit to be felled.

Casuarina.—Some twelve acres were pited and planted with about 12,000 plants; these had reached a height of forty to forty-five feet and a girth of from nine to twenty inches, and were growing very well till some two or three months ago when they began to succumb to the lengthened drought, and 73 to 70 per cent. have died out since September, and the rest will probably also go if the drought continues.

Acacia Catechu, planted out on a small scale, are growing very fairly, but flowering whilst of too small size, which I fear promises a stunted growth.

Vaghi (*Albizia lebbek*) has been planted rather largely, and is growing fairly, and in some places very well.

Cassia florida, planted out on a small scale, is growing fairly.

Kurupilli (*Inga Dulcis*) does not appear to answer; here and there it is growing well, though slowly, but in other places the trees are dead or dying.

Nim, planted out largely and at much expense in trenches over a considerable area, has been a complete failure.

18. The most interesting thing here is the wonderful way in which the Janiboo (*Prosopis spicigera*) has succeeded. It was never proposed to plant this tree largely, as it was supposed to grow too slowly; a few, however, have occasionally been put out in pits from the nurseries, and some sown broadcast; there has not been a single failure and the growth is anything but slow, and it is very evident that this tree can stand any amount of drought, so I intend to have it planted largely broadcast which can be done at very small expense; it appeared to be growing well in some places where the soil was pure sand as well as where it was a mixture of sand and loam, and if it does this we could soon cover these tracts with a good fuel forest that will grow from coppice and not require replanting as the *Casuarina* does. The *Prosopis* is an exceedingly hard useful timber as well as a good fuel to grow well from the stool.

19. The *Prosopis juliflora* seeds, of which I lately procured from South America as a tree likely to succeed in our most arid soils and climates, has come up very well in a nursery on this plantation.

20. The Carob (*Ceratonia*) seed has also germinated well, but I feel sure there is no chance of this answering here or anywhere in the plains; it would probably grow well at Kulhatty on the Nilgiris and Shembagaadoor on the Pulneys and in mountain climates at an elevation of about 5,000 feet, where, however, it would be of little or no use.

21. It will never pay to grow *Nim*, *Vaghi*, and such like trees which have to be planted out from nurseries in any of these fuel plantations, and the attempt has already been abandoned.

22. Trenching is a complete failure and very expensive, and nurseries and pitting even where successful are too expensive. Broadcast sowing during favorable seasons is the only method to be pursued, and, though it may often fail, it can be carried on at very little expense, and if persevered in will, I feel sure, always end in satisfactory results.

23. Mr. Yarde estimates the number of trees in this plantation at 69,000. The cost up to date has been Rupees 9,265, and I believe that the timber at present standing on it is worth more than this sum, so the result is not unsatisfactory, although the failures have been on a large scale we have besides gained much experience.

24. *Pullampett Fuel Plantation*, close to the Railway line, $4\frac{1}{2}$ miles from the Pullampett Railway Station. This is an area of 402 acres, all fenced in with aloes, soil red gravelly; nurseries commenced in 1871, planting out in 1872; it was intended as a mixed fuel plantation.

25. *Vaghi*, *Cassia florida*, *Strychnos nuxvomica*, and *Terminalia arjuna* have been largely planted and are growing fairly well, but as fuel they will never recoup the cost of planting.

Nim planted in trenches and pits does not grow at all well, and may be pronounced a failure. *Babul* was tried by order of the Collector, but its failure in this dry, red, soil was a certainty; the seed often germinates and grows well at first, but the plants always die off.

Casuarina to the extent of about 500 trees were put down three years ago on a small plot where the soil was thought to be adapted; they grew well and attained 30 feet high, but all died out during the last two or three months.

26. As far as it has gone this plantation is a failure, and the planting of the *Vaghi*, *Nim*, *Babul* and other trees, hitherto attempted at great expense in trenches and pits, will never pay; the expenditure has, however, lately been reduced to a minimum. It is interesting to see how well the *Telia tooma* (*Acacia leucophloea*) grows here in this red soil; a few trees only of this tree have been raised in pits and some seed sown broadcast, but the growth is excellent, and it is evidently the only tree yet tried that will be likely to pay; it is a very good fuel, though inferior to the *Babul*, and I think the sowing of it broadcast at small expense should be the only operations here in future, and I feel sure that this will pay well, and that we shall not have much difficulty in getting up a good plantation of this tree. These operations need cost but very little. They should be carefully watched and reported on and stopped if success is not apparent.

27. Mr. Yarde estimates the number of the trees in this plantation at 21,000. The expenditure has been Rupees 7,062, which has been chiefly incurred in trenching and watering.

28. *Reddipully Fuel Plantation*, abutting on the railway line near Reddipully Station, commenced in 1869-70; 924 acres fenced in, soil red, gravelly, all trenched and planted out with the same sort of trees as Pullampett, and much in the same condition. The Babul has utterly failed. The other trees are growing fairly in many instances, but not likely to pay as fuel. The plantation was pronounced a failure some two years ago, since which the expenditure has been reduced to a minimum, and it is now only Rupees 13 per mensem.

The Tella toona should be tried here. Expenditure Rupees 12,117.

I did not go over this plantation this tour, but I had a good idea of the growth on it from the railway when passing along it.

29. *Ooperapally Fuel Plantation*, near the Railway line, about six miles from Codoor, commenced in 1868-69; 105 acres all fenced in, soil red sand and sand loam, a mixed plantation. 2,900 trees of Red Sanders are growing very well and look very healthy, but the rest of the plantation is quite a failure. The trees are *Nim*, *Strychnos nuxvomica*, *Cassia florida*, *Pongamia glabra*, *Vaghi*, *Yuliana* (*Conocarpus latifolius*), *Nelli-kai* (*Phyllanthus emblica*), *Alangium lamarchii*, *Turanjee*, *Eugenia jambolana*, *Babul* (all dead), *Saddalwood* (all dying or dead). Some of the trees are growing fairly, others are dying from the drought, and it is very evident that the growth of none of them is such as could ever pay for fuel.

30. Here again there are here and there a few trees of Tella toona, all showing healthy and vigorous growth, and this should be the only tree planted in future. The plantation was seen to be a failure some time since, and the expenditure was reduced; it is now only the pay of two watchmen (Rupees 18 per mensem).

31. Expenditure up to date, Rupees 7,477, chiefly incurred in digging trenches and watering.

32. Except Camalapur these mixed fuel plantations are up to date quite a failure. Now that we have found out that the Tella toona and the *Prosopis* grow so well and without much care, it is hoped that we may really get up a good growth that will yield a rotation of crops; the attempt should certainly be made as it will not cost much.

33. *Fuel Reserves*.—These are seven in number, viz., Balapilly No. 1, Balapilly No. 2, Vagali Cotta No. 3, Codoor No. 4, Thoonacotta No. 5, Yerragoontahcottah No. 6, and Gathala No. 7. They are all situated along the North-west line of railway between Tripatty and Nundalora; they are partly in the plains and partly on the hill slopes, and consist of the indigenous jungle which has been fenced in.

34. *Balapilly No. 1 Reserve*, abutting the west side of the line near Balapilly, area about 2,000 acres, partly hill and partly plain, taken up and fenced round in 1867, since which the growth has rapidly improved. Three acres felled as an experiment in January 1876, yielded 194 tons to the acre (some 40 trees per acre being left standing), so that the reserve may be said to be about two-thirds stocked. It is now being demarcated by the Revenue Survey, when its correct area will be ascertained.

Expenditure, Rupees 5,014 (of which 3,662 represent cost of fencing).

Receipts, Rupees 134-3-5 (seigniorage on the fuel felled experimentally over three acres).

35. *Contents*.—*Diospyros capitellata* (very largely represented), Red Sanders (some 15 to 20 per cent. in the hill portions), Yellana (*Conocarpus latifolius*), *Satinwood*, *Turanjee*, *Babul*, *Vaghe*, *Strychnos nuxvomica*, *Emblia officinalis*, *Eugenia Jambolana*, *Acha*, *Hardwickia binata*, *Jallari* (*Shorea lacifera*), *Thambai* (*Shorea tambagala*), *Pongoo* (*Pongamia glabra*), *Miladi* (*Ficus altissima*), *Yaggi* (*Pterocarpus marsupium*), *Sandra* (*Acacia Catechu*), *Gali* (*Zizyphus jujuba*), *Nim*, *Palu* (*Mimusops elengi*), *Pogada* (*Mimusops elengi*), *Alanjee* (*Alangium lamarchii*), *Blackwood*, *Woodapple* (*Feronia elephantum*), *Bridelia spinosa*, *Chronchi* (*Balanocarpus latifolius*), *Bulla ganapa* (*Nandea parvifolia*), *Palas* (*Butea frondosa*), *Tunki* (*Diospyros melanocylon*), *Padri* (*Stereospermum chelonoides*), *Tamarind*, *Ippi* (*Bissia latifolia*), *Soapnut*, *Putsari* (*Dalbergia paniculata*), *Tandra* (*Terminalia bellerica*), *Kallamadi* (*Terminalia tomentosa*), *Yeltura* (*Pachystachys amara*), *Odisha* (*Cluytia olina*), *Kat Vaghe* (*Albizia odoratissima*), *Rat turanje* (*Abazia stipulata*), *Tella toona* (*Acacia leucophloea*), *Jambo* (*Prosopis spicigera*), *Reyla* (*Cassia fistula*), *Chirangi* (*Lagerstramia parviflora*), *Moyadi* (*Eugenia alternifolia*), *Kadukai* (*Terminalia chebula*), *Lilli* (*Memecylon*). Bamboos and trees worthless as fuel, such as *Bombac*, *Givoytia*, *Protium stercubia*, and scrub such as *Dodonaea*, *Eugenia*, *Pavetta*, &c. The value of timber on the reserve at the seigniorage rate is about Rupees 20,000.

36. *Balapilly Reserve No. 2*, abutting the east side of the line near Balapilly, area about 1,730 acres, taken up in 1871, since which the improvement has been marked. Three acres felled as an experiment in January 1876, yielded 113 tons per acre (seeders being left), so that the reserve may be said to be more than one-third fully stocked. It is now being demarcated by the Revenue Survey.

Contents the same as in No. 1.

Expenditure Rupees 4,888 (which includes Rupees 692, purchase of land, and Rupees 3,921, cost of fencing).

Receipts, Rupees 79-9-10 (seigniorage on the fuel felled experimentally over 3 acres).

The value of the timber on the reserve at the seigniorage rate is about Rupees 40,000.

37. *Vacateconah Reserve No. 3*, about 3 to 4 miles to the west of the line, area about 4,000 acres, nearly all hill, taken up in November 1874, encled all round, being demarcated by the Revenue Survey. Contents same as No. 1; the amount of stock requires careful estimating.

Expenditure, Rupees 2,922 (of which Rupees 2,27 represent cost of fencing).

Receipts, nil.

Not so valuable as Nos. 1 and 2, as further from the line and more hilly.

38. *Codoor Reserve No. 4*, near Codoor, 2 miles to east of line, taken up partly in 1871 and partly in 1874, area about 3,500 acres, partly felled, a small portion only in the plain, the rest hill, and the jungle growth very good. Contents same as No. 1, being demarcated by the Revenue Survey. The stock requires to be carefully estimated.

Expenditure, Rupees 2,900 (of which Rupees 1,63 is for fencing).

Receipts, nil.

39. *Thoonacotta Reserve No. 5*, 1 to 2 miles west of line near Codoor, taken up in 1874, area about 600 acres, all hill, all fenced, being demarcated. Contents, *Strychnos nuxvomica* 50 per cent, *Conocarpus latifolius* 20 per cent., Red Sanders 15 per cent., the rest chiefly *Acha*, *Tamarind*, *Turanjee*, and *Phyllanthus emblica*, wants time to recover. Contents, not estimated.

Expenditure, Rupees 1,360 (Rupees 1,162 of which fencing).

40. *Yerragoontah Cottah Reserve No. 6*, 5 to 6 miles west of line near Codoor, area about 3,000 acres, taken up in 1873, $\frac{1}{2}$ hill and $\frac{1}{2}$ plain, all fenced, being demarcated. Contents same as No. 1; the jungle on the hill portion good, but in the plain very indifferent, and requiring late damage by cattle and goats everywhere apparent. Contents not estimated.

Expenditure, Rupees 2,801 (of which Rupees 2,283 represent fencing).

41. *Gathala Reserve No. 7*, 6 to 7 miles west of the line, north-west of Codoor, area about 3,000 acres, taken up at the end of 1874, nearly all hill, all fenced, about to be demarcated, growth good, estimated by Mr. Yarde at not less than 3 tons to the acre. Contents same as in No. 1 Reserve.

Expenditure, Rupees 5,945 (of which Rupees 5,000 represent fencing).

42. It will be seen that the seven fuel reserves are an area of 16,830 acres (over 26 square miles), and that they have cost up to date Rupees 25,000; the receipts have been almost nil up to date, because felling has not commenced in them, but the value of the timber at the seigniorage rate of 1 Rupee per 1,000 lbs. cannot be less than 4,000 Rupees.

43. Although there has been no felling as yet in the reserves, felling for engine fuel has been going on in the unreserved jungle tracts in their vicinity, and in the margin I give the profits realized from the sale of this fuel to the Railway Company since the year 1870-71, when the seigniorage rate of 1 Rupee per 1,000 lbs. was brought into force. Contractors fell and deliver to the railway. The Forest Department is credited with the seigniorage only, the contractors (upon whom all the expense and risk fall) receiving all the surplus profit. The railway at present, I believe, only give Rupees 4-8-0 per ton, and as the seigniorage is about Rs. 2-3-10,

Year.	Tons.	Profit.
1870-71	7,816	37.50
1871-72	10,214	49.84
1872-73	16,491	86.09
1873-74	17,430	84.00
1874-75	12,338	59.75
1875-76	12,632	60.41
1876-77	9,190	20.52
Seven months only calculated.		
Total		1,94.04

there is only Rupees 2-4-2 per ton left to the contractors to pay for felling, sawing, and delivering; so that there is no wide margin for their profits; the Railway can, however, well afford, with reference to the price of coal, to pay as much as Rupees 6 per ton in the Cuddapah District, and when we commence felling in any of the hill portions of the reserve they will, I think, be obliged to raise their rates (probably some 3 or 10 Annas per ton) in order to realize the 1 Rupee seigniorage.

44. It is shown that during the last 1½ years the profit from the fuel supply to the railway has been close upon 2 lakhs of rupees, so that a large expenditure on these reserves is fully authorized. I look upon them as a most excellent institution, and a very large revenue from them is certain. I do not propose any extension to this district, as I consider the area taken up, if not sufficient, at least as much as is authorized with reference to grazing rights. I propose, however, that they should be gradually worked up to yield at least 30 tons per acre every twelve or fifteen years, which I am certain they can easily do if properly enclosed and rendered safe from fire.

45. The Acting Inspector in the late report on this forest division brought to the notice of Government the very poor state of the fences, and I found them in all the reserves that I visited generally in a very wretched state, and Mr. Yarde informed me that they were in much the same condition throughout. Stone walls have been used in many places where stone was on the spot and those are in good repair, but the enclosure is generally a ditch and aloe fence. This was decided on as far cheaper than stone, and, looking to the great success of the railway aloe fences, failure could hardly have been anticipated; the wild pig and porcupine, however, will not allow it to grow, and it is rooted up and destroyed in every direction, and the ditch gets destroyed by rain. At present the enclosures are of no use in keeping out cattle, goats, or wild animals, and serve only to show the boundaries of the reserves. I propose that the stone wall should be continued round all the reserves where necessary, and that the demarcation traces already made outside the fences should be extended to a width necessary to make them effectual against fire; and I trust that this may be sanctioned when the Deputy Conservator can forward an estimate of the anticipated cost. This may cost 20 to 25,000 Rupees, a very small sum when we look to the results or even to the present anticipated profits from these tracts.

46. Except perhaps in the two Balapilly Reserves it appeared to me that cattle and goats have very much the run of all the tracts, at least the portion in the plains, so that their improvement is not by any means what it should be; the exclusion of cattle is impossible without proper enclosures. Before I entered the district the Acting Collector, Mr. Daniel, informed me officially that he had thrown open all the reserves to cattle, and Mr. Yarde informed me that large quantities of cattle were daily coming up from Bellare. Now the area of the reserves is very small compared to the extent of the forests, and the whole object of forming them is defeated if the Revenue Authorities can give orders of this nature without consulting the Forest Department. I therefore went into Cuddapah to see Mr. Daniel on the subject, when he informed me that he had been acting on a letter from one of his Assistants, and that he supposed the reserves were all the hill forests, not small limited blocks, he consequently modified his order and placed the grazing

entirely under the Forest Officer's control. When I visited the reserves, however, it was very evident from their condition that cattle had not been in any way rigorously excluded prior to Mr. Daniel's order.

47. Goats should never be allowed in these tracts, and after they are felled over cattle must be rigorously excluded for several years, after which they can be allowed in under proper supervision. I did not find them in a condition that limited grazing under control could cause more than a minimum of damage, so I told Mr. Yarde to allow a limited number of cattle belonging to people living in the neighbourhood to graze within the reserved limits under supervision and to allow any one to cut grass; but, as I have already stated, this had apparently been going on though without authority, and there was consequently little grass and few or no young seedlings.

48. The extreme drought of the two last years has told much upon the appearance of these tracts, and I saw them at their worst. I observed not a few trees (chiefly *Strychnos nux vomica*, *Memecylon tinctorium* and *Dodonaea viscosa*) dead and dying from the drought; this has rarely, if ever, come under my observation before, certainly never to such an extent; it was very noticeable how green, fresh and healthy all the Red Sanders appeared—it is evidently a drought-loving tree.

49. It must be borne in mind that though a large portion of these reserves is plain, considerable tracts are on the hill slopes, from which the delivery of the timber will be more expensive than at present (on the other hand the railway runs right through the Balapilly Reserve Nos. 1 and 2, and the profits here will be considerable).

50. The hill portions of the reserves contain a large percentage of Red Sanders, which will not be cut as fuel as it will yield far larger profits as timber. In case the necessity for Red Sanders reserves may be questioned when there is so much in the hill portions of the fuel reserves, I may mention that the small Red Sanders reserves are proposed for far more intensive management and with the object of eventually eradicating almost all other growth except that valuable tree.

51. *Forests.*—The principal forests of this division are situated on the hills on each side of the line of railway between Tripatty and Cuddapah, when every stick may be said to be of value.

52. Next to the Red Sanders, which has already been fully noticed, the most valuable timbers are the two South Indian Sals, Thamba (*Shorea tumbagaa*) and Jallari (*Shorea laciniifera*); these grow to a large size on the hills, and are in great request in Madras as well as in the district for building purposes. The forests had, however, been very much denuded of all good-sized trees of both these species before conservation came into force, and they are not procurable now except in rather out-of-the-way or more or less inaccessible places. A fine supply is however coming on, which will yield a considerable profit in future years.

53. The district is divided into seven taluqs, viz., Pullampett, Sidhout, Budwail, Proddatore, Peelair, Rayachoti, and Cuddapah. The forests of the two first are the most valuable as they are close to the railway; the forests of the two next are much more distant; and the forests of the three last have only just been handed over to the Forest Department and had not been taken charge of at the time of my visit.

54. *Pullampett Taluq.*—This has an area of 896 square miles, and Mr. Yarde estimates the forests roughly at about 400 square miles; they are situated on the hills on both sides of the line north-west of Tripatty, and about the foot of the hills, though much of the latter is often scrub. The timbers are Red Sanders (its head-quarters), Thamba Jallari, Ebony (*Diospyros ebenum* and *melanocylon*), Teak (stunted), Vengay (*Pterocarpus marsupium*) generally small, Palu (*Alnusops hexandra*), Pogada (*Nimusops Bengi*), Yepa (*Hardwickia binata*) generally small, Nalla Maddi (*Terminalia glabra*), various jungle trees of more or less value for building purposes or fuel, and bamboos.

55. The Thamba I have never found out of this district or the confines of North Arcot abutting on these forests, though it is often stated to grow in our western districts; the Jallari is often met with in our western forests, though generally of much smaller growth than it attains on these hills.

56. All the forests of this taluq belong to Government except some nineteen or twenty square miles. It would be a great help to effective conservancy if these private tracts could be purchased by the State, or if not they should be properly demarcated; they are I believe as follows:—

1st.—An Agraharam of seven or eight square miles at Maharajpooram east of the line near Codoor.

2nd.—An Agraharam about five square miles at Chintagunta near Nundalore.

3rd.—An Agraharam of six or seven square miles at Mullay Madagu (under inquiry).

57. *Sidhout Taluq*.—This has an area of 610 square miles, and Mr. Yarde estimates the area of forest at 250 square miles. They are situated on the hills on both sides of the line north-west of the last taluq; the hills to the east of the line being here called the "Elleecondah Hills;" the timbers are quite similar to those in the last taluq, but there is less scrub-jungle.

58. Some ten square miles are, I understand, claimed as Agraharam; this should be settled and demarcated if it cannot be purchased by the State.

59. *Budwail Taluq*.—Area 759 square miles, estimated area of forests about 350 square miles, all situate on the southern part of the Nulla Mallays, and on the more northern parts of the Elleecondah range. The Nulla Mallay forests are very good and grow the Nulla Madli and Vengay besides small Teak; Red Sanders begins to disappear here and is of indifferent growth when found, and there is no Thamba or Jalari; the other timbers, &c., are the same as in the Pullampett Taluq. As regards revenue the forests are of little value at present as they are distant from the line of railway; they have consequently been but little worked except for the small local consumption.

60. *Proddatore Taluq*.—(Dhoor) Area 486 square miles, of which about 150 square miles represent the forest area, all on the southern portion of the Nulla Mallays, good growth as in the last, but too remote from the railway line or any large market to yield much revenue.

61. The forests of the Peelair, Royachoti and Cudnapah Taluqs are situated on the western side of the Palaecondah range of hills, which runs along the eastern side of the railway line between Tripatty and Cudnapah; the area is not known; they join portions of the forests belonging to the taluqs of Pullampett and Sidhout, but are naturally worked down to the western or Royachoti side of the hills. Red Sanders abounds, but has been much destroyed chiefly for feeding cattle; they are only just now being placed under conservancy, and as they have hitherto been under no management or control whatever, they will require much rest. The Deputy Conservator has been ordered to thoroughly explore them, and in the mean time a small establishment is entertained from Working Charges.

62. After the passing of a Forest Act the forests of this division should be regularly demarcated; nearly all the hill forests might be treated as State Forests subject, however, everywhere to grazing rights or privileges except in limited areas fenced in or duly marked off as reserves. A broad ride drawn at or near the base of the hills would, in the present state of the jungles, give ample woodland for communal purposes; these latter woodlands (at present by far the most valuable as being much nearer a market) are rapidly disappearing before cultivation, and there can be no doubt that in time they would cease to exist as such unless they be kept under State management.

63. *Minor Hill Produce*.—These products are of much value in this division and would yield a large revenue under systematic management. The more important are as follows:—

Gallnuts (fruit of *Terminalia chebula*.)

Lac (from *Shorea lacifera*.)

Surala (a dye from the bark of *Ventilago Madrasapatana*.)

Somi (a red dye from bark of *Soyimida febrifuga*.)

Maddi (a red dye from bark of *Morinda 2 sp.*)

Avaram bark (*Cassia auriculata*.)

Kapli (dye powder from *Millettus Philippinensis*.)

Honey.

Wax.

Mr. Yarde informs me that very large profits arise from the gallnuts, the honey and wax. The different products are all collected by the Yenadis (a hill tribe) for the Chetties in the place; the latter men have no legal claim on these products, and they grossly adulterate some of them so that they never reach the market in a pure state. The hill-men would be far better off under a department of the State, and some system of this sort would immensely facilitate conservancy; the question however is before Government, in my report on the Anamallays—it is a wide one affecting every Forest Division more or less, and there can be little doubt that many of these products will in time disappear or become very rare unless they are systematically treated.

Year.	Receipts.	Charges.		
		A. Conservancy and Works.	B. Establishment.	Total.
1860-61...	Rs. 4,131	Rs. 1,254	Rs. 1,258	Rs. 2,512
1861-62...	5,482	2,751	2,759	5,510
1862-63...	10,721	648	2,813	3,461
1863-64...	21,652	2,280	3,230	5,510
1864-65...	29,154	3,195	3,601	6,796
1865-66...	27,493	3,182	4,091	7,273
1866-67...	25,877	2,256	4,097	6,353
1867-68...	86,667	2,016	4,530	6,546
1868-69...	88,444	3,864	6,496	10,360
1869-70...	80,288	10,980	8,171	19,151
1870-71...	46,801	12,884	8,495	21,379
1871-72...	55,330	12,144	7,416	19,560
1872-73...	73,261	17,141	8,634	25,775
1873-74...	52,657	11,912	8,075	20,987
1874-75...	51,979	15,403	9,216	24,619
1875-76...	37,363	11,055	10,115	21,170
Total...	5,94,809	1,07,960	93,636	2,01,596
Deduct charges...	2,01,596			
Surplus...	3,93,213			

64. *Revenue*.—The receipts from April till November in last year have been Rupees 33,213 against an expenditure of Rupees 11,219, showing a profit for these eight months of Rupees 21,994. I give in the margin the receipts and charges from 1860-61, (the year in which this Department commenced operations) till the end of last year, which shows a profit of Rupees 3,95,223—a very satisfactory result when we add to it the large sums spent on plantations and the formation and improvement of fuel reserves.

65. *Establishment*.—I give in the margin the establishment as lately sanctioned to be brought into force on the 1st April last, in the face of the reductions made by the Government of India in our Budget. I have reduced this for the present by Rupees 102 per mensem as follows:—

Designation of the Subordinates.	Establishment as it stood after the reorganization.	
	Salary.	Travelling Allowance.
<i>Deputy Conservator's Office Establishment.</i>		
Head clerk...	Rs. 30	Rs. 15
2 do. ...	20	10
1 do. (Vernacular) ...	15	5
3 Peons, one at Rs. 8 and two at Rs. 7 each ...	23	10
<i>Protective Establishment.</i>		
1st Class Forest Ranger...	100	25
3rd do. ...	60	15
2 Foresters, at Rs. 30 each ...	60	15
2 do. at Rs. 20 do. ...	40	10
5 Forest Guards at 8 Rs. each ...	40	10
25 do. at 7 Rs. do. ...	175	40
<i>Rangers' Office Establishment.</i>		
2 Clerks, at Rs. 15 each ...	30	15
2 Peons, at Rs. 6 each ...	12	5
Total...	604	102

Two Foresters were dispensed with, one on Rupees 30, and one on Rupees 20; two Gumstahs on Rupees 10 each were substituted for Rangers' clerks on Rupees 15; the two Rangers' peons were dispensed with, and the pay of the thirty Forest Guards was reduced to what it was prior to 1st of April, i.e., a reduction of 1 Rupee each man, with the exception of the reduction in the pay of

the Guards. These may, I think, remain permanent until demarcation has taken place, but some 200 Rupees will be required shortly for a permanent establishment for the western side of the Palcondah Hills lately transferred to the Department; the Forest Guards are just now in receipt of an extra 2 Rupees each as famine allowance.

66. *Depôts*.—There was no timber in depôt at the period of my visit; Red Sanders is the only timber that has been worked departmentally of late, and this had all been sold off very recently.

67. *Office and Records*.—I found the books, records and library well kept and in good order in the Forest Office at Codoor.

68. *Map*.—In the enclosed sheet of the Ordnance Map Mr. Yarde, the Deputy Conservator, has colored in his forest tracts (light green), fuel reserves (), fuel plantations (yellow), tracts of private forest (dark blue).

No. 1,652.

FORWARDED to the Secretary to Government, Revenue Department, through the Collector of Cuddapah and the Board of Revenue, with reference to Rule VIII published with G.O. No. 1,662-A, of the 19th November 1875, Revenue Department.

JEYPORE HILLS,
25th January 1877.

(Signed) R. H. BEDDOME, Lieut. Colonel,
Conservator of Forests.

COLONEL Beddome's report of a tour of inspection in the Cuddapah Forest Division will be submitted for the information and orders of Government.

2. The plantations are five in number, viz., the Red Sanders plantation at Codoor and four fuel-supplying plantations. The first named comprises about fifty acres, of which twenty acres are planted with Red Sanders, the trees numbering twelve or fifteen thousand being in a very thriving condition; the rest of the plantation has proved a failure and will be turned into a firewood jungle.

	Acres.	Quantity	Approximate Number of Trees
Codoor...	50	5,839	12,000
Ooperapally...	105	7,447	Not given
Pullampett...	402	7,062	34,000
Reddipully...	924	12,117	Not given
Camalapur...	247	9,265	39,000
Total...	1,728	41,730	

The Red Sanders is a most valuable tree and deserves careful conservation; the proper course is no doubt, as pointed out at paragraph 8, to fence in tracts of the hills where this tree grows naturally, and Colonel Beddome makes proposals to this end at paragraphs 13 and 15. The Acting Collector corroborates the Conservator's account of the ruthless destruction of young trees which is now carried on, and states that there is ample room for the reserves proposed, without interfering with grazing rights. A small tract of only one or two square miles will be fenced in, and more extensive tracts on the upper slopes of the hills will be merely fire-traced, grazing being placed under supervision. These proposals have the Board's concurrence.

3. The fuel plantations have for the most part proved failures owing to injudicious selection of trees and a faulty plan of operations; unsuitable trees have been reared in nurseries and planted out, the result being a considerable expenditure on trenching and watering but very little to show for it; experience has, however, been gained, and now that it has been ascertained that broadcast sowing of hardy trees is the proper plan to adopt, expenditure has been reduced to what is absolutely necessary, viz., the pay of a few watchmen.

4. The fuel reserves, consisting of fenced tracts of the indigenous jungle on the plains and hill slopes bordering the line of rail, are seven in number, the total area being 16,830 acres and the expenditure incurred in connection with them Rupees 25,830. The principal item of expenditure has been the cost of fencing. These reserves may be expected to yield a large supply of railway fuel and timber, when felling commences, the value being calculated at 4 lakhs at the present seigniorage rate of 1 Rupee per 1,000 lbs.

5. A good profit has been realized from felling in the unreserved jungles, 86,662 tons of fuel having been disposed of to the Railway Company during the last six and a half years for Rupees 1,94,064, which represents clear profit with the exception possibly of a small charge for establishment and supervision, the expense of felling and delivery being borne by contractors; an arrangement which is evidently more remunerative than departmental working.

6. The Board concur in thinking that it would be well worth while to incur some expense in fencing the reserves properly; an estimate of the cost should be submitted as proposed. It is presumed that inquiry was made as to the existence of communal rights in the tracts in question before the reserves were constituted; if proper provision has been made for the wants of the villagers there can be no objection to the Conservator's proposals in regard to restrictions on grazing, subject to relaxation in exceptional seasons. The results of the Collector's inquiries should be communicated to the Board.

7. The forests in this district are extensive and valuable; the area of those situated in the Pullampett, Sidhout, Budwail and Proddatur Taluqs is estimated at 1,150 square miles, the whole extent being the property of Government with the exception of a few small tracts; the forests in the Cuddapah, Boyachoti and Volpind Taluqs have only recently been handed over to the Conservator, and their area is unknown. The map referred to in paragraph 63 did not accompany the report, and no information is given as to the extent to which these forests have been worked, the system of working whether departmental or otherwise, and the receipts therefrom.

8. The financial results of the administration of this division are very satisfactory, the transactions during the last sixteen years and a half showing a profit of over 4 lakhs of rupees. The cost of the establishment has been recently reduced from Rupees 604 to Rupees 502 per mensem.

9. The question of permitting the Forest Department to deal with the hill men in the matter of the collection of minor forest products has been disposed of in G.O., dated 4th December 1876, No. 1,893.

(True Copies and Extract.)

Sub-Secretary.

To the Secretary to Government, Revenue Department.

Copy to the Collector of Cuddapah
" " Conservator of Forests.

N^o 1974 Revenue Department

Proceedings of the Madras Government
Under date the 13 June 1877

Read Proceedings of the
Board of Revenue dated 9
April 1877, N^o 1571 submit
Report of Conservator of Forests
on a tour of inspection in
Cuddalore Forest Division

In the above Proceeding
the Board submit with the
remarks the inspection re-
port of the Forest operation
of the Cuddalore D.
and the Collector's Notes
thereon.

Plantations.

In paragraphs 1 -
the Conservator enters
fully into the present
condition

Revenue Department

162357

1877.

Board of Revenue,

MADRAS.

PROCEEDINGS, 9TH APRIL 1877, No. 1571.

Copy 1877

Encl.

13-6-77

Received 14 May 1877

APRIL

No. 1571.

Cuddalore Forest Division. - Submitting to
Government Report of Conservator of Forests on
a tour of inspection in -

1877

12247

condition and past
history of the plantations -
in number - four of
which are regarded as fuel, &
e. Codur as a timber (red
unders) plantation.

This gives in Council
gards the results of these
experimental plantations

unsatisfactory. As far

as can be gathered from

the Conservator's letter

these probably are not

more than 200,000 trees

the plantations allow

the same proportion

trees in Reddipally

in Pallampet, regarding

which

area - Outlay - Approx. No. of trees
1728 - 41,730 - 2,000,000

1924/6
which the Conservator
remarks that its condi-

is very similar to the

latter. This would give

the area planted as

equal to about two hundred

acres out of 1728, taking

1000 trees to the acre -

Viewing the expenditure

in this way the cost has

been about 200 Rs. per

acre, and this seems to

be exclusive of establish-

ment charges - As regards

the Red Sanders plan-

tation the Govt. have

already (20.19.19) April

187

1876-509) decided that
the prospects do not justify
its extension; and in this
view Col. Beddome concurs.
regards the fuel planta-
tions, the Conservator
announces them with
the exception "quite a
failure."

The area of Cadur,
50 acres - in 23 of
which the Red Sanders
tree grows well. The
remaining space the
Conservator proposes to sow
broadcast with certain
trees - at favorable
seasons.

seasons. reducing the
establishment to one
watcher. His grace in
Council considers his proposal
judicious. The collector
suggests that the Cassia
florida should be planted
instead of the Jamboe,
This is a matter of depart-
mental management
that will be left to
the Conservator.

For the supply
of this valuable
Red Sanders
wood the Conservator
proposes

proposes to enclose
and strictly conserve certain
tracts where the tree

* paras 12 - 15 -

is found growing
luxuriantly, in the same
way as he would

treat Sandalwood
tracts in Coimbatore

and Salem. The

Government are
approve his suggestions

in the case of Red
Sanders. This
course

1914 18
course will ensure an
adequate supply of
timber of undoubted
quality in future
years, at comparatively
small expense. The

Government have perused
with interest the account
of its growth and
distribution of
given in para 9.

As regards the
fuel plantations
This

This grace in Council
approves Col. Beddome's
suggestions to limit expen-
diture to the saving broad-
cast of the descriptions
of fuel trees, which grow
readily and are suited to the
conditions of soil and climate -
also as regards maintenance
of the enclosures and the
employment of a small establish-
ment of watchers. Though hitherto
the results have been
unsatisfactory, yet it is
manifest that much experience
has been gained. The
financial condition
at

Fuel Reserves

of the Dept^t, however in no
way justifies any large ex-
perimental expenditure.

The fact regard the
condition of the Fuel Reserves
7 in number, with a total
area of 16,830 acres, is more
satisfactory. The expenditure
upon them exclusive, it is
presumed, of establish-
ment, has been 25,830 Rs.
This outlay has been mainly
on fencing. Colonel Beddome
estimates the value of the
wood now standing within
bounds at 4,00,000 Rs., but
this estimate seems somewhat
arbitrary. In fact the
data for such an estimate
do

do not exist. The
Government consider
that it would be far
more satisfactory
if one of these Reserves
was filled and the
exact returns obtained.

The Ballapilly reserve has
now been conserved
for 10 years, which
is above the age

usually allowed
for reproduction in
leg. Col. Beddome.

The Conservator
will report ^{whether there is any objection to} why
this reserve should
not be more operated
on

Specimen then
in the process of
a Departmental
system or the
advisability of
filling a
reserve

And the Govt. desire
to learn whether
they can now
- risk any

1972/20
ow. The Government
observe that future
expenditure on reserves
hinges to a great extent
on the yield, and yet
although the Forest
Department have been
dealing with reserves
for over ten (10) years,
they have as yet fur-
nished absolutely
no reliable data upon
which a judgment
might be based,
whether or not ex-
penditure is likely
to be recouped, and
what area should be
reserved

reserved for Railway
(should the Govt. resolve to per-
= severe in the policy of forming
reserves for the Railway supply)
or other purposes.

[The Government
remark that Mr. Beddome
takes great credit to
his Department for
the financial success
of its operations in
this District, but it
is manifest that
the Forest officers have
had little to do with
these results and
above receiving
the money from
Contractors. Hence
the Department has a dominant position
has few competitors
and enjoys a monopoly.

As regards financial
results in this District
the Department has a dominant position
has few competitors
and enjoys a monopoly.

20
I A. L. Lush
this many are
included in the
areas

1974
[as the jungles mostly
belong to Government
they have] almost a
monopoly of the
Railway market.

In the Sidhant and
Pullampett Taluhs
alone there are, it is
estimated, about
650 square miles or
4,16,000 acres of forest.
The Railway traverses
these taluhs. With
such vast areas of
forest [the necessity
forming
of close reserves for
fuel (not for timber)
it

May require further consideration whether
is not very apparent.

The general conservancy
of the Forest area
under the operation
of a liberal enact-
ment would pro-

ably be more ex-

pedient and econo-

mical, whether the

interests of the State

or the people are

concerned, than the

formation of close

reserves for fuel. The

Govt. observe however

that

that the Board have
called for a report
upon the question
of the curtailment
of privileges of the
villagers by the
formation of these

strict reserves. And the
question may then be discussed.
The Conservator

proposal in para 45

to spend Rs 20,000 or

25,000 on wall fences

will be disposed of

after receipt of that

report. As regards

the

the Forests paper

no special orders

seem called for. Col.

Eda me furnishes

little information

of a specific character.

II Temporary

sanction is accorded

to the reduction

made by the Com-

-servator.

Dft. G.O.
Guddapah Forest Div.
Inspection Report

1974
22/5/75

Car

21. P. W. Depts
21. P. W. Depts
21. P. W. Depts
6. Act General