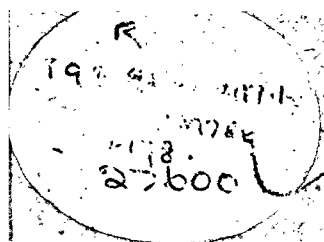


ASO(D) 271

Report Upon the Nelambur
Jents Plantations, 1978



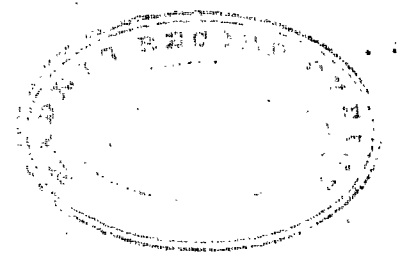
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REPORT



UPON THE

NELAMBUR TEAK PLANTATIONS.

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MADRAS:

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1878.

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REPORT

UPON THE

NELAMBUR TEAK PLANTATIONS.

* செப்பனிடவுதற்காகக் கருதுக *
* கொள்ளப்பட்ட *
* மாதம் 10-ம் வருடம் 1989 *
* செப்பனிடவு முடித்த *
* மாதம் 12-ம் வருடம் 1989 *
* ஆராய்ச்சி உதவியாளர் *
* இயக்குநர் *

MADRAS:
PRINTED BY R. HILL, AT THE GOVERNMENT PRESS.
1878.

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OFFICE OF CONSERVATOR OF FORESTS,
OOTACAMUND, 20th April 1878.

No. 105.

From

LIEUT.-COL. R. H. BEDDOME,
Conservator of Forests,

To

C. G. MASTER, Esq.,
Secy. to Government, Revenue Department.

SIR,

I HAVE the honor to forward the accompanying critical report upon the Nelambur Teak Plantations required by Government for submission to the Government of India and the Secretary of State. Being full of statistics that will be of much value to this department, I would suggest that it should be printed in book form, and I should like to be allowed to correct the proof-sheets.

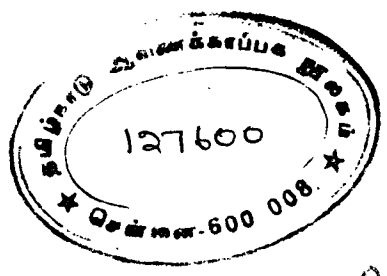
2. The specimens of teak saplings (alluded to in paragraph 86 of the report), which I am anxious should be forwarded to the Secretary of State, are now ready at my office in Ootacamund, and I request that you will inform me whether I should forward them to Madras to be packed there, or deliver them in your office in Ootacamund. They are in the rough, and I think it better that they should be polished after arriving in England. They are very interesting, and the rings shew clearly the age and annual development.

I have the honor to be,

Sir,

Your most obedient servant,

R. H. BEDDOME, Lieut.-Col.,
Conservator of Forests.



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REPORT

UPON THE

NELAMBUR TEAK PLANTATIONS.

Letter from Lieutenant-Colonel R. H. BEDDOME, Conservator of Forests, to
C. G. MASTER, Esq., Secretary to Government, Revenue Department,
dated Ootacamund, 20th April 1878, No. 104.

WITH reference to the Government Order, No. 2,846, of the 24th September last, I have the honor to inform you that I have lately paid a lengthened visit to Nelambur and been thoroughly over every year's plantation, critically examining the growth of the teak and the character of the soil, and taking measurements with a view to ascertain the probable yield at maturity, and going minutely into all particulars that are likely to be of value with reference to the future of these interesting teak plantations, and I now submit the report called for by Government.

2. I will commence my report by giving a brief extract from my field notes on each plantation, as these may be of much use to any one undertaking a critical report in future years, or to any Foresters casually visiting Nelambur and going over a few of the blocks.

3. In these notes I have given the average heights of the trees in each plantation and the average girths deduced from a considerable number of measurements. In taking measurements I always left out such saplings as were entirely overtopped and ought, in most cases, not to be standing; but even with this omission the average girths are not at all a criterion of the rate of growth of the ultimate crop, as in most of the plantations many hundreds of trees are still standing on each acre, but at 45 or 50 years of age there will only be sixty of the best of these on each acre; still these measurements are of much value and interest.

4. The following table gives the measurements and cubical contents of a sapling cut from each year's plantation, and from which specimens have been cut for the forthcoming Paris Exhibition. These, with the exception, perhaps, of the specimen from the 1847 Plantation, were not taken from the few large examples which have much outrun their neighbors, but are a fair average of the growth of the sixty trees per acre which will eventually be selected as to stand to maturity for the ultimate crop.

Year in which Planted.	Description of Soil.			Specimen Number.	EXTREME MEASUREMENT.		SALE MEASUREMENT.				Yearly Rate of growth.			
					Length in Feet.	Circumference at base in Inches.	Length in Feet.	Girth in Quarter Inches.	Contents.					
1844	Alluvial	...	...	1	104	96	70	12 $\frac{1}{4}$	72	11	4	1	9	11
1845	Do.	...	...	2	106	96	60	12	60	...	...			
1846	Do.	...	...	3	110	86	72	11 $\frac{3}{4}$	69	...	4			
1847	Do.	...	...	4	105	105	70	14 $\frac{1}{2}$	102	2	5			
1848	Do.	...	...	5	98	77	55	10	42	2	4			
1849	Do.	...	...	6	99	77	60	11	50	5	...			
1850	Quartz and laterite	...	...	7	88	69	60	8 $\frac{3}{4}$	31	4	9			
1851	Do.	...	...	8	81	62	51	9 $\frac{1}{4}$	30	3	7			
1852	Laterite	...	...	9	71	69	54	9 $\frac{1}{2}$	33	10	1			
1853	Do.	...	...	10	70	60	41	8 $\frac{1}{2}$	21	9	7			
1854	Alluvial	...	...	11	110	69	70	11	52	9	10	1	3	5
1855	Laterite	...	...	12	65	50	42	7 $\frac{3}{4}$	17	6	2			
1856	Alluvial	...	...	13	77	62	53	9 $\frac{1}{2}$	31	2	6			
1857	Laterite	...	...	14	81	52	50	7 $\frac{1}{2}$	19	6	4			
1858	Alluvial	...	...	15	80	64	50	7 $\frac{1}{2}$	20	10	3			
1859	Do.	...	...	16	72	58	44	8 $\frac{1}{2}$	22	...	11			
1860	Do.	...	...	17	75	60	40	8 $\frac{1}{4}$	18	10	10			
1861	Do.	...	...	18	77	56	46	8	20	5	4			
1862	Do.	...	...	19	75	51	40	7	13	7	4			
1863	Do.	...	...	20	75	60	45	8 $\frac{1}{2}$	21	3	8			
1864	Do.	...	...	21	75	60	56	7 $\frac{1}{2}$	28	4	3	1	2	9
1865	Do.	...	...	22	70	42	45	6 $\frac{1}{2}$	13	2	5			
1866	Do.	...	...	23	75	56	52	6 $\frac{1}{2}$	16	5	5			
1867	Do.	...	...	24	70	48	45	7	15	3	9			
1868	Do.	...	...	25	70	47	46	6 $\frac{1}{2}$	12	5	8			
1869	Do.	...	...	26	65	33	32	5 $\frac{1}{2}$	6	1	6			
1870	Do.	...	...	27	56	32	44	4 $\frac{1}{2}$	6	10	8			
1871	Do.	...	...	28	59	33	46	4 $\frac{1}{2}$	5	9	2			
1872	Do.	...	...	29	50	24	35	4 $\frac{1}{2}$	3	10	8			
1873	Do.	...	...	30	48	21	34	3 $\frac{1}{2}$	2	5	11			
1874	Do.	...	...	31	34	14 $\frac{1}{2}$	...	...	...	...	...	1	...	...
1875	Do.	...	...	32	32	12	...	...	...	...	...			
1876	Do.	...	...	33	18	9 $\frac{1}{2}$	...	...	...	...	...			

5. In the following notes, or critical examination of each plantation I have classed the soils as alluvial, gneiss, and laterite, and the anticipated yield per acre as Full, $\frac{1}{2}$ ths, $\frac{1}{3}$ ths, $\frac{1}{4}$ ths, or Nil.

6. In all the more level or lower portions of the plantations the soil is alluvial and the growth splendid, and there can, I think, be no doubt as to the rapid development of the timber, and of the yield I have calculated on from all this portion, and it is all entered as Full.

7. That entered as $\frac{1}{4}$ ths is chiefly gneiss or gneiss and alluvial and the growth here is almost as good as on the alluvial, and much of it will probably yield full crop though only entered at $\frac{1}{4}$ ths; it may also be expected that the timber may be of better quality though probably of somewhat slower growth.

8. On most of the rising ground and hillocks about the plantations laterite crops up more or less, or there is a laterite bottom; or laterite and gneiss are mixed; those portions entered as $\frac{1}{3}$ ths and $\frac{1}{4}$ ths are where the laterite is more or less disintegrated and the growth now quite promising, though very much slower than on the alluvial and the fall of the trees very considerably shorter; it is much more difficult to form an opinion of the ultimate crop in these portions or to fix the age for maturity. The older portions of this class have taken a wonderful start

during the last 4 or 5 years, and I do not think I have over-estimated the yield. Further examination and alteration in the classification will here be necessary every 5 years or every decade as the growth advances, and in estimating the future yield I have only done the best I can with the data before me. It is possible that a large percentage of these trees may mature when of only small size, but Mr. Ferguson does not expect this, as he has cut very good indigenous teak on similar soils in the surrounding forest.

9. All those portions of the plantations in which the growth is very poor from the latrite being more or less impermeable I have entered as *Nil*, and I have treated in a similar way nearly all those parts where the soil is swampy (apparent in the dry weather from rank sedges taking the place of grass). I have had to include a very large area in this class, viz., 509 acres or more than one-seventh of the whole. It must not, however, be supposed that this area is bare; it is all more or less covered with trees but the growth very doubtful. On the tops and upper slopes of many of the hillocks where the laterite much predominates or is very impermeable, it is already quite evident that the trees can come to nothing, and in some places many are already dead or dying; but in this 509 acres there is much that might be classed at $\frac{1}{4}$ th, only I have considered it best to be on the safe side and not too sanguine, and even in the poorer portions here and there trees will push through the laterite or overcome the moisture of the swampy soils and give fair timber.

10. The acreage of the plantations is by actual survey; the classification of the area according to the anticipated yield is only approximate, though I think nearly correct, as both Mr. Ferguson and I took great pains with it. When the plantations are thinned out to what is to stand for the ultimate crop (i.e., 60 trees to the acre), we shall require large plans of each, with exact classification of areas and fullest particulars on all points, but such would be premature at present.

THE CONSERVATOR'S NOTES ON EACH YEAR'S PLANTATION.

11. 1842 *Plantation*, area 30.93 acres. This was the first attempt at planting; it is a very irregular plantation compared to any of the others (as there was not a clean fell of the indigenous forest), and the planted teak is mixed with much indigenous teak of rambling growth and some jungle trees, but most of the latter have been felled out by Mr. Ferguson to give light and air to the planted teak. It is in two blocks on opposite sides of the Nelambur river near the palace; the soil near the river-bank is all alluvial and the growth fine, though for a long time it had suffered and been retarded for want of light and air; the rest of the plantation has laterite in the soil, but the growth is fair.

The girths at 6 feet from the base of three amongst the larger trees were as follows:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
5	1 $\frac{1}{2}$	5	0	4	10

The average girth of the trees in the plantation, taken from a considerable number of measurements, is 2 feet 5 $\frac{1}{2}$ inches; the average height is 80 feet.

		Acres.	
Classification of acreage	...	16	...
	...	14.93	...

Three small mahogany seedlings (age one year) are growing very well here, and there is a promising though very young clump of the giant bamboo from Burma.

12. 1844 *Plantation*, area 62.93 acres. This is the first regular plantation: it is in three different blocks as follows:—

1st *Block* on the left bank of the Nelambur river near the palace, area 27.94 acres.

All alluvial and a very fine plantation. Trees now standing at about 100 to 120 to the acre. The girths of six amongst the larger trees were as follows:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
6	2	6	2	5	11
5	10	6	4	6	8

	Feet.	Inches.
Average height	95	0
Do. girth	3	0½

2nd Block on the right bank of same river, in same locality, area 30.65 acres.

All alluvial; a splendid plantation. Trees now standing at about 100 to 120 to the acre.

	Feet.	Inches.
Average height	95	0
Do. girth	3	2½

3rd Block on right bank of river, in same locality, area 4.34 acres.

Alluvial, but with laterite bottom and very poor for its age. The girth of one of the largest trees 5 feet 6 inches.

	Feet.	Inches.
Average height	80	0
Do. girth	2	5

	Acres.	
Classification of acreage	56	= Full.
	6.93	= ¾ths.

13. 1845 Plantation, area 61.33 acres. This is in three different blocks, viz., two adjoining each other on the right bank of the Nelambur river, about 3 miles from Nelambur, and the third block on the same bank of the same river and close to the palace.

Blocks 1 and 2, Yedacode, area 28.14 acres.

A fine plantation, about 9 acres all alluvial, and 13 or 14 acres gneiss and alluvial equally good, and some 6 acres laterite; pretty fair with no symptom of decay; 22 acres classed as Full, 6.14 acres as ¾ths. Trees now standing about 100 to 120 to the acre.

	Feet.	Inches.
Average height	90	0
Do. girth	2	9

3rd Block, Ellanjerry, area 33.19 acres.

All alluvial and exhibiting the finest growth in Nelambur. The girths of four amongst the larger trees were as follows:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
5	8	5	4	5	10	5	9

	Feet.	Inches.
Average height	95	0
Do. girth	2	11½

	Acres.	
Classification of acreage	55.19	= Full
	6.14	= ¾ths.

14. 1846 Plantation, area 110.62 acres. This is in three different blocks, all on the right bank of the Nelambur river.

1st Block, Yedacode, area 44.78 acres.

Alluvial and very good throughout: 30 acres Full, 12 acres ¾ths; a small bit of hilly land (adjoining the Plantation 1850) about 2.78 acres, very poor (Nil). The girths of four amongst the larger trees were as follows:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
5	9	6	4	5	9	5	9

	Feet.	Inches.
Average height	75	0
Do. girth	2	7½

2nd Block, area 32.80 acres.

About 9 or 10 acres alluvial, very good; about 3 acres or so adjoining the Plantation 1849, laterite, very poor (Nil); the balance hilly and laterite.

3rd Block, area 33.4 acres.

Some 19 or 20 acres alluvial, very good; some 2 acres Nil; the balance indifferent.

	Acres.	
Classification of acreage	60	= Full.
	24	= ¾ths.
	16	= ¾ths.
	3	= ¾ths.
	7.62	= Nil.
	110.62	

15. 1847 Plantation, area 118.53 acres. In three blocks, the 1st block a little away from the right bank of the Nelambur river, 3½ miles from Nelambur; the 2nd block on the left bank, adjoining the 1848 Plantation; 3rd block on right bank of same river, opposite the palace.

1st Block, Yedacode, area 54.61 acres.

About one-half is alluvial, the rest is higher ground, and gneiss and laterite are present; the growth in places very good, but generally inferior to the alluvial, and there are failures and the trees further apart: a small hilly tract quite a failure (Nil).

30	acres	...	...	...	...	...	= Full.
12	do.	...	...	...	...	...	= ¾ths.
7.8	do.	...	...	...	...	...	= ¾ths.
5.53	do.	...	...	...	...	...	= Nil.

	Feet.	Inches.
Average height on the alluvial	80	0
Do. girth on do.	2	11
Do. height on the gneiss and laterite	50	0
Do. girth on do. do.	2	0½

2nd Block, area 29.29 acres.

Mostly alluvial and very good; there is a ridge of some acres of gneiss and laterite, but with a small exception it shows very fair growth.

20	acres	...	...	...	...	...	= Full.
9.29	do.	...	...	...	...	...	= ¾ths.

	Feet.	Inches.
Average girth	2	9

3rd Block, area 34.63 acres.

All the alluvial of magnificent growth.

20	acres	...	...	...	...	...	= Full.
10.63	do.	...	...	...	...	...	= ¾ths.
4	do.	...	...	...	...	...	= ¾ths.

The girths of six trees amongst the larger ones were as follows:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
4	2	3	10	4	2
4	4	5	5	5	10½

	Feet.	Inches.
Average height	90	0
Do. girth	2	11

Classification of acreage	Acres.			
	70	...	...	= Full.
	20	...	...	= $\frac{1}{4}$ ths.
	16	...	...	= $\frac{1}{2}$ ths.
	7	...	...	= $\frac{1}{4}$ ths.
	5.53	...	...	= Nil.
	118.53			

16. 1848 *Plantation*, area 182.53 acres. In three blocks: the 1st block along the left bank of the Nelambur river, close to Nelambur; the 2nd block on the right bank of Kruruampoya; the 3rd block on the right bank of the Nelambur river, opposite the palace.

1st Block, Ormacode, area 84.34 acres.

40	acres alluvial	...	...	...	= Full.
12	do. with gneiss and a little laterite	...	...	...	= $\frac{1}{4}$ ths.
10	do. laterite and gneiss, fairly good	...	...	...	= $\frac{1}{2}$ ths.
16	do. similar, but indifferent	...	...	...	= $\frac{1}{4}$ ths.
6.34	do. a hilly portion of laterite showing exceedingly poor growth	...	...	...	= Nil.

		Feet.	Inches.
Average height on alluvial with laterite	...	85	0
Do. girth on do. do.	...	3	0 $\frac{1}{2}$
Do. height on laterite and quartz	...	45	0
Do. girth on do. do.	...	1	11 $\frac{1}{2}$

2nd Block, Yedacode, area 82.15 acres.

46	acres alluvial	...	...	...	= Full.
14	do. gneiss, growth good	...	...	...	= $\frac{1}{4}$ ths.
12	do. laterite, fair	...	...	...	= $\frac{1}{2}$ ths.
10.15	do. poor laterite	...	...	...	= Nil.

		Feet.	Inches.
Average height on alluvial	...	85	0
Do. girth on do.	...	2	10 $\frac{1}{2}$

3rd Block, area 16.4 acres.

14	acres alluvial, first class	...	...	...	= Full.
2.4	acres	...	...	...	= $\frac{1}{4}$ ths.

		Feet.	Inches.
Average height	...	90	0
Do. girth	...	2	6 $\frac{1}{2}$

Classification of acreage	Acres.			
	100	...	...	= Full.
	26	...	...	= $\frac{1}{4}$ ths.
	24	...	...	= $\frac{1}{2}$ ths.
	16	...	...	= $\frac{1}{4}$ ths.
	16.53	...	...	= Nil.
	182.53			

17. 1849 *Plantation*, area 134.53 acres. In two blocks: the 1st block on the left bank of the Kruruampoya river; the 2nd block on the right bank of the same.

1st Block, 89.95 acres.

25	acres alluvial	...	...	...	= Full.
16	do.	...	...	...	= $\frac{1}{4}$ ths.
25	do with laterite	...	...	...	= $\frac{1}{2}$ ths.

A very poor knoll, adjoining the 1850 *Plantation*, about 4 acres, Nil; another very indifferent laterite hill, about 20 acres, Nil.

		Feet.	Inches.
Average height on alluvial	...	85	0
Do. girth on do.	...	2	4 $\frac{1}{2}$

2nd Block, 44.58 acres.

30	acres alluvial, very good indeed	...	...	...	= Full.
4	acres	...	...	...	= $\frac{1}{4}$ ths.
10.58	acres alluvial with a little laterite	...	...	...	= $\frac{1}{2}$ ths.

		Feet.	Inches.
Average height on alluvial	...	90	0
Do. girth on do.	...	2	9 $\frac{1}{2}$

Classification of acreage	Acres.			
	55	...	...	= Full.
	20	...	...	= $\frac{1}{4}$ ths.
	25	...	...	= $\frac{1}{2}$ ths.
	11	...	...	= $\frac{1}{4}$ ths.
	23.33	...	...	= Nil.
	134.53			

18. 1850 *Plantation*, area 132.22 acres. In three blocks: the 1st block near the right bank of the Nelambur river opposite the palace; the 2nd $2\frac{1}{2}$ miles from Nelambur, separated from the right bank of Nelambur river by the 1846 *plantation*; 3rd block right bank of the same river, but separated from the river by a portion of 1846 *Plantation* and nearly opposite the palace.

1st Block, Ramabur, area 16.40 acres.

All alluvial and classed full. Measurements amongst the larger trees:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
3	8	4	0	3	10	4	1

		Feet.	Inches.
Average height	...	75	0
Do. girth	...	2	2 $\frac{1}{2}$

2nd Block, Ellenjerry, area 66.15 acres.

A hilly and indifferent *plantation*.

16	acres chiefly gneiss	...	...	...	= Full.
10	acres laterite, fair	...	...	...	= $\frac{1}{4}$ ths.
40.15	acres laterite with very poor growth	...	...	...	= Nil.

		Feet.	Inches.
Average height on laterite $\frac{1}{4}$ th	...	50	0
Do. girth on the 26 acres	...	1	9 $\frac{1}{2}$

3rd Block, Yedacode, area 49.67 acres.

A very wretched *plantation*; 14.60 acres alluvial with much laterite, equal to the 1st block; the rest Nil. All the centre of the *plantation* is a laterite hill which has quite gone out and is now covered with Irul (*Xylia*), this is about 25 acres; and a laterite hill at the upper end, about 9 acres has also gone out, and a knoll adjoining 49 of the 14.60 acres is poor and apparently going out. Measurements of large trees:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
3	4 $\frac{1}{2}$	3	2	3	1

		Feet.	Inches.
Average height	...	70	0
Do. girth	...	1	10 $\frac{1}{2}$

Classification of acreage	Acres.			
	32	...	...	= Full.
	25	...	...	= $\frac{1}{4}$ ths.
	75.22	...	...	= Nil.
	132.22			

19. 1851 *Plantation*, area 147.19 acres. All in one block, partly on the right bank of the Kruruampoya.

		Acres.			
Classification of acreage ...	55	alluvial	...	...	= Full.
	25	...	...	...	= $\frac{1}{4}$ ths.
	15	laterite fair	...	...	= $\frac{1}{4}$ ths.
	15	do. indifferent	...	...	= $\frac{1}{4}$ ths.
	37.19	do. bad	...	...	= Nil.
		147.19			

Measurements amongst the larger trees on the 55 acres :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
5	2	5	0	4	6	4	8
						Feet.	Inches.
Average height						80	0
Do. girth						2	7 $\frac{1}{2}$
Do. height on 15 acres $\frac{1}{4}$ ths						60	0
Do. girth on do.						2	2 $\frac{1}{2}$

20. 1852 *Plantation*, area 38.57 acres. All in one block between the palace and Nelambur river.

		Acres.			
Classification of acreage ...	20	alluvial	...	...	= Full.
	10	laterite bottom	...	...	= $\frac{1}{4}$ ths.
	5	do.	...	...	= $\frac{1}{4}$ ths.
	3.57	do.	...	...	= Nil.
		38.57			

		Feet.	Inches.
Average height on the 20 acres alluvial		75	0
Do. girth on do. do.		2	1 $\frac{1}{2}$
Do. height on the 10 acres $\frac{1}{4}$ ths		50	0
Do. girth on do. do.		1	9 $\frac{1}{2}$

21. 1853 *Plantation*, area 55.60. In two blocks; 1st on the left bank of Nelambur river, 2nd on right bank.

1st Block, area 34.89 acres.

A fair plantation, mostly alluvial.

18 acres alluvial	...	...	...	...	= Full.
10 acres	...	...	...	...	= $\frac{1}{4}$ ths.
6.89 acres indifferent	...	...	...	...	= $\frac{1}{4}$ ths.

		Feet.	Inches.
Average height on alluvial		65	0
Do. girth		2	3 $\frac{1}{2}$

2nd Block, area 20.71 acres.

6 acres alluvial	...	...	...	...	= Full.
9 acres	...	...	...	...	= $\frac{1}{4}$ ths.
5.71 acres	...	...	...	...	= Nil.

This is divided by a paddy-field into two portions, the 1st portion being 12.93 acres; on the best part of this the average height was 55 feet and the average girth 1 foot 10 $\frac{3}{4}$ inches, and measurements amongst the larger trees gave 2 feet 9 $\frac{1}{2}$ inches, 2 feet 9 inches, 2 feet 8 inches. On the poorer part the average height was 45 feet and the average girth 1 foot 5 $\frac{1}{4}$ inches.

The 2nd portion beyond the paddy-field, area 7.78 acres, alluvial but indifferent, growth will probably be good, but at present backward from the shade of

indigenous teak trees that were left standing, these have lately been cleared away and the growth is improving.

		Acres.			
Classification of acreage ...	24	alluvial	...	...	= Full.
	10	do.	...	...	= $\frac{1}{4}$ ths.
	9	indifferent	...	...	= $\frac{1}{4}$ ths.
	6.89	do.	...	...	= $\frac{1}{4}$ ths.
	5.71	do.	...	...	= Nil.
		55.30			

22. 1854 *Plantation*, *Panyangote Block*, area 92.33 acres. All in one block on the Nelambur river to the east of Nelambur.

		Acres.			
Classification of acreage ...	60	alluvial, very good	...	...	= Full.
	15	do. and gneiss	...	...	= $\frac{1}{4}$ ths.
	10	gneiss and laterite	...	...	= $\frac{1}{4}$ ths.
	7.33	laterite, poor	...	...	= $\frac{1}{4}$ ths.
		92.33			

Measurements amongst the larger trees on the 60 acres alluvial :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
4	5	4	2 $\frac{1}{2}$	4	4	3	0
3	8 $\frac{1}{2}$	3	10	4	0 $\frac{1}{2}$	...	...
3	8 $\frac{1}{2}$	3	11	3	7	...	...
3	3	4	6 $\frac{1}{2}$	3	1	...	...

This alluvial portion shows splendid growth. Many of the trees are 100 feet high; the tree that measured* 4 feet 0 $\frac{1}{2}$ inch in girth had a boll 80 in height and contained at least 80 cubic feet.

		Feet.	Inches.
Average girth of trees		2	1 $\frac{1}{2}$

23. 1855 *Plantation*, *Panyangote Block*, area 100.32 acres. All in one block between the high road and the Plantation of 1854.

		Acres.			
Classification of acreage ...	30	alluvial with laterite	...	...	= $\frac{1}{4}$ ths.
	10	do. do.	...	...	= $\frac{1}{4}$ ths.
	60.32	very poor laterite	...	...	= Nil.
		100.32			

A very poor plantation. Measurements amongst the larger trees on the 40 acres :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
2	5 $\frac{1}{2}$	2	9 $\frac{1}{2}$	2	5 $\frac{1}{2}$
Average girth		...	...	1	7 $\frac{1}{2}$

24. 1856 *Plantation*, *Panyangote Block*, area 79.26 acres. All in one block on the left bank of the Nelambur river adjoining the Plantations of 1854 and 1855.

		Acres.			
Classification of acreage ...	40	alluvial	...	...	= Full.
	16	gneiss	...	...	= $\frac{1}{4}$ ths.
	15	laterite	...	...	= $\frac{1}{4}$ ths.
	8.26	do.	...	...	= Nil.
		79.26			

Measurements amongst the larger trees on the 40 acres :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
3	8	3	2½	3	8½	3	8½
						Feet.	Inches.
Average height on alluvial ...						85	0
Do. girth on do. ...						1	10½

25. 1857 *Plantation, Nelambur Block*, area 36.14 acres. All in one block on the right bank of the Nelambur river, 3 miles west of Nelambur.

Acres.			
Classification of acreage ...	8	alluvial, good ...	= Full.
	24	gneiss and laterite	= ¾ths.
	4.14	laterite ...	= Nil.
36.14			

	Feet.	Inches.
Average height on 8 acres alluvial ...	70	0
Do. girth on do. do. ...	2	0½
Do. height on 24 acres ...	50	0
Do. girth on do. do. ...	1	9½

26. 1858 *Plantation*, area 42.79 acres. All in one block in Nelambur on the left bank of the Kruruampoya.

Acres.			
Classification of acreage ...	20	alluvial	= Full.
	12	gneiss and laterite	= ¾ths.
	8	do. do. ...	= ¾ths.
	2.79	laterite ...	= Nil.
42.79			

Measurements amongst the larger girths :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
3	8½	2	8	3	7½
2	1	3	5½	2	5½
Average height on alluvial ...				Feet.	Inches.
Do. girth on do. ...				65	0
Greatest height ...				2	2
				80	0

27. 1859 *Plantation*, area 39.84 acres. All in one block adjoining the 1858 *Plantation*, on the left bank of the Kruruampoya.

Acres.			
Classification of acreage ...	25	alluvial ...	= Full.
	12	laterite ...	= ¾ths.
	2.84	do. ...	= Nil.
39.84			

Measurements amongst the girths of larger trees on the alluvial :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
3	6	3	3	2	5	2	8½
						Feet.	Inches.
Average height on alluvial ...						65	0
Greatest do. do. ...						77	0
Average girth do. ...						2	1

Measurements amongst the larger girths on the 12 acres laterite :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
2	3½	2	4½	2	1½
Average height on the same... ..				Feet.	Inches.
Do. girth do.				40	0
				0	10

28. 1860 *Plantation*, area 39.56 acres. All in one block on the right bank of the Kruruampoya.

Acres.			
Classification of acreage ...	20	alluvial, good ...	= Full.
	8	laterite, indifferent	= ¾ths.
	5	do. poor ...	= ¾ths.
	6.56	do. ...	= Nil.
39.56			

Measurements amongst the larger trees :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
3	2	2	10½	2	3	2	10	2	6½
Average height on alluvial ...						Feet.	Inches.		
Greatest do. do. ...						65	0		
Average girth do. ...						80	0		
Do. height on laterite ...						2	0½		
Do. girth do. ...						30	0		
						0	10		

The laterite portion is inferior, but will probably improve.

29. 1861 *Plantation*, area 86.5 acres. All in one block adjoining 1860, on the right bank of the Kruruampoya.

Acres.			
Classification of acreage ...	30	alluvial ...	= Full.
	37	laterite ...	= ¾ths.
	8	hilly laterite ...	= ¾ths.
	11.5	hilly ...	= Nil.
86.5			

Measurements amongst the larger trees on alluvial :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inch.	Feet.	Inches.
3	4½	3	2	3	1	2	9
Average height on alluvial ...						Feet.	Inches.
Greatest do. do. ...						65	0
Average girth do. ...						77	0
Do. do. on laterite ...						2	2
Do. height do. ...						1	2
						50	0

30. 1862 *Plantation*, area 50.11 acres. All in one block on the Kruruampoya, adjoining 1861.

Acres.			
Classification of acreage ...	30	alluvial ...	= Full.
	10	gneiss ...	= ¾ths.
	6	do. and laterite ...	= ¾ths.
	4.11	laterite ...	= Nil.
50.11			

Measurements of the girths of some of the larger trees on the 30 acres:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
3	6	3	1	3	1½
2	8	2	4	...	...
				Feet.	Inches.
Average girth of trees on alluvial		...		2	2
Do. height		...		65	0
Greatest do.		...		75	0

There are a great many overtopped trees in this plantation and thinning is very necessary.

31. 1863 *Plantation, Panyangote Block*, area 81.25 acres. All in one block east of Nelambur on left bank of Nelambur river, adjoining the 1856 Plantation.

		Acres.		
Classification of acreage	...	55	alluvial	... = Full.
	...	15	gneiss	... = ½ths.
	...	8	do. and laterite	... = ½ths.
	...	3.25	laterite	... = Nil.
		81.25		

Measurements of girths amongst the larger trees:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
2	6	2	7	3	1
2	7	2	10	3	1½
2	10	3	1	...	...
				Feet.	Inch.
Average height on alluvial		...		75	0
Do. girth on do.		...		1	8½

32., 1864 *Plantation*, area 121.71 acres. In two blocks, separated by the Karapoya river on the high road to the east of Nelambur.

1st Block, area 81.14 acres, on the right bank of the Karapoya in Waluvaisheri.

45 acres alluvial	...	...	...	...	...	Full.
11 do. do. with some laterite	...	...	...	...	...	½ths.
9 do. laterite	...	...	...	...	...	½ths.
3 do. do.	...	...	...	...	...	½ths.
13.14 acres swampy and gone out	...	...	...	...	...	Nil.

The growth here is quite similar to the next block.

2nd Block, area 40.57 acres, on the left bank of the Karapoya in Panyangote.

25 acres alluvial	...	...	...	...	...	Full.
5 do. .	...	...	...	...	...	½ths.
3 do. laterite	...	...	...	...	...	½ths.
5 do. where laterite predominates	...	...	...	...	...	½ths.
2.57 acres laterite	...	...	...	...	...	Nil.

Measurements among the larger trees:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
2	6½	2	11	3	4
2	6	3	1	3	5
				Feet.	Inches.
Average height on alluvial		...		70	0
Do. girth on do.		...		1	8½

		Acres.		
Classification of acreage	...	70	alluvial	... = Full.
	...	16	do. with laterite	... = ½ths.
	...	12	laterite	... = ½ths.
	...	8	do.	... = ½ths.
	...	15.71	swamp or laterite	... = Nil.

121.71

33. 1865 *Plantation*, area 56.63 acres. All in one block on the right bank of the Karapoya, only separated from Block No. 1 of 1864 by the high road to Wynad.

		Acres.		
Classification of acreage	...	35	alluvial	... = Full.
	...	16	laterite	... = ½ths.
	...	5.63	do.	... = ½ths.
	...	56.63		

Measurements of the girths amongst the larger trees:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
2	7½	2	5	2	5
				Feet.	Inches.
Average height on alluvial		...		65	0
Do. girth on do.		...		1	6½

In the centre of the plantation there is a very fine blackwood tree, a self-seedling. In 1865, when the site was planted, Mr. Ferguson informs me, it was a fine straight sapling but not above 3 feet in girth; it is now (February 1878) 5 feet 10 inches in girth at 6 feet up the trunk and has a clean straight boll of about 80 feet. This tree will be kept standing to test the rate of growth.

34. 1866 *Plantation*, area 128.64 acres. In two blocks on the right bank of the Karapoya in Waluvaisheri, separated by a block of 1869.

No. 1, *Northern Block*, area 96.34 acres.

46 acres alluvial or alluvial and gneiss	...	...	...	...	Full.
12 do. gneiss	...	...	...	...	½ths.
16 do. gneiss and laterite	...	...	...	...	½ths.
12 do. laterite	...	...	...	...	½ths.
10.34 acres laterite	...	...	...	...	Nil.

Measurements amongst the larger girths:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
2	4½	2	7½	2	5½
2	9½	2	10	...	...
				Feet.	Inches.
Average height on alluvial and gneiss		...		65	0
Do. girth on do.		...		1	4½

No. 2, *Southern Block*, area 32.30 acres.

30 acres alluvial or alluvial and gneiss	...	...	...	...	Full.
2.30 do. laterite	...	...	...	...	Nil.

Girths amongst the larger trees:—

Feet.	Inches.	Feet.	Inches.
3	1½	2	10½

Growth quite similar to No. 1 Block.

		Acres.		
Classification of acreage	...	76	alluvial or alluvial and gneiss	... = Full.
	...	12	gneiss	... = ½ths.
	...	16	do. and laterite	... = ½ths.
	...	12	laterite	... = ½ths.
	...	12.64	laterite	... = Nil.
		128.64		

35. 1867 *Plantation*, area 118.63 acres. In two blocks in Waluvaisheri, the first on the left bank of the Shurliar between blocks of 1866 and 1868, the 2nd block a little to the south-east of the first.

1st Block, area 41.31 acres.

39 acres alluvial	...	...	...	...	...	...	Full.
2.31 acres laterite	...	...	...	...	...	...	Nil.

Measurements amongst the larger girths :—

Feet.	Inches.	Feet.	Inches.
2	4½	2	10
2	5	2	10½
2	7	2	7

Average height on alluvial	...	...	...	Feet.	Inches.
Do. girth on do.	...	...	...	1	6½

2nd Block, area 77.32 acres.

41 acres alluvial or alluvial and gneiss	...	...	...	Full.
9 do. gneiss	...	...	...	¼ths.
12 do. laterite and gneiss	...	...	...	¼ths.
10 do. hilly and laterite	...	...	...	¼ths.
5.32 acres hilly and laterite, very poor	...	...	...	Nil.

Growth similar to No. 1 Block.

Classification of acreage	Acres.	...	...	...	...	...	...
80 alluvial or alluvial and gneiss	...	...	...	...	...	Full.	
9 gneiss	...	...	...	...	...	¼ths.	
12 laterite and gneiss	...	...	...	...	...	¼ths.	
10 laterite hilly	...	...	...	...	...	¼ths.	
7.63 laterite	...	...	...	...	...	Nil.	
	118.63						

36. 1868 *Plantation*, area 145.40 acres. In three blocks in Waluvaisheri, the 1st block north of the road leading to Wynad from Nelambur, the 2nd block north-east of the 1st on left bank of Shurliar, and the 3rd block north of the 2nd on the same bank of the same river.

1st Block, area 32.38 acres.

18 acres alluvial	...	...	...	...	...	Full.
4 do. alluvial and laterite	...	...	...	...	...	¼ths.
3 do. rather hilly and laterite	...	...	...	...	...	¼ths.
8 do. hilly with laterite	...	...	...	...	...	¼ths.
4.38 acres hilly laterite bottom and very poor growth	...	...	...	...	...	Nil.

Average girth on the 22 acres	...	...	...	...	Inches.
	...	...	...	...	11½

2nd Block, area 79.8 acre. A wonderfully good plantation.

35.6 acres alluvial	...	...	...	...	Full.
16 do. with laterite mixed	...	...	...	...	¼ths.
13 do. the same	...	...	...	...	¼ths.
7 do. laterite predominating	...	...	...	...	¼ths.
8.2 do. very poor laterite	...	...	...	...	Nil.

Measurements amongst the larger girths :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
2	4½	2	1½	1	9½
2	3½	1	11	...	...

Average height on the 51.6 acres	...	...	...	Feet.	Inches.
Do. girth on do.	...	...	...	1	0½

Inside but near the edge of this plantation, I came upon some well-grown natural teak trees; one had a splendid straight boll of 75 feet in length and a girth (at 6 feet from the base) of 6 feet, another had a girth of 7 feet 6 inches, and a third a girth of 7 feet 9½ inches with a boll which was forked at about 40 feet from the ground (from injury when young), but the girth very equal and scarcely tapering at all. Mr. Ferguson assured me that the largest of these trees was not over 4 feet in girth when he planted the site, but that they were very much shut out from light and air at that time by large jungle trees, and that the growth since he had felled for opening the plantation had been watched by him as he had been attracted by its wonderful rapidity. I had the tree of the largest girth felled to ascertain its age, and will allude to it further on.

3rd Block, area 33.94 acres.

All alluvial and first-class, and exhibiting, I think, the most wonderful growth for its age of anything in the Conolly plantations. Large trees very numerous.

Measurements amongst the larger girths—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
2	2	2	6	2	8
2	0	2	6	2	8
2	3	2	6½	3	0

Average height	...	...	...	...	Feet.	Inches.
Do. girth	...	...	...	...	1	8

On a few acres of this dry paddy was put down as an experiment with the crop of teak; no profit resulted as the grain was destroyed by various enemies, and the only result was a check to the early growth of the young teak saplings from too much shade.

Classification of acreage	Acres.	...	...	...	...	...	...
87 alluvial	...	...	...	...	...	Full.	
20 do. with laterite	...	...	...	...	...	¼ths.	
16 laterite	...	...	...	...	...	¼ths.	
10 do.	...	...	...	...	...	¼ths.	
12.40 laterite	...	...	...	...	...	Nil.	
	145.40						

37. 1869 *Plantation*, area 53.56 acres. In two blocks in Waluvaisheri, the 1st block on the Shurliar, east of No. 2 Block of 1868, 2nd block on right bank of the Karapoya between two blocks of the 1866 Plantation.

1st Block, area 39.36 acres.

16 acres alluvial	...	...	...	...	Full.
12 do. alluvial with a mixture of laterite	...	...	...	...	¼ths.
7 do. rather hilly and with laterite	...	...	...	...	¼ths.
4.36 do. laterite hill, the teak gone out and since planted with blackwood (<i>Dalbergia latifolia</i>) which is growing	...	...	...	...	Nil.

This plantation shows very rapid growth, and there are many prominently large trees.

Measurements amongst the larger girths all well within the plantation :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
1	10½	2	1	2	6½	2	2½
2	6½	1	10	2	0½	...	...

Average height on the 28 acres	...	...	...	...	Feet.	Inches.
Do. girth on do.	...	...	...	...	1	2½

No. 1 Block. All alluvial and classed full growth; not quite equal to the best portion of the

		Acres.	
Classification of acreage	...	{ 30 alluvial	... = Full.
		{ 12 do. with laterite	... = 4ths.
		{ 7 hilly and laterite	... = 3ths.
		{ 456 do. do.	... = Nil.
		5356	

Wild elephants have the run of these Nellocootah plantations, and do very great damage. Besides the injury from elephants, deer, &c., it has been impossible to attempt to keep them clear of the rank growth of shrubs, weeds, and creepers, or to attend to pruning, both so important with reference to the admission of sufficient light and air. Fire has however been kept out, and notwithstanding the disadvantages, I believe we shall eventually see some finer growth here than anywhere else in Nelambur, and probably timber of a better quality.

A general weeding took place in 1872 and again in July 1876, but this and the next plantation have not been touched since, and there is now a rank growth of shrubs (chiefly *Desmodium cephalotes* and *Helicteres isora*) 6 to 10 feet high, weeds, grass and creepers, which must retard the growth of the young teak, but the teak trees, when they grow up, will in time keep this down.

	Acres.		
Classification of acreage ...	{	25 gneiss hill with alluvial growth very good ...	= Full.
		25 alluvial flat along river bank	= Do.
		12 alluvial and some laterite	= 3ths.
		8 damp ground	= 2ths.
		4-23 swampy	= Nil.
		74-23	

The 25 acres alluvial on the river bank shows splendid growth, but unless arrangements be made to catch or drive away the wild elephants it will have to be classed as $\frac{4}{5}$ ths instead of Full, as Mr. Ferguson estimates the damage of late at about 40 per cent., and it is increasing and the animals becoming very impudent and troublesome.

Measurements amongst the larger girths on the gneiss hill :—

Feet.	Inches.	Feet.	Inches.
1	10½	1	11½
1	10½	2	2½

Measurements amongst the larger girths on the alluvial of river bank :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
1	10	2	2	2	.6	1	10
2	2½	2	1	1	11½	...	...
						Feet.	Inches.
Average girths on alluvial		...	...	...	...	1	1½
Do. do. on gneiss hill		...	...	...	...	1	0½
Do. height	...	...	...	...	...	40	0
Greatest do.	...	...	...	...	...	57	0

This is an exceedingly good plantation, the growth has a sturdier look than anything at Nelambur, but there is much damage from wild elephants, which is on the increase.

	Acres.			
Classification of acreage ...	{ 36 alluvial ...	...	= Full.	
	{ 10 swampy soil ...	...	= Nil.	
	46			

Measurements amongst the larger girths:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
1	8 $\frac{1}{2}$	1	11 $\frac{1}{2}$	1	7
1	11	1	8 $\frac{1}{2}$	2	1 $\frac{1}{2}$
				Feet.	Inches.
Average height				40	0
Greatest do.				55	0
Average girth				1	8 $\frac{1}{2}$

40. 1872 *Plantation*, area 207.56 acres. All in one block in Chetamborai.

	Acre.		
Classification of acreage ...	{	110 alluvial ...	= Full.
		30 do. with some gneiss	= 4ths.
		25 do. with gneiss and laterite ...	= 3ths.
		12 soil too damp but trees now making a start	= 2ths.
		30-56 swampy ...	= Nil.
		207-56	

Measurements amongst the larger girths on the 110 acres :—

Feet.	Inches.	Feet.	Inches.
2	1½	1	9½
1	9	1	8½
1	6½		
		Feet.	Inches.
Average height on alluvial	...	42	0
Do. girth do.	...	1	1½
Do. height on the 25 acres 3ths.	...	20	0

41. 1873 *Plantation*, area 141.47 acres. In two blocks, 1st block is Chetamborai adjoining the 1872 *Plantation* ; 2nd block at Amrapolliam.

1st Block, Chetamborai, area 99·8 acres.

45 acres alluvial	...	...	...	...	...	= Full.
20 do. do. and gneiss	...	...	...	...	...	= 4ths.
15 do. gneiss and laterite	...	...	...	...	...	= 2ths.
10 do. laterite poor	...	...	...	...	...	= 3ths.
9·8 acres swampy	...	...	...	...	...	= Nil.

Measurements amongst larger girths on the 65 acres :—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
1	4 $\frac{1}{2}$	1	4	1	6
1	7 $\frac{1}{2}$	1	4	1	6 $\frac{1}{2}$
				Feet.	Inches.
Average height on the same				30	0
Do. girth on do.				0	10 $\frac{3}{4}$

There is a fine young mahogany tree in this plantation, growing splendidly amongst the teak; it is 30 feet high, girth at the base 1 foot 5½ inches, and at 6 feet high 1 foot 1½ inches.

2nd Block, Amrapolliam, area 42.39 acres. On the right bank of the Cherapoya.

33 acres alluvial = Full.
9.39 do. more or less swampy = Nil; though trees here and there are showing growth.

Measurements amongst the larger girths:—

Feet.	Inches.	Feet.	Inches.
1	0½	1	3
1	3½	1	0
1	3½		

	Feet.	Inches.
Average height	22	0
Greatest do.	33	0

Classification of acreage	Acres.	
78 alluvial	...	= Full.
20 do. and gneiss	...	= ¾ths.
15 gneiss and laterite	...	= ¾ths.
10 laterite, poor	...	= ¾ths.
18.47 swampy	...	= Nil.
	141.47	

42. 1874 Plantation, area 160.49 acres. In two blocks, 1st block in Chetamborai adjoining the 1873 Plantation; 2nd block at Amrapolliam.

1st Block, Chetamborai, area 91.46 acres.

15 acres alluvial	...	= Full.
10 do. do. with some laterite	...	= ¾ths.
10 do. laterite, mixed	...	= ¾ths.
10 do. do.	...	= ¾ths.
10 do. do.	...	= Nil.
6.46 acres swampy	...	= Nil.

Measurements amongst larger girths on the alluvial:—

Foot.	Inches.	Foot.	Inches.
1	1½	1	2½
Average height on alluvial	25	0	
Do. girth on do.	0	8½	

2nd Block, Amrapolliam, area 69.3 acres.

30 acres alluvial	...	= Full.
5 do. do. and laterite	...	= ¾ths.
15 do. do. do.	...	= ¾ths.
10 do. laterite, poor	...	= ¾ths.
9.3 do. do. very poor	...	= Nil.

Measurements amongst the larger girths:—

Feet.	Inches.	Feet.	Inches.
1	2½	0	10½
1	0½	0	10½
0	10½	0	10½
Average height	18		
Greatest do.	30		

Classification of acreage	Acres.	
75 alluvial	...	= Full.
15 do. and laterite	...	= ¾ths.
25 do. do.	...	= ¾ths.
20 laterite	...	= ¾ths.
25.49 do. very poor or swampy	...	= Nil.
	160.49	

43. 1875 Plantation, area 160.91 acres. In two blocks, 1st block in Chetamborai adjoining the 1874 block; the 2nd block in Amrapolliam.

1st Block, Chetamborai (not surveyed), area approximate 100 acres.

40 acres alluvial	...	= Full.
10 do. do. with some laterite and gneiss	...	= ¾ths.
7 do. laterite	...	= ¾ths.
13 do. do.	...	= ¾ths.
30 acres, very indifferent, laterite	...	= Nil.

Measurements amongst the larger girths:—

Foot.	Inches.	Foot.	Inches.	Foot.	Inches.
1	1½	1	2	1	0½
Average height on alluvial	25	0			
Do. girth	0	7½			

2nd Block, Amrapolliam, area 60.91 acres. On the right bank of Kudrapoya.

33 acres alluvial	...	= Full.
5 do. hilly gneiss	...	= ¾ths.
8 do. do. laterite	...	= ¾ths.
4 do. do. gneiss and laterite	...	= ¾ths.
10.91 acres hilly laterite	...	= Nil.

Measurements amongst the larger girths:—

Foot.	Inch.	Foot.	Inches.	Foot.	Inches.	Foot.	Inches.
1	0	0	11½	0	11	0	11
Average height on alluvial	10						
Greatest do.	24						

Classification of acreage	Acres.	
73 alluvial	...	= Full.
15 do. and gneiss	...	= ¾ths.
15 do. and laterite	...	= ¾ths.
17.10 laterite	...	= ¾ths.
29 laterite	...	= Nil.
	160.91	

44. 1876 Plantation, area (not surveyed) 149 acres. In three blocks at Amrapolliam; 1st block on the right bank of Kudrapoya, 2nd block separated from No. 1 by paddy-fields, 3rd block on left bank of Cherapoya.

1st Block about 35 acres alluvial, the rest two laterite hills. Classed as follows, rather with respect to the probable future growth than with reference to anything on it at present:—

35 acres alluvial	...	= Full.
10 do. laterite	...	= ¾ths.
5 do. do.	...	= ¾ths.
20 do. do.	...	= Nil.

The jungle and forest on the whole of the site was felled and burnt in 1874 and not planted till 1876 owing to a want of plants; this has never occurred elsewhere, and only happened owing to a change at the time in the officers in charge. A rank growth sprang up between the burn and the plant, and this took so much out of the surface soil that the young seedlings would not grow properly; (it is just the same with coffee if there be a delay in planting after the burn and weeds be allowed to grow). 1876 was also a very poor monsoon; this block is therefore a wretched failure at present, but Mr. Ferguson is going to replant all casualties.

2nd Block, 20 acres. A poor laterite hill, and present condition the same as No. 1 Block.

5 acres = $\frac{3}{4}$ ths.
15 do. = Nil.

3rd Block, 59 acres. The growth is fair and often good in this block, but many hundreds of the young seedlings have been attacked (in a way never known to anything like the extent before) by a destructive borer, and they will have to be cut bodily down and spring again from the root.

35 acres alluvial = Full.
10 do. do. = $\frac{3}{4}$ ths.
10 do. do. = $\frac{3}{4}$ ths.
4 do. do. = Nil.

Classification of acreage ...	Acres.					
	70	...	...	...	...	= Full.
	25	...	...	...	...	= $\frac{3}{4}$ ths.
	15	...	...	...	...	= $\frac{3}{4}$ ths.
	39	...	...	...	...	= Nil.
	149					

45. Purchased Plantation, area 87.44 acres. This is at Amrapolliam on the Cherrapoya, and was purchased for 10,000 Rupees.

About 62 acres were planted apparently about the year 1861 and the rest probably in 1860.

The alluvial portion of the older planting is very good, and there are many prominently large trees. Measurements amongst the larger trees on the outskirts of plantation:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
3	1½	3	0½	2	7½

Inside the plantation:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
2	7	3	4½	3	2	3	3½

					Feet.
Average height on alluvial	...	...	...	...	70
Greatest height on do	...	...	...	...	80

The laterite hilly portion is much inferior to the alluvial.

Measurements amongst the larger girths on the outskirts of the plantation:—

Feet.	Inches.	Feet.	Inches.
2	3	2	10
1	10½	2	7
1	9	2	0½
2	2		

Within the plantation:—

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
1	8	1	7½	1	8
1	8	1	7		

Average height	...	...	...	...	...	Feet.
Greatest do	...	...	...	...	...	35
						65

In the younger or 1869 portion there are many jungle indigenous trees mixed with the planted teak.

Average height	...	...	...	...	...	Feet.
						50

Measurements of large girths:—

Feet.	Inches.	Feet.	Inches.
2	0½	2	0
1	11	1	10½

Classification of acreage...	Acres.				
	60 alluvial	...	...	...	= Full.
	22 laterite hilly	...	...	...	= $\frac{3}{4}$ ths.
	5.44 do	...	...	...	= Nil.
	87.44				

46. In addition to the above plantations, there are a few small tracts of natural teak supplemented by planting within the Trikalayur Pagoda land which were planted about the year 1844. These are as follows:—

1st.—The Arimbrakuta Plantation, 4 miles south-west of Ariokode, 22 acres, of which 19 acres may be calculated at $\frac{3}{4}$ ths and 3 acres as Nil.

2nd.—Manglasherry No. 1, 8 miles west of Ariokode, on the left bank of the Beypore river, 10.74 acres, classed at $\frac{3}{4}$ ths.

Manglasherry No. 2, a small separate block, 1.1 acre, classed at $\frac{3}{4}$ ths.

3rd.—Three blocks on the right bank of the Iravangipoya, which joins the Beypore river and about 3 miles from the last two.

Manglasherry No. 3, 19.58 acres, of which 18 acres are Full and 1.58 acres Nil.

Patulathoo and Chitarakal, 8.35 acres, all classed Full.

47. The following statement shows the areas of each year yielding full crop: $\frac{3}{4}$ ths, $\frac{3}{4}$ ths, $\frac{3}{4}$ ths or Nil:—

Year.	Full.	$\frac{3}{4}$ ths.	$\frac{3}{4}$ ths.	$\frac{3}{4}$ ths.	Nil.	Total Acreage.
1842	16.00	...	14.93	...	...	30.93
1844	56.00	...	...	6.93	...	62.93
1845	55.00	...	6.33	...	...	61.33
1846	60.00	24.00	16.00	3.00	7.62	110.62
1847	70.00	20.00	16.00	7.00	5.53	118.53
1848	100.00	26.00	24.00	16.00	16.53	182.53
1849	55.00	20.00	25.00	11.00	23.53	134.53
1850	32.00	...	25.00	...	75.22	132.22
1851	55.00	25.00	15.00	15.00	37.19	147.19
1852	20.00	...	10.00	5.00	3.57	38.57
1853	24.00	10.00	9.00	6.89	5.71	55.60
1854	60.00	15.00	10.00	7.33	...	92.33
1855	...	...	30.00	10.00	60.32	100.32
1856	40.00	...	16.00	15.00	8.26	79.26
1857	8.00	...	24.00	...	4.14	36.14
1858	20.00	...	12.00	8.00	2.79	42.79
1859	25.00	...	12.00	...	2.84	39.84
1860	20.00	...	8.00	5.00	6.56	39.56
1861	30.00	...	37.00	8.00	11.5	86.5
1862	30.00	10.00	6.00	...	4.11	50.11
1863	55.00	15.00	8.00	...	3.25	81.25
1864	70.00	16.00	12.00	8.00	15.71	121.71
1865	35.00	...	16.00	5.63	...	56.63

Year.	Full.	ftbs.	ftbs.	ftbs.	Nil.	Total Acreage.
1866 ...	76-00	12-00	16-00	12-00	12-64	128-64
1867 ...	80-00	9-00	12-00	10-00	7-63	118-63
1868 ...	87-00	20-00	16-00	10-00	12-40	145-40
1869 ...	30-00	12-00	7-00	...	4-56	53-56
1870 ...	30-00	...	12-00	8-00	4-23	74-23
1871 ...	36-00	...	...	...	10-00	46-00
1872 ...	110-00	30-00	25-00	12-00	30-56	207-56
1873 ...	78-00	20-00	15-00	10-00	18-47	141-47
1874 ...	75-00	15-00	25-00	20-00	25-49	160-49
1875 ...	73-00	15-00	15-00	17-10	40-91	160-91
1876 ...	70-00	...	25-00	15-00	39-00	149-00
Manglasherry Blocks ...	26-35	11-75	19-00	...	4-58	61-68
Purchased Plan- tation, 1861 and 1869 ...	60-00	...	...	22-00	5-44	87-44
Total ...	1787-35	325-75	530-25	273-78	300-84	3435-98

48. There are many thousand indigenous and planted blackwood saplings and trees about the plantations, estimated by Mr. Ferguson at about 80,000, of which probably 30,000 can be grown to a profit and will some day yield a very considerable revenue.

GENERAL REMARKS.

49. At about 30 years of age the saplings begin to stop growing in height, at least to any perceptible degree, and they begin to add very rapidly to their bulk; they also taper very much till this period, but soon after they stop growing in height the boll swells considerably upwards and the thickness becomes much more equal throughout.

50. Completely overtopped trees never come to anything in the struggle and should always be thinned out as soon as possible; they are, however, often left a few years standing if the market for saplings be slack or if there be any difficulty about labor.

51. The largest and finest trees are almost always on the outskirts of the plantations, at least up to a certain age, or whilst the trees stand close, which shows how necessary light and air is; but it is also remarkable to see how a few trees on every acre all over the areas take the lead and far outstrip their neighbors. In the older plantations where the trees are now standing at about 100, 120, or 140 only to the acre, many of the inside trees equal or nearly equal the largest on the outskirts; when the plantations are thinned out to hold only the final crop of 60 to the acre, the smaller trees will have disappeared and the growth will be still more uniform.

52. The trees are all wonderfully straight and with only one stem; a crooked tree, a forked tree, or even a fluted tree is very rarely to be met with; this is of course owing to the complete exclusion of fire, and to the exclusion of cattle and the assistance of the pruning knife whilst they were young, and to absence of creepers and Fici.

53. The immense length of boll in every tree will give these plantations an enormous advantage over any teak forest, and the yield here per acre will be out of all proportion to that in any natural forest in India; it however teaches us how much we can improve the yield of our forests by dividing them into blocks, excluding fire and cattle, and paying some attention to pruning whilst the saplings are young.

54. With such fine prospects before us in these plantations, it may occur to many that it would be better to extend these teak plantations to other districts rather than attempt to conserve forests and exclude cattle; the answer must be that

favorable localities are not available. Teak planting on the eastern side of the ghâts or anywhere except under the fullest influence of the south-west monsoon does not promise at all well, in fact it may be pronounced a failure; and teak planting on our mountains within the influence of the monsoon (where plenty of land is available) has hitherto been attended with very poor results. The seed is very difficult to germinate, and the young plants are attacked by all sorts of grubs, insects and vermin, and the subsequent growth, at least up to a certain age, very slow. Then, again, labor is very expensive or often difficult to procure at any price, and there are feverish seasons when supervision is nearly impossible; and last, though not least, the want of water carriage and the expense of transport. Along down the foot of the Cochin and Travancore ghâts there may be localities nearly as favorable as Nelambur, but I can indicate none belonging to this Government.

55. During my visit in January 1871 I thought that I perceived signs of premature maturity, and that the prospect of the trees yielding large timber was somewhat doubtful, and though I had the fact before me that fine teak was produced in the surrounding forest when associated with other trees, I was afraid that the crowding together of the teak without other associates might have an injurious effect. I was also then doubtful as to any successful growth on the laterite soils, and about that time I consequently wrote disparaging the plantations (*vide* my letter in Proceedings of the Board of Revenue, dated 18th June 1872). It is since that time that the older plantations have made such a wonderful start as far as the growth in bulk is concerned, the growth previously having been chiefly in height, and it is only in the last 4 or 5 years that the older portions on the better tracts of laterite have proved that they are fully establishing themselves and likely to give a good yield, though very inferior to that on the alluvial. All the trees are now as healthy as could be wished (the dying off of upper branches before observed on some trees having been caused by Loranths), and I have now few doubts whatever with reference to the future, and as will be seen further on, I anticipate an enormous yield and very large profits.

56. It is of course possible that the crowding together of so many individuals of the same species may induce disease at some future date or result in premature maturity amongst a certain percentage, but I can only state that there are no signs whatever of this at present, and that I do not myself anticipate any such result.

57. As a proof of the late rapid development, I may mention that two trees measured by me in March 1873 as 5 feet 10 inches and 5 feet 3 inches in girth, were measured in May 1876 as 6 feet 1 inch and 5 feet 4 inches,* dated 20th September 1876.

respectively, and in February 1878 they were 6 feet 8 inches and 5 feet 9 inches; and other trees in proximity with the tree now measuring 5 feet 9 inches now equal or exceed it in bulk, whereas they were less than 5 feet 3 inches in 1873.

PAST FINANCIAL RESULTS.

58. The two following statements show all expenditure (establishment and working charges) and all receipts up to date. Mr. Macgregor, in his report which is only down to 1874, eliminates all charges and receipts on the surrounding forests which are really part and parcel of the land handed over for planting, and he excludes the sale proceeds on timber cut in these tracts and on timber cut on the tracts actually planted; he also only debits a certain portion of the establishment charges (*i.e.*, one-third) against the plantations. This does not appear to me the proper way to treat the question. Certain tracts of forest are taken up by Government for planting, and the felling and sale of the timber removed from the portions planted and the treatment as forest of such portions not adapted for planting are all necessarily part of the same transaction and cannot be treated

separately. By the terms of the agreements we pay 30 per cent. on the net proceeds of all jungle timber cut off plantation sites and 50 per cent. on the same cut in the natural forest, and a stump fee of 1 Rupee on all teak and blackwood trees cut in the natural forest, so that when to these operations two-thirds of the pay of the establishment are also debited, there is a loss instead of a profit; so that Mr. Macgregor's plan is a little in favor of the plantations, although there is not much difference, but it leads to complication.

Abstract of Disbursements in the Conolly Teak Plantations at Nelambur from 1840-41 to 1877-78.

Years.	Mortgage or moiety of Kuttikanam paid to Jemmis.			Paid to Sanctioned Establishment.			Charges on Timber.			Plantations.						Total.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
Brought forward from 1840-41 to April 1862.	8,586	2	4	33,582	0	3	.....	.....	.....	.....	.....	.....	30,256	3	6	72,374	6	1
1862-63	.....	.....	.....	3,013	2	4	.....	.....	.....	.....	.....	.....	3,753	3	5	6,766	5	9
1863-64	.....	.....	.....	4,511	10	0	2,072	0	7	2,294	1	0	3,960	3	0	12,837	14	7
1864-65	.....	.....	.....	4,426	5	7	3,013	12	6	1,300	11	5	7,632	7	5	16,489	6	11
1865-66	.....	.....	.....	2,919	4	2	2,361	5	3	1,817	0	10	7,259	8	0	16,357	2	5
1866-67	.....	.....	.....	5,485	5	10	1,819	1	11	606	2	9	5,966	15	1	13,877	9	7
1867-68	.....	.....	.....	5,528	15	10	1,044	11	6	150	8	0	7,773	13	4	14,498	0	3
1868-69	.....	.....	.....	6,985	4	10	1,573	4	6	1,847	9	10	6,839	5	4	17,045	8	6
1869-70	4,102	13	2	6,316	6	3	1,967	4	9	50	8	6	5,606	0	7	18,043	3	3
1870-71	200	11	7	6,591	5	2	3,488	0	0	1,195	12	6	7,461	10	7	20,940	7	10
1871-72	5,200	0	0	6,820	0	3	3,962	2	6	1,106	5	3	8,823	6	7	25,911	14	7
1872-73	80,000	0	0	9,355	7	9	3,801	10	4	2,533	4	3	10,606	4	11	1,05,396	11	3
1873-74	2,318	8	10	11,942	13	2	2,690	6	6	2,600	12	1	12,490	4	7	31,942	13	2
1874-75	102	0	0	9,270	8	9	2,896	12	7	1,782	2	5	11,825	5	5	25,676	13	2
1875-76	100	0	0	9,107	13	11	6,774	3	0	2,175	1	1	8,591	9	6	27,048	11	5
1876-77	100	0	0	10,123	3	11	5,174	8	7	4,965	8	9	7,603	3	2	27,966	13	5
1877-78	180	0	0	9,555	5	11	370	5	9	7,592	10	6	5,483	1	2	23,271	7	4
Total	1,00,840	5	11	1,47,635	1	11	45,114	12	5	31,908	3	2	1,51,896	14	6	4,77,395	5	11

Abstract of Receipts in the Conolly Teak Plantations at Nelambur from 1840-41 to 1877-78.

Years.	Receipts by Sale of						Miscellaneous Receipts.	Total Receipts.							
	Timber.			Bamboos.					Saplings.						
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.			
Brought forward from 1840-41 to April 1862.	21,321	0	0	.....	.....	.....	573	0	3	21,894	2	3			
1862-63 ...	5,414	0	0	176	0	0	12,044	0	0	88	14	10	17,722	14	10
1863-64 ...	4,279	0	0	1,193	0	0	1,210	0	0	9	0	0	6,691	0	0
1864-65 ...	9,447	0	0	774	0	0	16,776	0	0	162	0	0	27,159	0	0
1865-66 ...	4,585	0	0	720	0	0	9,307	0	0	9	0	0	14,621	0	0
1866-67 ...	10,032	0	0	736	0	0	15,647	0	0	591	0	0	27,006	0	0
1867-68 ...	2,595	0	0	.....	.....	.....	500	0	0	2	0	0	3,097	0	0
1868-69 ...	6,203	0	0	188	0	0	9,515	0	0	.....	.....	.....	15,906	0	0
1869-70 ...	6,029	13	8	297	10	8	4,173	14	11	.....	.....	.....	10,501	7	3
1870-71 ...	9,894	0	0	573	0	0	5,583	0	0	.....	.....	.....	16,050	0	0
1871-72 ...	7,235	14	0	309	12	10	843	5	9	100	0	0	8,489	0	7
1872-73 ...	7,805	9	2	1,703	6	11	7,878	14	0	257	12	0	17,145	10	1
1873-74 ...	12,411	13	3	531	1	4	11,342	1	8	45	7	3	24,312	7	6
1874-75 ...	6,396	8	8	656	12	9	7,067	12	8	127	14	11	14,249	1	0
1875-76 ...	8,552	0	2	1,050	2	10	10,228	5	10	.....	.....	.....	19,830	8	10
1876-77 ...	18,796	12	10	819	11	4	13,162	2	8	433	11	10	33,212	6	8
1877-78 ...	16,799	15	5	1,044	15	0	4,534	4	0	136	0	0	22,515	2	5
Total ...	1,57,798	11	9	10,755	9	8	1,29,312	13	6	2,535	13	1	3,00,402	13	5

* Proceeds by kuttikanam and sale on timber and bamboos previous to the year 1862-63.

59. These two statements show all the different charges and receipts under their proper heads. Of the Rupees 1,57,798-11-9 accruing up to 1877-78 from the sale of timber, the following statement shows what sums have been derived from timber felled on the plantation sites and what from the forest tracts as yet unplanted:—

Timber Receipts from Sites cleared for fresh Planting and from outside Jungles or Forests.

Source derived from.	Receipts.						Total.	Remarks.		
	Sites for fresh Planting.			Jungles or Forests.						
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	
Receipts from 1840 to 1862, Rupees 21,321-2-0, for which there are no details, may fairly be divided thus.	10,660	9	0	10,660	9	0	21,321	2	0	Up to 1872 the bulk of timber receipts was realized from clearings for fresh planting, and subsequently from jungles and forests.
From 1862 to 1873 ...	66,734	11	8	6,785	9	2	73,520	4	10	
„ 1873 to 1877 ...	11,765	9	6	34,391	12	0	46,157	5	6	
„ 1877 to 1878 ...	8,341	14	8	8,458	0	9	16,799	15	5	
Total Receipts ...	97,502	12	10	60,293	14	11	1,57,798	11	9	

60. Column No. 1 of the statement of disbursements requires some explanation.

61. Of the Rupees 8,536-2-4 paid on the conclusion of the mortgage with the Trikalayur Pagoda, Rupees 1,000 is the mortgage fee and Rupees 7,000 is an advance, I believe, to be recovered from sums due as Kuttikanam, but I cannot learn why, if this is the case, this sum has not been liquidated and written off as timber has been felled. I have not been able to learn what the Rupees 536-2-4 relates to, but both relate to transactions before Mr. Ferguson's time and the latter is probably Kuttikanam.

62. The Rupees 4,102-15-2 paid in 1869-70 is Kuttikanam or stump fee paid on timber felled; the 200 paid in 1870-71 is the same.

63. Of the 5,200 Rupees paid in 1871-72, 5,000 Rupees is the purchase-money for the Chetamborai Block and Rupees 200 the renewal fee or 20 per cent. on Trikalayur mortgage fee, a sum payable every 30 years.

64. The Rupees 80,000 paid in 1872-73 is the purchase-money for the Amrapolliam and Karampoya Blocks.

65. Of the Rupees 2,318-8-10 paid in 1873-74, Rupees 2,214-8-10 is a sum paid for stump fee, Rupees 100 a sum payable annually on the Amrapolliam and Karampoya Blocks, and Rupees 4 two years' payments of a sum of Rupees 2 due annually as a jemmis right on Nellicootah.

66. The Rupees 102 paid in 1874-75 are the sums payable annually as jemmis right on Karampoya and Nellicootah.

67. The Rupees 100 paid in 1875-76 and 1876-77 is the annual Karampoya payment.

68. Of the Rupees 180 paid in 1877-78 Rupees 100 is the same, and Rupees 80 a sum for depôt rent at Kalai.

69. The Trikalayur Pagoda land was obtained by Mr. Conolly in 1840 for such term as Government might wish to retain possession, the only payment being a fee of Rupees 1,000, with a renewal fee of Rupees 200 every 30 years; a stump fee (or Kuttikanam) of 1 Rupee was payable upon all natural teak and blackwood trees which might be felled; and 30 per cent. on the net proceeds of all timber felled and removed from plantation sites, and 50 per cent. on all jungle timber cut in the natural forests, and a stump fee of $\frac{1}{2}$ Rupee on all planted teak trees on their becoming fit for cutting, and 2 per cent. on the net proceeds from bamboos.

This land includes all the Nelambur Block except small bits of 1853, 1847 and 1848 across the river opposite the palace which belonged exclusively to the Rajah, and for which 1 Rupee stump fee on planted teak trees cut as timber is payable, but for which no purchase-money was paid; it also includes all Panyangote and Waluvaisheri.

70. The Chetamborai Block, north of Panyangote and Waluvaisheri, as first proposed to be taken up by Mr. Ferguson, was fully 2,000 acres, including a large portion north of the tract secured; it belonged to Neddiwati Numbadri Pad; a Brahmin living near Wundoor, and Mr. Ferguson recommended that it should be secured on the same terms as the other land and an advance towards Kuttikanam of Rupees 5,000. The Rajah, however, put in a claim to the land, and Mr. Ballard, who was then Collector, refused to purchase; subsequently Mr. Macgregor purchased the restricted area of only 700 acres for Rupees 5,000 with an agreement to pay a stump fee of 1 Rupee on each sapling cut at maturity. The Plantations of 1872 and a portion of 1873, 74 and 1875 are situated on this block; it does not appear that this office was consulted about this purchase.

71. The Nellikootah Block, about 3,000 acres, belonged to the Zamorin of Calicut and was secured without any payment or advance whatever, except a nominal payment yearly of Rupees 2 and a stump fee of 8 Annas on each planted tree cut at maturity, and other terms as in the Trikalayur Pagoda land. 74.23 acres were planted here in 1870, and about 46 acres (not surveyed) in 1871; but after that year all planting was stopped as the locality was found to be so exceedingly feverish.

72. The Amrapolliam and Karampoya Blocks were purchased in 1872-73 for Rupees 80,000, rather hastily I think, at a higher figure than was asked and much against my advice, as will be seen from my letter to the Collector of Malabar, recorded in G.O., No. 668, of the 14th April 1871, and my letter to Government in G.O., No. 171, of 20th July 1872, and my letter to the Board of Revenue, dated 12th June, recorded in the Proceedings of the Board, No. 1,036, of the 18th June 1872. The Supreme Government however was asked to sanction the purchase on the 8th of June before my last letter was forwarded to Government by the Board and whilst I was very ill, and the purchase was effected when I was absent on sick leave in Australia. There is also an annual payment of Rupees 100 due by us as jemmibogam, but no stump fee or other payments.

73. Of this 80,000 the sum of Rupees 10,000 was fixed as the price of the old plantation (87.44 acres) at Amrapolliam, which was part of the purchase, and 10,000 Rupees are debited against the Amrapolliam Block, 386.89 acres, of which all but 65.46 acres were planted up in 1873, 74, 75 and 1876. The balance, Rupees 60,000, are debited against the Karampoya Block, which is 3945.60 acres, and still remains as forest, and which I will revert to further on in this report.

74. It appears, therefore, that we have received 333.89 acres short or paid in excess Rupees 5,008-5-7, as the agreement was, I believe, to pay Rupees 15 per acre. The survey and calculations were made during Mr. Ferguson's absence, whilst the forests were under the Collector, and I think that the latter might still put in a claim for the balance of the forest land due. No allowances, moreover, were made for swamp, streams and rock in the tract purchased for planting, which is, I believe, usual in all such cases.

75. Mr. Ferguson informs me that the Trikalayur Pagoda Trustees have become very dissatisfied with the terms of their lease since the much more favorable terms obtained by the Amrapolliam Rajah, and that they have on several occasions laid claim to the payment of the 8-Anna stump fee on all saplings felled out in thinning operations, but that the Collector has always overruled the claim. It could not of course be allowed on all saplings, and the intention of the agreement was evidently that it should only be paid on trees felled at maturity for timber. Government, however, might sanction its payment on all saplings over a girth of 6 feet at 6 feet from the ground.

76. The saplings have sold very well of late years, and the receipts of the plantations have nearly equalled the expenditure; but this year there has been no

market for the saplings, and some 30,000 remain unsold at Calicut. This is probably owing to the famine, and I do not anticipate that we shall have a difficulty in selling: the size and quality of the saplings will annually improve, and the receipts should shortly far more than cover all disbursements for establishment and working charges.

FUTURE PROSPECTS.

77. The age at which the planted teak will come to maturity, the size it will grow to, the quality of the wood, and the price it is likely to demand when thrown into the market in very large quantities are all questions that must be carefully considered with the data now available.

78. *The age at maturity.*—This is a question on which there might be much difference of opinion; I believe that the trees on the alluvial will reach maturity at 60 or 80 years, but that they will then stand 40, 50, or 60 years before old age or decay to any extent sets in. Mr. Ferguson agrees with me as to the size that they will reach at about 60 or 70 years, and that there will be large marketable timber then; but he thinks that the trees will probably go on growing till they are 150 years of age, and that they will be able to stand many years after that. Even if this should be the case, it will be more profitable to fell them when they reach a good marketable size, say a quarter girth of 18 to 24 inches, rather than wait for larger growth, though, of course, some would be left for large timber if it was seen that they continued to add to their bulk.

79. With reference to the trees on the laterite portions classed as 2ths and 4ths yield, I feel very diffident about giving any decided opinion; but I think that the age of maturity will probably be a good deal longer than that of the trees on the alluvial. These portions of the plantations should be very carefully examined every 5 years or so, and careful statistics as to the height and girth and general health recorded.

The size the Trees will grow to, and the cubic contents per acre.—This question is very exciting and interesting.

80. *The length of Boll.*—The first step is, I think, to fix the average length of boll in the older plantations: 95 feet is now about the extreme length. There are many trees far over 80; 50 feet is the shortest to be found of the trees that will be selected for the final crop, and there are very few trees of only this length. The following table shows the measurements of a certain number of the longest, shortest and medium size, taken from trees in the four oldest plantations with a view to getting the average.

81. Statement showing the measurements of six longest, shortest and medium sized trees selected in the four oldest plantations, and the average height of boll, &c.:—

Name and Year of the Plantation.	Longest.					Shortest.					Average.			
	No.	Length.			Circumference.	No.	Length.			Circumference.	Length.	Circumference.		
		FT.	IN.	PA.			FT.	IN.	PA.			FT.	IN.	PA.
Iravelly Kava, 1844 ...	1	84	6	1 6		1	50	3	8 0		67	4	10 9	
	2	85	6	2 0		2	...	3	6 0		65	4	10 0	
	3	87	5	9 0		3	...	4	9 0		68	5	3 0	
	4	85	6	4 0		4	...	3	4 0		65	4	10 0	
	5	77	6	8 0		5	...	2	8 0		61	4	9 0	
	6	87	5	10 0		6	...	4	7 0		70	5	2 6	
	7	90	4	8 0		7	...	3	5 0		70	4	0 6	
	8	95	4	0 0		8	...	3	1 6		72½	3	6 9	
Total Averages ...	...	86½	5	8 3		...	50	3	7 6		68	4	7 10	

Name and Year of the Plantation.	Longest.					Shortest.					Average.			
	No.	Length.	Circumference.			No.	Length.	Circumference.			Length.	Circumference.		
Elanjerry, 1845	1	80	FT.	IN.	PA.	1	50	FT.	IN.	PA.	65	FT.	IN.	PA.
	2	85	5	2	0	2	...	2	2	0	67½	3	8	0
	3	90	5	3	0	3	...	3	4	0	70	4	3	6
	4	75	5	8	0	4	...	2	8	0	62½	4	2	0
	5	85	5	4	0	5	...	3	0	0	67½	4	2	0
	6	85	5	2	0	6	...	2	7	0	67½	4	0	0
Total Averages ...	...	83½	5	3	4	...	50	2	6	2	66½	3	10	9
Eddacode, 1846	1	85	5	9	0	1	50	3	0	0	67½	4	4	6
	2	90	5	8	0	2	...	2	5	0	76	4	0	6
	3	70	5	6	0	3	...	2	10	0	60	4	1	0
	4	80	6	4	0	4	...	2	0	0	65	4	2	6
	5	70	5	7	0	5	...	2	7	0	60	4	1	0
	6	85	5	9	0	6	...	2	1	0	67½	3	10	0
Total Averages ...	...	80	5	9	2	...	50	2	6	0	65	4	1	7
Moolathamano, 1817	1	80	5	6	0	1	50	2	8	0	65	4	0	0
	2	76	5	3	0	2	...	2	7	0	63	3	0	0
	3	76	5	0	0	3	...	2	9	0	63	3	10	6
	4	85	5	9	0	4	...	2	5	0	67½	4	1	0
	5	75	5	8	0	5	...	2	2	0	62½	3	11	0
	6	85	5	8	0	6	...	2	0	0	67½	3	10	0
Total Averages ...	...	79½	5	6	8	...	50	2	5	2	64½	3	11	4

82. The table also gives the girths of the same trees, but the trees in question were only selected with reference to their height.

83. It will be seen that this gives an average of 68 feet and 1 inch in the oldest plantation, 1844; but as most of these trees are still adding slightly, though rather imperceptibly, to their height, and the selection of an equal number of the very shortest trees of only 50 feet being scarcely fair, as there are very few of these, the average may, I think, be fairly fixed at 70 feet for the alluvial.

84. The average on the laterite does not, I think, promise to be more than 50 or 55 feet, and this is compensated for by only calculating the yield at ¾ths and ¾ths, but the trees on those soils are not yet sufficiently matured, I think, to calculate it with any accuracy; they are still growing in height in the oldest portions and have taken a wonderful start this way during the last 4 or 5 years.

85. *The Girth and Cubic Contents.*—If the table of the measurements of saplings cut as a fair average of those which will stand for the ultimate crop (given after paragraph 4) be consulted, it will be seen that the yearly rate of growth was 1'2¼ during the first decade, 1'3½ during the second, and 1'9½ during the third; but the rapid growth in bulk has only commenced towards the end of the third decade, when the trees began to stop growing very perceptibly in height, and the average for the last half of the third decade is at the rate of 2'3½ per annum. I anticipate that the rates during the fourth and fifth decades will be at least 4 cubic feet per annum, if not 5 or even 6; the late thinnings, which reduced the trees to about 120 per acre on the older plantations, have, by letting in more light and air and more root room, given a very great spurt to the development, and many trees have, I am convinced by actual measurements, been growing at this rate during the last 2 or 3 years, and when they are felled out to stand only the 60 to the acre, their development will be still more rapid. The specimen sapling cut

out of the 1847 Plantation has, Mr. Ferguson informs me, grown by his personal observation fully if not more than 5 cubic feet annually during the last 4 years.

86. To illustrate the rate of growth as far as the girth is concerned, I forward for submission to the Secretary of State a small cross section of the boll of each of the saplings already alluded to from the plantings of 1873 back to 1844 (30 specimens in all); the bark and some of the outer sapwood is somewhat injured by white-ants, but the heart-wood is in perfect condition.* These specimens can, if necessary, be sawn across again to form two complete sets for different museums: a complete set of much longer specimens was cut from the lower or thicker portion of the boll and forwarded to Calcutta for the Paris Exhibition, but I observe that Doctor Brandis only forwarded half of these, or those of alternate years, and these are to be deposited in the Nancy Forest School in which our Indian foresters are now trained.

87. In the 1868 Plantation, as alluded to in my notes of that plantation (*vide* paragraph 36), I found a natural teak tree 7 feet 9½ inches in girth 6 feet from the base, boll 40 feet long, being forked at that height (from injury when young), the girth nearly equal throughout. Mr. Ferguson informed me that he had long watched this tree, and that when he planted this site it was a mere sapling, not more than 4 feet in girth, otherwise he would have felled it as he removes all teak trees that will yield a profit as timber from plantation sites as the shade is injurious; it was at that time, with some other small trees near it, much shut in by the dense growth of many jungle trees, but after the felling of the latter and the consequent admission of light and air its development was very rapid. I had this tree felled, and the rings prove that its growth was very slow during its infancy, but very rapid during the last 15 or 20 years; between the age of 12 and 20 and again between 25 and 30 it had evidently received much check, the rings of those periods being exceedingly close and difficult to distinguish: its age is not more than 57 years or less than 55; this gives us good data, but I expect our planted trees to be much more rapid in their growth, for this tree received no attention for 46 years, and was deprived of the necessary amount of light and air and room for development of a good head, and was subject to fires and other rough treatment whilst young, as proved by a certain amount of fluting.

88. By the table of specimen saplings (*vide* paragraph 4), it will be seen that the sapling cut in the 1847 Plantation had more than 102 cubic feet of marketable timber in it; it was however a mere sapling, its girth round the centre of the boll being only 4 feet 10 inches, girth at 6 feet from the base 5 feet 4 inches, and girth at very base 8 feet 9 inches: if this tree had not been felled and only grew at the same rate during the next 30 years, it would have upwards of 200 cubic feet at 60 years of age, but its rapid development had only set in during the last 2 or 3 years, and the rate of growth during the next 30 years would in all probability far exceed what it has been during its infancy. This was certainly one amongst the largest trees in the plantations, but there are others equal to it, and many trees carrying 70 cubic feet; it is only however during the last few years that there has been this great development in girth and wonderful promise of large timber. Until the trees began to stop growing in height they were in most cases mere spindles; now there are quantities of trees over 5 feet in girth at 6 feet from the base, and a good sprinkling over 6 feet.

89. Thanks to immunity from fire and injury by cattle and the destructive influences of creepers, parasites, &c. whilst in their infancy, all the trees are perfectly healthy and there is no sign of disease of any sort, and a fine clean straight growth has been secured by judicious pruning. 60 of the best and largest only of these, which are all fine and healthy, will eventually stand on each acre, and there can be no reasonable doubt that each of these will attain a girth of 8 feet in the centre; we know that this size can be expected from the indigenous growth here and in similar places at the foot of the Travancore ghâts, and even if larger dimensions were certain, it would be more profitable to fell at this size or even at a somewhat

* These have all been polished on one side, and the rings show clearly the age and annual development.

smaller girth than to wait for further growth except to meet special indents. The rate of growth will not be uniform in any plantation, we know this by experience of the growth up to date; many trees will probably attain this size in 60 years, whilst their neighbours may take 65, 70 or even 80 years to reach it: so we shall never have anything like a clean cut over of a plantation or of even any acre at a certain date, and as we pay nothing for the land, there will be no object in clearing it rapidly. When the felling of some of the largest trees in the 1844 Plantation commences in 1904, or perhaps somewhat earlier, there will certainly be many trees not sufficiently developed for felling in the same plantation, though some will be quite fit for the axe in some of the later plantations, say the next 3 or 4 years, or the plantations of 1845, 46, 47 and 1848.

90. *Cubic Contents per Acre.*—This can only be considered at present with a very wide margin: allowing our trees to attain a quarter girth of 2 feet in the centre of the boll, our 90 feet trees will give 360 cubic feet of timber and our 60 feet trees 240 cubic feet, and 50 feet trees, which will be scarce, 200 cubic feet; our average boll is, as I have shown, 70 feet, and this gives 280 cubic feet as the average tree, so that if we are guided by figures and present statistics, we shall have 60 trees, averaging 280 cubic feet each, or 16,800 cubic feet; and if we deduct 25 per cent. from this for the chance of disease, windfalls or other causes, 12,600 cubic feet to the acre; this would be enormous compared to the yield per acre in any of our teak forests where the teak has many associates, and where long bolls are the exception and not the rule (owing to various injuries whilst in infancy); but these trees would be very small compared to some of the gigantic trees which we have felled in the Anamallays, which have given as much as 1,920 cubic feet out of an 80 feet boll, and I see no reason to doubt that there will be this yield off most acres on the alluvial. I do not, however, wish to make calculations at this high rate, and think it will be sufficient if we allow 6,000 cubic feet per acre as full stock, and it must be certain that this will be well within the margin, as no tree with our length of boll will ever be felled unless it contains much more than 100 cubic feet, as is proved by the specimen lately felled in the 1847 Plantation, which contained 102 cubic feet though a mere sapling. I had half an acre measured off in two different blocks of Plantation 1844, and in one block in 1845, 46, 47, 48, 58 and 1868 every tree measured and its cubic contents calculated. Appendices A to H are full particulars of the measurements and cubic contents of each tree, and the following is an abstract:—

Abstract of Measurements of Half an Acre in Plantations 1844, 45, 46, 47, 48, 58 and 1868 (vide Appendices A to H.)

No.	Name and Year of Plantation.	No. of Trees.	Cubic Contents per ½ Acre.			Remarks.
			FEET.	IN.	P.	
1	Iravelly Kava, 1844	60	2,489	6	8	Appendix A.
2	Yeddacode, 1844	64	2,140	3	10	Do. B.
3	Elanjerry, 1845	79	2,371	3	8	Do. C.
4	Do. 1846	78	2,102	3	3	Do. D.
5	Do. 1847	70	1,856	3	9	Do. E.
6	Do. 1848	78	1,621	9	6	Do. F.
7	Do. 1858	135	1,101	4	9	Do. G.
8	Walluvaisheri, 1868	375	1,245	6	4	Do. H.

91. By this it will be seen that about 120 trees now stand to the acre in the 1844 Plantation, and that the cubical content is 4,879 feet per acre; and in the 1845 Plantation 158 trees carry a cubic content of 4,742 feet, the 1858 Plantation 270 trees, 2,202 cubic feet, and the 1868 Plantation 750 trees, 2,491 cubic feet.

92. These measurements must not be taken as illustrating the growth of the final crop, as all but the best 60 per acre will be in time thinned out; the others are only in the meantime acting as nurses.

93. It will be seen that in one of the two half acres measured in the 1844 Plantation, two trees already carry more than 100 cubic feet.

94. The planting is $6\frac{1}{2}' \times 6\frac{1}{2}'$, which gives 1,040 saplings to the acre. The following statement shows the periods at which the different thinnings take place and the percentage thinned out:—

Statement showing the Number of Seedlings planted per Acre, Age of successive Thinnings, Number thinned out and remaining per Acre.

Number of Thinnings.	Age in Years.	Per cent. of Thinned.	Number thinned out.	Number per Acre Planted.	Number per Acre remaining.
			$6\frac{1}{2}' \times 6\frac{1}{2}'$ gives 1040.		
1	9	29 p.c.	301	...	739
2	11	25 "	185	...	544
3	13	25 "	136	...	408
4	16	25 "	112	...	296
5	20	20 "	59	...	237
6	25	20 "	47	...	180
7	32	20 "	36	...	144
8	40	20 "	29	...	115
9	50	20 "	23	...	92
10	63	20 "	18	...	74

The numbers remaining are of course never exact, only approximate, and different acres in the same plantation vary to a certain extent. This plan has been carried out up to the thirty-second year, but it is very doubtful whether it will be so up to the sixty-third year. The growth of late has been so much more rapid than anything we ever expected, that it will probably be advisable to reduce the number to 60 per acre at the age of 45 years; but a forester's eye will tell him what is necessary as the time advances, though it is certain that the last thinnings will be well before 60 years of age.

95. It will be seen that Mr. Macgregor estimated only for 2,500 cubic feet per acre or 50 trees at 50 cubic feet each; this was an estimate without any measurements or statistics, and in putting it forward I suppose he followed Captain Seaton's rough estimate of 2,500 cubic feet per acre; but Captain Seaton visited these plantations very many years ago, before the growth was such as to authorize any estimates or anything beyond a rough guess, and he probably had in his mind the yield in teak forests, and certainly can never have calculated for the great length of boll, and I think I have conclusively shewn that no tree at maturity can ever be felled with as small a cubic content as 100 feet, and the measurements and statistics show that we shall probably have 8, 10, or 12,000 cubic feet to the acre at 60 years of age.

96. The statement after paragraph 47 gave the areas in each plantation, which are expected to yield Full, $\frac{1}{4}$ ths, $\frac{2}{3}$ ths, $\frac{3}{4}$ ths, and Nil. The following is an abstract of this with the totals of cubical contents expected from the acreage, estimated at only 6,000 cubic feet per acre = full stock:—

Acres.	Cubic Feet.
1787.35 Full	10,744,100
325.75 $\frac{1}{4}$ ths	1,563,600
539.26 $\frac{2}{3}$ ths	1,941,336
273.78 $\frac{3}{4}$ ths	657,072
599.84 Nil	...
Total ...	14,906,108

3435.98 acres equal 2,484 $\frac{1}{2}$ acres yielding full crop.

Our oldest plantation is 1844, our youngest 1876; allowing 60 years for maturity, felling commences in 1904, and allowing the trees to stand 50 years after maturity, felling of the present stock need not cease till 1986: this gives, at the lowest estimate that can be put forward, 14,906,108 cubic feet as available during these 82 years, or 183,000 cubic feet annually. The stock however might probably stand over one hundred years if necessary, and though I have put down 60 years as the age at which felling is to commence, it is, I may say, certain that there will be much marketable timber available at or soon after 50 years of age. Long before the 60 or even 50 years have expired there would, of course, be accurate plans of all the older plantations, shewing in full detail the size of the trees, &c., and the plantations could be worked by orders from the Conservator's Office wherever it might be.

97. At present there would be no market at Calicut for 180,000 cubic feet of teak annually, but there need, I think, be no apprehension on this score: when it becomes a certain annual supply, a market will be obtained; it could be sold at such prices that Burma teak could be thrown out of the Madras market, and with good saw machinery either at Nelambur or at Calicut, it could be worked up into scantlings to meet the Government and private demands of a greater portion of this Presidency as well as Bombay.

98. *The quality of the Wood.*—This has never been tested yet, and it is probable that it may be very inferior to mountain teak, at least for the purposes of furniture; but there can be no doubt about its being good serviceable wood for building and many other purposes, and Mr. Ferguson sells the natural teak grown in the same localities at prices going up as high as Rupees 2.4-0 per cubic foot.

99. *The price the Timber is likely to realize.*—This will probably vary year by year; good sound teak is not procurable now at Calicut under Rupees 1-8-0 to Rupees 2 per cubic foot, and larger prices are given for long lengths. It is not possible to estimate what the price may be thirty years hence, though I feel sure there will be a great scarcity in the interim; but about that time large quantities will also be maturing in the Anamallays, Wynad and Mudumally. About the future of the Burma market I know nothing. The following statement is Mr. Ferguson's estimate for felling, removing and floating timber to Calicut, by which it will be seen that the charges are scarcely over 3 Annas per cubic foot for delivery and storing there from the Nelambur Block, and not 5 Annas from Nellicootah and Karampoya; and as Mr. Macgregor says, inferior jungle timbers not fetching more than 4 or 5 Rupees per candy (12½ cubic feet) are felled and floated to Calicut and sold at a profit.

Estimated cost per Cubic Foot of Timber to fell, dress, and store in Plantation Depôts; thence Transport and Storing Charges in the Kalai Dépôt, Calicut.

Name of Plantation.	Felling Charges.	Dressing Charges.	Storing Charges in Plantation Depôts.	Transport to and Storing Charges in the Kalai Dépôt.	Total Charges.	Remarks.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
(a) Nelambur Block	0 0 2	0 0 2	0 1 6	0 1 3	0 8 1½	(a) These rates of working charges are inclusive of subordinate, but exclusive of executive supervision.
* Nellicootah	0 0 2½	0 0 3½	0 1 10	0 2 6	0 4 9½	* 25 per cent. added for cooly hire, and 100 per cent. added for increase in length and difficulty of transport charges.
* Karampoya	0 0 2½	0 0 3½	0 1 10	0 2 6	0 4 9½	

100. Considering the very small charges necessary to bring the teak to one of the principal timber markets, I think we may safely value it at 10 Annas per cubic foot net profit as it stands in the plantation, and I have little doubt that at an time trees could be marked and sold at that rate (if not for much more), the remover

bearing all the expenses of felling and removal. This would represent a profit of upwards of 90,00,000 Rupees on the ultimate or mature crop. Of late the plantations have been nearly paying their expenses by the sale of saplings, and year by year these profits should be greater, and shortly the necessary thinnings will be more of the character of timber than saplings, and will probably pay off all debts (including interest on outlay) against the plantations; but should they not do so when we commence to cut into the mature crop some 20, 25 or 30 years hence, any balance that there may be against the plantations will be rapidly liquidated.

101. I need not recapitulate any of the interesting information or touch upon any of the points explained by Mr. Macgregor in his report, to which this may be considered as a statistical appendix, and the maps he has submitted will equally answer for this report.

102. Appendix I is a register of areas planted yearly from 1840 to 1876. Appendix J is a register of surveyed areas of natural forest and teak plantations in the several blocks comprising the Nelambur Forest Division.

103. *Extension of Planting.*—With the certainty that there will be at least 180,000 cubic feet of teak, and probably much more available after 1904, every year for about eighty years, is it desirable to extend the plantations. At present I think not, and that all the services of the establishment should be employed in the up-keep and improvement of the present plantations; replanting need not again begin till about 1900.

104. *Area available for Planting.*—Within the limits of the Trikalayur Pagoda land, and for which we pay nothing, there is still some land available, viz., in Panyangote there are still about 100 acres good alluvial. In the Pakode Block across the Adianpoya river from Chetamborai there are about 130 acres good alluvial, and in Kanakote across the Eyathod river from Chetamborai nearly 200 acres good alluvial. It seems a pity that these 430 acres should not be planted, as they form a compact block with the rest of the Trikalayur land and we shall have to pay nothing for the land.

105. In Nellicootah there are 1703.93 acres superb land for planting, but the locality has proved so deadly and so entirely disorganized the whole establishment that I could not recommend our again attempting operations in this quarter. This forest tract, however, should certainly be fire-traced.

106. At Eddiambodum, on right bank of the Shurliar, north-west of Yeddicarrah there is a block of 300 acres (colored green in Mr. Macgregor's map) belonging to us, but the success of planting here would be doubtful as it is almost certain to be very feverish. Neither can I recommend that planting should be carried out in the Karampoya Block, for which we have paid 60,000 Rupees; the area is 3945.60 acres, but of this 15 per cent. must be deducted for nullahs, swamps, rocks, &c. I went carefully over this with Mr. Ferguson again this time, and my views concerning it are still the same as expressed in my letters referred to in paragraph 72. It is splendid soil, but the forest is too good to fell, and from its close proximity to the hills I feel sure it will prove quite as unhealthy as Nellicootah directly the soil is broken up. Another serious drawback is that the wild elephants are here so numerous and impudent that Mr. Ferguson thinks planting would be a failure, unless we had an elephant trench 6' x 6' all round, which would cost at least Rupees 20,000. I am of opinion that the tract should be fire-traced and treated as a natural forest. Most of the fine teak was felled out before we purchased, but there is plenty coming on mixed with much fine jungle timber which, however, is not of very much value here (though it may be during the next 30 years when teak will certainly be scarce), and the growth of the teak will be greatly benefited and increased by fire-tracing.

107. When the older plantations are thinned out to 60 trees to the acre there will, I think, be plenty of light and air to raise a second crop between the trees. The alluvial soil is much improving from the annual debris enriching it, and we could avoid all laterite tracts and select only the best ground. 400 seedlings per acre

might be planted the usual distance apart; of course many of these would come to nothing, but be required as nurses to draw up those destined for the second crop. It would be an experiment only and the success somewhat doubtful, so should at first only be tried on a small scale.

108. The cost of collecting seed, preparing nurseries, germinating and planting out and maintenance for the first year would not exceed 7 Rupees per acre, and subsequent up-keep, weeding and pruning about $1\frac{1}{2}$ Rupees per acre.

109. Mahogany grows so splendidly in the climate of Nelambur and in amongst the teak trees (not objecting to shade) that I strongly recommend a quantity of seed being procured. It should be sent direct from the Honduras (or at least not be allowed to be detained in England as a former supply was). The seeds should be taken out of the capsules and packed in a mixture of dry saw dust and charcoal dust or dry silver sand and charcoal dust.

110. It will not be fair to debit any of the 80,000 Rupees paid for the Amrapolliam and Karampoya Blocks against the Nelambur Block of plantations; of this sum 10,000 Rupees is debited against Amrapolliam (321.33 acres planted up in 1873, 74, 75, 76) and 65.46 acres unplanted, and 10,000 Rupees against the purchased plantation, which was partly planted about the year 1860 and partly in 1868, and is 87.44 acres. The accounts of these two are kept distinct from Nelambur, and should continue to be so under the head of Amrapolliam Extension, and the debt of Rupees 60,000 must remain against Karampoya.

111. A sum of Rupees 5,000 was paid for the Chetamborai Block, but I think it may be incorporated in the accounts with Nelambur, as Nellicootah should also be; separate accounts or returns would add greatly to office work, which is already far too heavy.

112. Should an estimate be required for the planting up of Karampoya I can submit one, but I do not submit it with this report as it appears to me unlikely that Government will wish to extend planting in that direction at present; the rest of the Nelambur Block should certainly be planted first, and we should get rid of the wild elephants; but 30 or 40 years hence, when larger extensions may be desirable, the conditions relating to Karampoya and Nellicootah may be very different. I may, however, mention that taking into consideration compound interest on the large sum paid and the expense necessary for an elephant trench, planting would still pay.

113. Nelambur is now most instructive, and I think that all Forest Officers who have anything to do with teak or teak plantations, should be allowed to visit it and spend a fortnight or three weeks in going through plantations of different ages, taking measurements and studying the growth on the different soils, &c.: in this case another bungalow should be built at a cost not exceeding 4,000 Rupees.

114. I have been visiting these plantations almost annually since 1857 and constantly taking measurements, but I never realized their great value till this visit, when I went critically into all questions relating to their future, a subject which I certainly found most engrossing and exciting; but it is only within the last three or four years that the signs of the great future in store for them have become so startling and apparent.

115. I cannot close this report without testifying to the unremitting care and attention that Mr. Ferguson has given to these plantations during the last 16 years, and I do not think that they would be in the fine condition they now are unless we had had the advantage of his practical knowledge of pruning, thinning, &c. Mr. Ferguson's health has been much broken by the fever contracted at Nellicootah and he purposes retiring shortly, and he is afraid that his health will not allow him to pursue his profession in England, and he is no longer young. I trust that the Secretary of State may be asked to consider his claim to pension as a special case, for I think that he should receive one of £250 per annum.

116. The work of this range is very different to anything else in the department, and the officer in charge cannot do justice to the work unless he is out a

great deal himself during the day and able to bear a great deal of exposure; in fact we want a fairly educated man of the working class, who thoroughly understands timber and plantations, rather than a Deputy Conservator and gentleman. Nelambur itself is not apparently feverish, though some of its surroundings, like Nellicootah, are very much so, but the climate is most trying and like a steam-bath all the year round, and the place is perfectly isolated from all society and quite an inhospitable region. I would recommend that a forester be procured from Scotland and placed under Mr. Ferguson to learn his work before the latter leaves; he should be under a special agreement to serve 15 or 20 years; he should receive at the rate of £150 per annum whilst learning under Mr. Ferguson, but he should receive not less than £250 per annum afterwards for the first five years, £300 for the next 5, £400 when 10 years' service, and £500 when 15 years, or on a scale somewhat similar; and he should be allowed a pension of £250 after 20 years. Doctor Cleghorn or Colonel Pearson would be able to select a man; he must be of strong constitution and active habits to stand the work and exposure, and must be fairly educated to be able to keep the accounts and conduct the office work, and he should have a thoroughly practical knowledge of timber and the treatment of plantations; the rest he can quickly learn under Mr. Ferguson.

R. H. BEDDOME, Lieut.-Colonel,
Conservator of Forests.

APPENDIX A.

Measurements of Half an Acre in Plantation, Iravelly Kara, 1844.

Number.	Length of Stem.	Quarter Girth at Centre of Stem.	Contents.			Number.	Length of Stem.	Quarter Girth at Centre of Stem.	Contents.			Number.	Length of Stem.	Quarter Girth at Centre of Stem.	Contents.		
	FT.	IN.	C.F.T.	IN.	P.		FT.	IN.	C.F.T.	IN.	P.		FT.	IN.	C.F.T.	IN.	P.
1	50	8 $\frac{1}{2}$	26	7	0	21	65	13 $\frac{1}{2}$	79	2	11	41	55	15 $\frac{1}{2}$	88	9	10
2	75	8 $\frac{1}{2}$	37	7	6	22	55	12 $\frac{1}{2}$	59	8	1	42	40	10 $\frac{1}{2}$	30	7	6
3	45	7 $\frac{1}{2}$	17	6	11	23	70	10 $\frac{1}{2}$	51	0	10	43	65	8 $\frac{1}{2}$	30	8	7
4	40	6	10	0	0	24	70	11 $\frac{1}{2}$	61	6	3	44	80	9 $\frac{1}{2}$	35	7	9
5	75	12	75	0	0	25	65	7 $\frac{1}{2}$	25	4	7	45	45	9 $\frac{1}{2}$	29	8	5
6	70	10	48	7	4	26	75	11 $\frac{1}{2}$	65	11	0	46	70	10	48	7	4
7	75	6 $\frac{1}{2}$	22	0	0	27	70	10 $\frac{1}{2}$	53	7	1	47	85	12	65	0	0
8	50	9 $\frac{1}{2}$	33	0	1	28	55	10 $\frac{1}{2}$	40	1	6	48	90	8 $\frac{1}{2}$	42	6	5
9	60	8 $\frac{1}{2}$	30	1	2	29	80	11 $\frac{1}{2}$	28	9	1	49	45	8 $\frac{1}{2}$	22	6	11
10	70	10 $\frac{1}{2}$	53	7	1	30	80	8 $\frac{1}{2}$	37	9	8	50	50	12	50	0	0
11	40	5 $\frac{1}{2}$	9	2	2	31	45	9 $\frac{1}{2}$	26	8	10	51	65	9 $\frac{1}{2}$	42	10	10
12	55	7 $\frac{1}{2}$	21	5	9	32	80	10 $\frac{1}{2}$	61	2	11	52	45	6 $\frac{1}{2}$	14	2	10
13	50	8 $\frac{1}{2}$	23	7	7	33	65	10 $\frac{1}{2}$	49	9	1	53	70	11	58	9	10
14	60	11 $\frac{1}{2}$	55	1	2	34	80	13 $\frac{1}{2}$	105	0	4	54	40	8 $\frac{1}{2}$	18	10	10
15	65	13 $\frac{1}{2}$	85	4	0	35	45	8 $\frac{1}{2}$	21	3	2	55	35	9 $\frac{1}{2}$	21	11	2
16	60	8 $\frac{1}{2}$	31	10	9	36	70	7 $\frac{1}{2}$	27	4	1	56	35	7	11	10	11
17	70	8 $\frac{1}{2}$	33	1	0	37	65	7 $\frac{1}{2}$	25	4	7	57	35	7 $\frac{1}{2}$	13	8	0
18	60	11 $\frac{1}{2}$	52	8	9	38	50	8 $\frac{1}{2}$	23	7	7	58	35	7 $\frac{1}{2}$	14	7	2
19	75	10 $\frac{1}{2}$	54	8	7	39	70	8 $\frac{1}{2}$	33	1	0	59	50	9 $\frac{1}{2}$	29	8	6
20	75	8 $\frac{1}{2}$	35	5	4	40	65	15	101	6	2	60	30	12 $\frac{1}{2}$	33	10	4

Total .. 2,439 6 8

Average $\frac{1}{4}$ girth per tree = 9 $\frac{1}{2}$ inches.Average cubic contents = 33 $\frac{1}{2}$ -5-6.

The thirty best only will stand to maturity; the other thirty are acting as nurse, and will be felled out probably before 1889, certainly by 1894.

APPENDIX B.

Contents of Half Acre in Plantation Eddacode, 1844.

Number.	Length.	Quarter Girth in Inches.	Cubic Contents.	Number.	Length.	Quarter Girth in Inches.	Cubic Contents.	Number.	Length.	Quarter Girth in Inches.	Cubic Contents.
	FT.		C.F.T. IN. P.		FT.		C.F.T. IN. P.		FT.		C.F.T. IN. P.
1	40	8 $\frac{1}{2}$	21 3 2	22	65	8 $\frac{1}{2}$	30 8 7	43	80	10	55 6 8
2	70	9	39 4 6	23	60	8	26 8 0	44	55	6	13 9 0
3	70	7 $\frac{1}{2}$	27 4 1	24	25	6 $\frac{1}{2}$	7 4 0	45	70	9	39 4 6
4	70	10 $\frac{1}{2}$	56 2 1	25	60	7 $\frac{1}{2}$	21 10 9	46	70	8 $\frac{1}{2}$	33 1 0
5	75	10	52 1 0	26	60	7	20 5 0	47	55	6 $\frac{1}{2}$	14 11 0
6	70	8 $\frac{1}{2}$	35 1 5	27	62	10 $\frac{1}{2}$	45 0 10	48	60	7 $\frac{1}{2}$	23 5 2
7	70	10	48 7 4	28	50	6 $\frac{1}{2}$	15 9 10	49	70	9 $\frac{1}{2}$	43 10 5
8	70	9 $\frac{1}{2}$	46 2 6	29	75	9 $\frac{1}{2}$	44 6 9	50	45	6 $\frac{1}{2}$	12 2 5
9	80	10	55 6 8	30	75	7 $\frac{1}{2}$	29 3 6	51	75	10	52 1 0
10	58	6 $\frac{1}{2}$	18 4 2	31	60	6 $\frac{1}{2}$	17 7 2	52	70	8	31 1 4
11	80	10 $\frac{1}{2}$	64 2 4	32	70	9	39 4 6	53	50	5 $\frac{1}{2}$	9 6 10
12	60	7	20 5 0	33	70	9 $\frac{1}{2}$	10 5	54	75	8 $\frac{1}{2}$	37 7 6
13	75	11 $\frac{1}{2}$	71 10 10	34	80	10 $\frac{1}{2}$	64 2 4	55	30	8	13 4 0
14	75	7 $\frac{1}{2}$	29 3 6	35	45	6	11 3 0	56	50	8 $\frac{1}{2}$	25 1 0
15	70	8 $\frac{1}{2}$	35 1 5	36	55	6 $\frac{1}{2}$	16 1 7	57	60	8 $\frac{1}{2}$	30 1 2
16	75	5 $\frac{1}{2}$	17 2 7	37	60	6 $\frac{1}{2}$	16 3 3	58	80	11	67 2 8
17	80	8 $\frac{1}{2}$	40 1 7	38	70	10 $\frac{1}{2}$	56 2 1	59	70	8 $\frac{1}{2}$	35 1 5
18	70	6 $\frac{1}{2}$	20 6 5	39	75	7 $\frac{1}{2}$	29 3 6	60	75	7 $\frac{1}{2}$	29 3 6
19	70	6 $\frac{1}{2}$	20 6 5	40	70	9 $\frac{1}{2}$	43 10 5	61	70	8 $\frac{1}{2}$	33 1 0
20	65	8	29 2 4	41	65	9 $\frac{1}{2}$	38 7 5	62	75	11 $\frac{1}{2}$	65 11 0
21	75	6 $\frac{1}{2}$	23 8 9	42	60	6 $\frac{1}{2}$	16 3 3	63	70	9 $\frac{1}{2}$	43 10 5
								64	50	8 $\frac{1}{2}$	23 7 7

Total .. 2,140 3 10

Average $\frac{1}{4}$ girth = 8 $\frac{1}{2}$.Average cubic contents = 33 $\frac{1}{2}$ -5-3.

APPENDIX C.

Contents of Half Acre in Plantation Elanjerry, 1845.

Number.	Length.	Quarter Girth in Inches.	Cubic Contents.	Number.	Length.	Quarter Girth in Inches.	Cubic Contents.	Number.	Length.	Quarter Girth in Inches.	Cubic Contents.
	FT.		C.FT. IN. P.		FT.		C.FT. IN. P.		FT.		C.FT. IN. P.
1	45	5	7 9 9	27	60	7 $\frac{1}{4}$	21 10 9	53	35	6	7 6 0
2	70	8 $\frac{1}{4}$	33 1 6	28	75	11	63 0 0	54	70	9 $\frac{1}{2}$	43 10 5
3	80	11 $\frac{1}{4}$	70 3 8	29	75	9 $\frac{1}{2}$	47 0 0	55	50	6	12 6 0
4	65	7 $\frac{1}{2}$	25 4 7	30	65	6 $\frac{1}{2}$	19 0 9	56	40	6 $\frac{1}{2}$	12 7 10
5	70	8 $\frac{1}{4}$	33 1 0	31	75	9 $\frac{1}{2}$	47 0 0	57	60	11 $\frac{1}{4}$	57 6 3
6	65	7 $\frac{1}{2}$	25 4 7	32	70	5 $\frac{1}{2}$	16 0 10	58	65	8 $\frac{1}{4}$	30 8 7
7	75	11	63 0 3	33	35	6 $\frac{1}{4}$	9 5 11	59	70	10 $\frac{1}{4}$	45 0 11
8	75	9 $\frac{1}{4}$	44 6 9	34	40	5 $\frac{1}{4}$	9 2 2	60	45	6	11 3 0
9	75	10 $\frac{3}{4}$	60 2 3	35	80	10	55 6 8	61	45	6 $\frac{1}{4}$	12 2 5
10	65	7	22 1 5	36	70	8 $\frac{1}{4}$	33 1 0	62	80	8 $\frac{1}{4}$	42 6 4
11	60	6 $\frac{1}{2}$	17 7 2	37	70	8	31 1 4	63	45	6	11 3 0
12	70	7	23 9 10	38	60	6 $\frac{1}{4}$	16 3 3	64	65	8 $\frac{1}{4}$	34 6 8
13	55	9 $\frac{1}{4}$	36 3 8	39	70	8 $\frac{1}{4}$	37 2 7	65	65	8 $\frac{1}{4}$	30 8 7
14	60	5	10 5 0	40	35	5 $\frac{1}{4}$	7 4 2	66	80	12	80 0 0
15	50	5	8 8 2	41	70	8 $\frac{1}{4}$	37 2 7	67	70	8	31 1 4
16	75	8 $\frac{1}{2}$	37 7 6	42	50	8 $\frac{1}{4}$	23 7 7	68	65	8 $\frac{1}{2}$	32 7 3
17	45	5 $\frac{1}{4}$	8 7 4	43	70	9	39 4 6	69	70	9 $\frac{1}{4}$	41 7 1
18	50	5 $\frac{1}{4}$	11 5 9	44	70	9 $\frac{1}{4}$	46 2 6	70	50	6 $\frac{1}{4}$	13 6 9
19	75	11	63 0 0	45	65	8 $\frac{1}{4}$	30 8 7	71	35	6 $\frac{1}{2}$	10 3 2
20	75	9	42 2 3	46	70	10 $\frac{1}{2}$	53 7 1	72	65	8	28 10 8
21	40	5 $\frac{1}{4}$	9 2 2	47	70	8 $\frac{1}{4}$	37 2 7	73	65	9 $\frac{1}{2}$	40 8 9
22	30	4 $\frac{1}{4}$	4 8 4	48	40	6	10 0 0	74	50	7 $\frac{1}{4}$	19 6 4
23	57	4	6 4 1	49	65	8 $\frac{1}{2}$	30 8 7	75	40	6 $\frac{1}{2}$	11 8 10
24	75	9 $\frac{1}{4}$	43 6 1	50	50	6 $\frac{1}{4}$	13 6 9	76	75	10 $\frac{3}{4}$	60 2 3
25	75	10	52 1 0	51	70	8 $\frac{1}{4}$	33 1 0	77	45	6 $\frac{1}{2}$	13 2 5
26	50	5 $\frac{1}{2}$	10 6 0	52	70	10	48 7 4	78	50	6 $\frac{1}{2}$	14 8 0
				53	70	8 $\frac{1}{4}$	33 1 0				
				79	70	8 $\frac{1}{4}$	33 1 0				
				Total ..				2,371 3 8			

Average $\frac{1}{4}$ girth = 7 $\frac{1}{4}$.

Average cubic contents = 30.0-2.

Thirty only of the best out of the seventy-nine will be standing for maturity at about the year 1890.

APPENDIX D.

Contents of Half Acre in Plantation Elanjerry, 1846.

Number.	Length.	Quarter Girth.	Cubic Contents.	Number.	Length.	Quarter Girth.	Cubic Contents.	Number.	Length.	Quarter Girth.	Cubic Contents.
	FT.		C.FT. IN. P.		FT.		C.FT. IN. P.		FT.		C.FT. IN. P.
1	70	8	31 1 4	27	40	4 $\frac{1}{2}$	5 7 6	53	70	6 $\frac{1}{4}$	22 1 9
2	45	5 $\frac{1}{2}$	9 5 5	28	50	5 $\frac{1}{4}$	9 6 10	54	60	7 $\frac{1}{2}$	23 5 2
3	50	7 $\frac{1}{2}$	19 6 4	29	75	10 $\frac{1}{2}$	57 5 0	55	60	8	26 8 0
4	70	9 $\frac{1}{4}$	41 7 1	30	80	8 $\frac{1}{4}$	42 6 4	56	70	8 $\frac{1}{2}$	35 1 5
5	65	7 $\frac{1}{2}$	25 4 7	31	50	5 $\frac{1}{4}$	9 6 10	57	80	12	80 0 0
6	60	8 $\frac{1}{4}$	30 1 2	32	55	6 $\frac{1}{4}$	17 4 9	58	80	9 $\frac{1}{4}$	50 1 7
7	50	5	8 8 2	33	65	7 $\frac{1}{2}$	25 4 7	59	70	8 $\frac{1}{4}$	33 1 0
8	70	8 $\frac{1}{4}$	33 1 2	34	45	6	11 3 0	60	60	7	20 5 0
9	45	4 $\frac{1}{4}$	5 7 8	35	65	6 $\frac{1}{4}$	20 6 9	61	60	7 $\frac{1}{2}$	23 5 2
10	70	9 $\frac{1}{4}$	46 2 6	36	60	6 $\frac{1}{2}$	18 11 9	62	45	5 $\frac{1}{4}$	9 5 5
11	60	6 $\frac{1}{4}$	17 7 2	37	60	6 $\frac{1}{4}$	16 3 3	63	60	8 $\frac{1}{2}$	30 1 2
12	50	6	12 6 0	38	60	6	15 0 0	64	30	4 $\frac{1}{4}$	3 9 1
13	60	7 $\frac{1}{2}$	23 5 2	39	80	10 $\frac{1}{2}$	64 2 4	65	30	5	5 2 6
14	60	5 $\frac{1}{4}$	13 9 3	40	65	6 $\frac{1}{4}$	20 6 9	66	80	9 $\frac{1}{2}$	50 1 7
15	65	6 $\frac{1}{4}$	20 6 9	41	75	9 $\frac{1}{2}$	47 0 0	67	75	9 $\frac{1}{4}$	47 0 0
16	50	7	17 0 2	42	70	12 $\frac{1}{4}$	75 11 5	68	70	6 $\frac{1}{2}$	20 6 5
17	70	7 $\frac{1}{4}$	27 4 1	43	45	4 $\frac{1}{4}$	7 0 7	69	65	6 $\frac{1}{4}$	20 6 9
18	75	9 $\frac{1}{4}$	47 0 0	44	70	8 $\frac{1}{4}$	33 1 0	70	50	4 $\frac{3}{4}$	7 10 0
19	70	7 $\frac{1}{2}$	27 4 1	45	45	7	15 3 9	71	30	5	5 2 6
20	75	12 $\frac{1}{4}$	78 1 10	46	80	13 $\frac{1}{2}$	101 2 11	72	70	8	31 1 4
21	75	9	42 2 3	47	30	5 $\frac{1}{4}$	6 10 7	73	45	5 $\frac{1}{4}$	8 7 4
22	70	6 $\frac{1}{4}$	22 1 9	48	30	5 $\frac{1}{4}$	5 8 10	74	70	11 $\frac{1}{4}$	61 6 3
23	70	9 $\frac{1}{4}$	46 2 6	49	70	9 $\frac{1}{2}$	43 10 5	75	70	7	23 9 10
24	70	8 $\frac{1}{4}$	33 1 0	50	50	6 $\frac{1}{4}$	14 8 0	76	35	5	6 0 11
25	40	4 $\frac{1}{2}$	5 7 6	51	70	7 $\frac{1}{4}$	27 4 1	77	70	8	31 1 4
26	40	4 $\frac{1}{4}$	6 3 2	52	50	3 $\frac{1}{4}$	4 10 7	78	70	6	17 6 0
				Total ..				2,102 3 3			

Average $\frac{1}{4}$ girth = 7 $\frac{1}{4}$.

Average cubic contents = 25.8-5.

APPENDIX E.

Contents of Half Acre in Plantation 1847, Moolathamano.

Number.	Length.	Quarter Girth.	Cubic Contents.	Number.	Length.	Quarter Girth.	Cubic Contents.	Number.	Length.	Quarter Girth.	Cubic Contents.
	FT.		C.F.T. IN. P.		FT.		C.F.T. IN. P.		FT.		C.F.T. IN. P.
1	60	7 $\frac{1}{2}$	28 5 2	35	66	9	37 1 6	48	65	6	16 3 0
2	60	6 $\frac{1}{4}$	18 11 9	26	75	8 $\frac{1}{2}$	37 7 6	49	70	9 $\frac{1}{2}$	46 2 6
3	70	9 $\frac{1}{4}$	46 2 6	27	75	8 $\frac{1}{2}$	37 7 6	50	65	6	16 3 0
4	45	5 $\frac{1}{2}$	9 5 5	28	65	6	16 3 0	51	60	5 $\frac{1}{4}$	13 9 3
5	45	6 $\frac{1}{4}$	13 2 5	29	60	10	43 8 0	52	35	5 $\frac{1}{4}$	6 8 4
6	40	6	10 0 0	30	80	9 $\frac{1}{2}$	50 1 7	53	65	7 $\frac{1}{4}$	23 8 8
7	70	10 $\frac{1}{2}$	53 7 1	31	80	10 $\frac{1}{2}$	61 2 11	54	40	5 $\frac{1}{2}$	8 4 10
8	75	9 $\frac{1}{2}$	47 0 0	32	40	7	13 7 4	55	75	8 $\frac{1}{2}$	37 7 6
9	70	7	23 9 10	33	55	6	13 9 0	56	50	7	17 0 2
10	50	6 $\frac{1}{4}$	15 9 10	34	50	5	8 8 2	57	50	7 $\frac{1}{2}$	19 6 4
11	50	6	12 6 0	35	55	6	13 9 0	58	70	7 $\frac{1}{2}$	27 4 1
12	75	10 $\frac{1}{4}$	54 8 7	36	65	6	16 3 0	59	56	6 $\frac{1}{2}$	17 8 7
13	60	6 $\frac{1}{4}$	28 4 3	37	60	5 $\frac{1}{2}$	12 7 2	60	70	8 $\frac{1}{2}$	37 2 7
14	59	7 $\frac{1}{4}$	24 7 3	38	70	7	23 9 10	61	65	6	16 3 0
15	75	10 $\frac{1}{4}$	54 8 7	39	57	6	14 3 0	62	30	7	10 2 6
16	70	7 $\frac{1}{2}$	27 4 1	40	70	6	17 6 0	63	70	9 $\frac{1}{2}$	43 10 5
17	35	6	8 9 0	41	80	7 $\frac{1}{2}$	31 2 11	64	75	9	42 2 3
18	70	8 $\frac{1}{2}$	37 2 7	42	55	5 $\frac{1}{2}$	11 6 7	65	60	6 $\frac{1}{4}$	13 11 7
19	70	9	39 4 6	43	80	8	33 6 8	66	60	6 $\frac{1}{4}$	13 11 7
20	65	8 $\frac{1}{2}$	32 7 3	44	65	7 $\frac{1}{4}$	23 8 8	67	50	6	12 6 0
21	65	7 $\frac{1}{4}$	23 8 8	45	45	7	15 3 9	68	75	11	63 0 3
22	50	6	12 6 0	46	75	9 $\frac{1}{2}$	47 0 0	69	75	9 $\frac{1}{2}$	47 0 0
23	75	7	22 1 5	47	70	9 $\frac{1}{4}$	46 2 6	70	30	4 $\frac{1}{4}$	3 9 1
24	75	7 $\frac{1}{4}$	27 4 6								
Total ..											1,856 3 9

Average $\frac{1}{4}$ girth = 7 $\frac{1}{4}$.

Average cubic contents = 28'3.2.

APPENDIX F.

Contents of Half Acre in Plantation 1848, Moolathamano.

Number.	Length.	Quarter Girth.	Cubic Contents.	Number.	Length.	Quarter Girth.	Cubic Contents.	Number.	Length.	Quarter Girth.	Cubic Contents.
	FT.		C.F.T. IN. P.		FT.		C.F.T. IN. P.		FT.		C.F.T. IN. P.
1	50	5	12 6 0	27	70	7 $\frac{1}{2}$	27 4 1	53	75	7 $\frac{1}{2}$	29 3 6
2	80	7 $\frac{1}{2}$	31 2 11	28	30	4 $\frac{1}{4}$	3 9 1	54	50	5 $\frac{1}{4}$	9 6 10
3	70	7 $\frac{1}{4}$	25 6 7	29	70	9 $\frac{1}{2}$	43 10 5	55	40	6 $\frac{1}{4}$	10 10 2
4	50	7 $\frac{1}{2}$	20 10 3	30	60	8 $\frac{1}{4}$	28 4 3	56	70	7 $\frac{1}{4}$	25 6 7
5	50	6 $\frac{1}{4}$	15 9 10	31	70	9 $\frac{1}{4}$	41 7 1	57	70	7 $\frac{1}{4}$	25 6 7
6	40	6 $\frac{1}{4}$	12 7 10	32	45	5	7 9 9	58	60	5 $\frac{1}{2}$	12 7 2
7	45	4 $\frac{1}{4}$	7 0 7	33	60	7 $\frac{1}{4}$	21 10 9	59	70	7 $\frac{1}{2}$	27 4 1
8	40	6 $\frac{1}{4}$	10 10 2	34	70	8 $\frac{1}{4}$	27 2 7	60	70	7 $\frac{1}{4}$	29 2 4
9	40	6 $\frac{1}{4}$	10 10 2	35	40	5 $\frac{1}{4}$	7 7 10	61	70	8 $\frac{1}{2}$	35 1 5
10	75	6 $\frac{1}{4}$	20 1 1	36	65	7 $\frac{1}{2}$	25 4 7	62	45	5 $\frac{1}{2}$	9 5 5
11	70	7 $\frac{1}{4}$	29 2 4	37	45	7	15 3 9	63	50	5 $\frac{1}{2}$	10 6 0
12	35	4 $\frac{1}{2}$	4 11 0	38	50	6 $\frac{1}{4}$	13 6 9	64	70	7	23 9 10
13	65	7 $\frac{1}{4}$	23 8 8	39	50	7 $\frac{1}{4}$	18 3 0	65	65	6	16 3 0
14	70	5 $\frac{1}{4}$	14 8 5	40	40	5 $\frac{1}{2}$	9 2 2	66	70	7	23 9 10
15	70	6	17 6 0	41	25	5 $\frac{1}{4}$	6 3 4	67	70	8 $\frac{1}{4}$	33 1 0
16	70	6 $\frac{1}{4}$	18 11 10	42	70	8 $\frac{1}{4}$	37 2 7	68	65	6	16 3 0
17	55	5	9 6 7	43	55	7 $\frac{1}{4}$	20 0 10	69	65	6 $\frac{1}{4}$	17 7 6
18	70	6 $\frac{1}{4}$	18 11 10	44	70	7 $\frac{1}{2}$	27 4 1	70	45	5 $\frac{1}{2}$	9 5 5
19	75	10	52 1 0	45	50	6 $\frac{1}{4}$	15 9 10	71	75	10 $\frac{1}{4}$	54 8 7
20	65	6 $\frac{1}{2}$	19 0 9	46	60	6	16 0 0	72	60	6 $\frac{1}{4}$	16 3 3
21	70	6 $\frac{1}{4}$	18 11 10	47	50	5 $\frac{1}{2}$	10 6 0	73	60	6 $\frac{1}{4}$	18 11 9
22	70	6	17 6 0	48	50	5 $\frac{1}{4}$	11 5 9	74	70	9 $\frac{1}{4}$	41 7 1
23	60	6	16 0 0	49	70	6 $\frac{1}{4}$	18 11 10	75	30	7 $\frac{1}{4}$	10 11 4
24	50	4 $\frac{1}{4}$	7 10 0	50	65	7	22 1 5	76	75	8 $\frac{1}{4}$	39 10 6
25	60	5 $\frac{1}{4}$	13 9 3	51	50	5 $\frac{1}{4}$	11 5 9	77	60	5 $\frac{1}{2}$	12 7 2
26	65	6 $\frac{1}{4}$	19 0 9	52	75	7 $\frac{1}{2}$	29 3 6	78	65	7 $\frac{1}{2}$	25 4 7
Total ..											1,621 9 6

Average $\frac{1}{4}$ girth = 7 $\frac{1}{4}$.

Average cubic contents = 20'7.

APPENDIX G.

Contents of Half Acre in Plantation 1858, Elanderry.

Number.	Length.	Quarter Girth.	Cubic Contents.	Number.	Length.	Quarter Girth.	Cubic Contents.	Number.	Length.	Quarter Girth.	Cubic Contents.
	FT.		C.F.T. IN. P.		FT.		C.F.T. IN. P.		FT.		C.F.T. IN. P.
1	45	6	11 3 0	46	45	4	5 0 0	91	45	6½	13 2 5
2	45	4½	5 7 8	47	45	4½	6 3 11	92	45	5	7 9 9
3	45	5	10 3 11	48	45	7	15 3 9	93	45	6	11 3 0
4	45	5½	10 3 11	49	45	5½	10 3 11	94	45	6½	12 2 5
5	45	5½	8 7 4	50	45	3	2 9 9	95	45	6½	13 2 5
6	45	7	15 3 9	51	45	4½	5 7 8	96	45	4½	5 7 8
7	45	3½	3 9 11	52	45	4½	7 0 7	97	45	4½	6 3 11
8	45	4½	5 7 8	53	45	6	14 2 10	98	45	5	11 3 0
9	45	6	12 2 5	54	45	6	14 2 10	99	45	4½	7 0 7
10	45	3	3 9 11	55	45	4½	6 3 11	100	45	6	11 3 0
11	45	5	7 9 9	56	45	5	7 9 9	101	45	4½	5 7 8
12	45	3	2 9 9	57	45	4	5 0 0	102	45	3½	4 4 8
13	45	3	4 4 8	58	45	5½	8 7 4	103	45	6	11 3 0
14	45	6	13 2 5	59	45	6½	12 2 5	104	45	5½	8 7 4
15	45	4	7 0 7	60	45	4	5 0 0	105	45	3½	4 4 8
16	45	4	6 3 11	61	45	5½	9 5 5	106	45	4½	6 3 11
17	45	5	8 7 4	62	45	5	7 9 9	107	45	5	7 9 9
18	45	5	8 7 4	63	45	6	11 3 0	108	45	3½	4 4 8
19	45	4	6 3 11	64	45	5½	10 3 11	109	45	5	7 9 9
20	45	6	11 3 0	65	45	7½	16 6 1	110	45	5	7 9 9
21	45	3	3 3 7	66	45	4	5 0 0	111	45	6½	12 2 5
22	45	6	13 2 5	67	45	6½	13 2 5	112	45	3½	4 4 8
23	45	4½	5 7 8	68	45	6	11 3 0	113	45	3½	4 4 8
24	45	4	6 3 11	69	45	3½	4 4 8	114	45	5½	8 7 4
25	45	5	9 5 5	70	45	5½	10 3 11	115	45	5½	8 7 4
26	45	4	6 3 11	71	45	4	5 0 0	116	45	4½	7 0 7
27	45	3	2 9 9	72	45	3½	3 3 7	117	45	6	11 3 0
28	45	3	4 4 8	73	45	6½	13 2 5	118	45	5½	8 7 4
29	45	5	8 7 4	74	45	6½	13 2 5	119	45	5	7 9 9
30	45	5	7 9 9	75	45	3½	4 4 8	120	45	4½	5 7 8
31	45	7	15 3 9	76	45	4½	5 7 8	121	45	4½	6 3 11
32	45	3½	3 9 11	77	45	4	5 0 0	122	45	6	11 3 0
33	45	3	3 9 11	78	45	7	15 3 9	123	45	6½	12 2 5
34	45	5	9 5 5	79	45	3½	4 4 8	124	45	6	11 3 0
35	45	4	6 3 11	80	45	6½	12 2 5	125	45	5	7 9 9
36	45	5	7 9 9	81	45	6½	12 2 5	126	45	4½	7 0 7
37	45	4½	6 3 11	82	45	3½	3 9 11	127	45	6	11 3 0
38	45	5	7 9 9	83	45	4	5 0 0	128	45	5	7 9 9
39	45	4	5 0 0	84	45	5½	8 7 4	129	45	5	7 9 9
40	45	6	11 3 0	85	45	3½	4 4 8	130	45	4½	5 7 8
41	45	6	13 2 5	86	45	4	7 0 7	131	45	5	7 8
42	45	3	3 3 7	87	45	4½	6 3 11	132	45	5½	10 3 11
43	45	7	16 5 1	88	45	7½	16 5 1	133	45	4½	6 3 11
44	45	6	12 2 5	89	45	4	5 0 0	134	45	5	8 7 4
45	45	4	4 4 8	90	45	4	5 0 0	135	45	3½	4 4 8
Total ..											1,101 4 9

Average $\frac{1}{2}$ girth = 3' 11".

Average cubic contents = 8' 1 10.

APPENDIX H.

Contents of Half Acre in Plantation 1868, Wallushary.

Number.	Length.	Quarter Girth.	Cubic Contents.	Number.	Length.	Quarter Girth.	Cubic Contents.	Number.	Length.	Quarter Girth.	Cubic Contents.
	FT.		C.F.T. IN. P.		FT.		C.F.T. IN. P.		FT.		C.F.T. IN. P.
1	40	5	6 11 4	65	40	2½	2 1 2	129	40	3½	3 10 10
2	40	3	3 4 10	66	40	4½	5 7 6	130	40	2½	1 8 10
3	40	3	3 10 10	67	40	3½	3 4 10	131	40	3	3 10 10
4	40	2	2 1 2	68	40	3	2 6 0	132	40	2½	1 8 10
5	40	3	3 10 10	69	40	4½	5 0 2	133	40	4½	5 0 2
6	40	3	3 4 10	70	40	5	6 11 4	134	40	2½	1 8 10
7	40	5	6 11 4	71	40	3	3 10 10	135	40	5	6 11 4
8	40	2	1 1 4	72	40	2½	2 1 2	136	40	2½	1 8 10
9	40	2½	1 4 10	73	40	2½	1 8 10	137	40	4½	1 8 10
10	40	3	2 11 2	74	40	3	2 6 0	138	40	4	5 0 2
11	40	2	1 8 10	75	40	2½	1 8 10	139	40	3½	2 11 2
12	40	2	1 1 4	76	40	3	3 10 10	140	40	2½	1 8 10
13	40	3½	2 11 2	77	40	3	2 6 0	141	40	3	2 6 0
14	40	3	3 4 10	78	40	3	2 6 0	142	40	2½	1 8 10
15	40	4	4 5 4	79	40	3½	2 11 2	143	40	3	3 4 10
16	40	3	2 6 0	80	40	4	4 5 4	144	40	3	2 6 0
17	40	3½	3 10 10	81	40	3½	2 11 2	145	40	4½	5 0 2
18	40	4	4 5 4	82	40	3½	3 4 10	146	40	2½	1 8 10
19	40	3	3 10 10	83	40	2½	1 8 10	147	40	2½	1 8 10
20	40	3	2 6 0	84	40	3	2 6 0	148	40	5	6 11 4
21	40	3½	3 4 10	85	40	2½	1 8 10	149	40	2½	1 8 10
22	40	2	1 8 10	86	40	4	4 5 4	150	40	4	5 0 2
23	40	3	3 10 10	87	40	2½	1 8 10	151	40	3	2 6 0
24	40	3	3 10 10	88	40	2	0 8 10	152	40	4½	6 3 2
25	40	3	2 6 0	89	40	4	6 3 2	153	40	2½	1 8 10
26	40	2½	1 4 10	90	40	3	3 10 10	154	40	2½	1 8 10
27	40	3	2 6 0	91	40	4	5 0 2	155	40	3½	2 11 2
28	40	3	2 6 0	92	40	4½	5 0 2	156	40	5½	8 4 10
29	40	2½	1 8 10	93	40	2	1 8 10	157	40	5	6 11 4
30	40	3½	2 11 2	94	40	4	6 3 2	158	40	3½	2 11 2
31	40	2½	1 8 10	95	40	3	2 11 2	159	40	3	2 6 0
32	40	3	2 6 0	96	40	6	10 10 2	160	40	3½	2 11 2
33	40	4	4 5 4	97	40	2	1 8 10	161	40	5	6 11 4
34	40	3	2 6 0	98	40	4	4 5 4	162	40	3	2 6 0
35	40	2	1 1 4	99	40	3	2 6 0	163	40	3½	2 11 2
36	40	2½	1 4 10	100	40	3½	3 10 10	164	40	3	2 6 0
37	40	3	2 6 0	101	40	2	1 8 10	165	40	4	4 5 4
38	40	3½	2 11 2	102	40	4	5 7 6	166	40	3½	2 11 2
39	40	3	3 4 10	103	40	2	1 8 10	167	40	3	2 6 0
40	40	2	1 8 10	104	40	3	3 10 10	168	40	4	4 5 4
41	40	3	2 6 0	105	40	3	3 10 10	169	40	4	4 5 4
42	40	2	1 8 10	106	40	2	1 8 10	170	40	4	4 5 4
43	40	2	1 1 4	107	40	3	3 10 10	171	40	2½	1 8 10
44	40	2	2 1 2	108	40	5	7 7 10	172	40	5	6 11 4
45	40	4	6 3 2	109	40	4	4 5 4	173	40	3½	3 4 10
46	40	2	1 8 10	110	40	2	2 1 2	174	40	2½	1 8 10
47	40	2	1 8 10	111	40	2	2 11 2	175	40	2½	1 8 10
48	40	2	1 1 4	112	40	4	5 0 2	176	40	5	6 11 4
49	40	2	2 1 2	113	40	2½	1 8 10	177	40	3	3 10 10
50	40	3	3 4 10	114	40	3	2 6 0	178	40	3	2 6 0
51	40	4	6 0 2	115	40	5½	7 7 10	179	40	3	2 6 0
52	40	2	1 8 10	116	40	2	1 8 10	180	40	2½	1 8 10
53	40	2	1 8 10	117	40	2	1 8 10	181	40	2½	1 8 10
54	40	2	2 1 2	118	40	3	2 6 0	182	40	3	2 11 2
55	40	4	1 8 10	119	40	4½	5 0 2	183	40	2½	1 8 10
56	40	3	2 6 0	120	40	2	2 1 2	184	40	2½	1 8 10
57	40	4½	5 0 2	121	40	2	1 8 10	185	40	3½	2 11 2
58	40	3½	2 11 2	122	40	4	5 0 2	186	40	3	2 6 0
59	40	3	3 4 10	123	40	5	6 11 4	187	40	4½	6 3 2
60	40	3	2 6 0	124	40	2½	1 8 10	188	40	2½	1 8 10
61	40	4	4 5 4	125	40	2	1 8 10	189	40	3	3 10 10
62	40	4½	5 0 2	126	40	3½	2 11 2	190	40	3	2 6 0
63	40	3	2 6 0	127	40	3	2 6 0	191	40	3	2 6 0
64	40	3½	3 10 10	128	40	2½	1 8 10	192	40	3	2 6 0

APPENDIX II—(Continued).

Contents of Half Acre in Plantation 1868, Wallashary.

Number.	Length.	Quarter Girth.	Cubic Contents.	Number.	Length.	Quarter Girth.	Cubic Contents.	Number.	Length.	Quarter Girth.	Cubic Contents.
	FT.		C.F.T. IN. P.		FT.		C.F.T. IN. P.		FT.		C.F.T. IN. P.
193	40	3 1	3 4 10	254	40	3 1	3 10 10	315	40	3 1	2 11 2
194	40	3 1	3 10 10	255	40	3 1	2 6 0	316	40	2 1	2 1 2
195	40	5	6 11 4	256	40	4	4 5 4	317	40	3	2 6 0
196	40	2 1	1 8 10	257	40	1 1	5 7 6	318	40	3	2 6 0
197	40	3 1	3 4 10	258	40	3	2 6 0	319	40	5 1	8 4 10
198	40	4	6 3 2	259	40	5 5	9 2 2	320	40	2 1	1 3 10
199	40	2 2	2 1 2	260	40	3 3	3 10 10	321	40	3 1	2 11 2
200	40	2 2	2 1 2	261	40	5 5	6 11 4	322	40	3	2 6 0
201	40	3	2 6 0	262	40	3 1	3 4 10	323	40	3 3	3 10 10
202	40	3 1	3 4 10	263	40	3	2 6 0	324	40	3 3	3 4 10
203	40	3	2 6 0	264	40	3 1	3 4 10	325	40	3	2 6 0
204	40	3 1	2 11 2	265	40	3 1	2 11 2	326	40	2 1	2 1 2
205	40	2 1	1 8 10	266	40	3	2 6 0	327	40	2 1	1 8 10
206	40	4	5 7 6	267	40	3 1	3 4 10	328	40	3 1	2 11 2
207	40	4	4 5 4	268	40	2 1	1 8 10	329	40	2 1	1 8 10
208	40	3	2 6 0	269	40	2 1	2 1 2	330	40	5	6 11 4
209	40	4 1	5 7 6	270	40	3 1	3 4 10	331	40	2 1	1 8 10
210	40	2 1	1 8 10	271	40	3 1	2 11 2	332	40	4	5 0 2
211	40	3 1	3 4 10	272	40	2 1	2 1 2	333	40	3	2 6 0
212	40	2 1	2 1 2	273	40	2 1	1 8 10	334	40	3	2 6 0
213	40	3 1	2 11 2	274	40	3	2 6 0	335	40	3	2 6 0
214	40	2 1	2 1 2	275	40	3 1	2 11 2	336	40	2 1	1 8 10
215	40	3	2 6 0	276	40	2 1	1 8 10	337	40	4 1	5 0 2
216	40	4 1	5 0 2	277	40	2 1	1 8 10	338	40	2 1	1 8 10
217	40	2 1	1 8 10	278	40	5	6 11 4	339	40	5	6 11 4
218	40	3	2 6 0	279	40	4	4 5 4	340	40	4 1	5 0 2
219	40	4 1	5 0 2	280	40	3 1	2 11 2	341	40	3	2 11 2
220	40	3	2 6 0	281	40	3 1	3 10 10	342	40	3	1 8 10
221	40	3 1	2 11 2	282	40	3 1	2 11 2	343	40	4	5 0 2
222	40	2 1	1 8 10	283	40	2 1	1 8 10	344	40	2 1	1 8 10
223	40	5	6 11 4	284	40	3 1	3 4 10	345	40	2	2 1 2
224	40	4 1	5 0 2	285	40	4 1	5 0 2	346	40	2	2 1 2
225	40	3	2 6 0	286	40	3	2 6 0	347	40	6 1	11 8 10
226	40	3	2 6 0	287	40	4 1	5 7 6	348	40	3	2 6 0
227	40	3 1	3 4 10	288	40	2 1	1 8 10	349	40	3	3 4 10
228	40	3 1	3 4 10	289	40	3	2 6 0	350	40	2	1 8 10
229	40	3 1	3 10 10	290	40	4	4 5 4	351	40	3	2 11 2
230	40	2 1	1 8 10	291	40	4 1	5 7 6	352	40	5	6 11 4
231	40	2 1	2 1 2	292	40	2 1	1 8 10	353	40	4 1	5 0 2
232	40	3 1	3 10 10	293	40	2 1	1 8 10	354	40	2	1 8 10
233	40	2 1	2 1 2	294	40	3 1	3 4 10	355	40	3	2 6 0
234	40	2 1	1 8 10	295	40	3	2 6 0	356	40	4 1	5 0 2
235	40	3 1	3 10 10	296	40	3 1	3 4 10	357	40	2	1 8 10
236	40	3	2 6 0	297	40	4 1	5 0 2	358	40	4 1	5 7 6
237	40	3 1	2 11 2	298	40	2 1	1 8 10	359	40	4	6 3 2
238	40	3 1	3 10 10	299	40	3	2 6 0	360	40	3	2 6 0
239	40	3 1	3 10 10	300	40	2 1	1 8 10	361	40	4 1	5 0 2
240	40	3	2 6 0	301	40	4	4 5 4	362	40	3	2 6 0
241	40	3 1	3 10 10	302	40	2 1	1 8 10	363	40	2 1	1 8 10
242	40	4 1	5 0 2	303	40	3 1	3 4 10	364	40	3 1	2 11 2
243	40	3 1	2 11 2	304	40	3 1	2 11 2	365	40	4 1	5 0 2
244	40	4 1	5 0 2	305	40	3 1	3 10 10	366	40	2 1	1 8 10
245	40	3 1	2 11 2	306	40	3 1	2 11 2	367	40	2 1	2 1 2
246	40	2 1	1 8 10	307	40	4	4 5 4	368	40	3	2 6 0
247	40	3	2 6 0	308	40	3	2 6 0	369	40	3 1	2 11 2
248	40	4 1	5 0 2	309	40	3 1	3 10 10	370	40	4 1	5 0 2
249	40	4	4 5 4	310	40	3 1	2 11 2	371	40	3	2 6 0
250	40	2 1	1 8 10	311	40	5	6 11 4	372	40	4	4 5 4
251	40	3	2 6 0	312	40	3 1	3 4 10	373	40	5	6 11 4
252	40	4 1	5 7 6	313	40	3	2 6 0	374	40	2 1	1 8 10
253	40	2 1	2 1 2	314	40	5	6 11 4	375	40	3 1	2 11 2
			Total ..				1,245 6 4				

Average 1/2 girth = 3' 1 1/2".

Average cubic contents = 2' 2 1/2".

APPENDIX I.

Register of Areas planted yearly from 1840 to 1876.

No.	Year planted and local Name of Plantation.	Planted and Surveyed Acres.	Not Planted.	Total Area in Acres.
1	Iravelly Kava, 1842	30.93		
2	Do. 1844	27.35		
3	Do. 1852	38.57		
4	Do. 1853	34.71.		
5	Arovakode, 1847	29.29		
6	Do. 1848	84.34		
Total ..		245.19		
7	Yedacode, 1844	30.65		
8	Do. 1845	28.14		
9	Do. 1846	44.78		
10	Do. 1847	54.61		
11	Do. 1848	82.15		
12	Do. 1849	44.58		
13	Do. 1850	49.67		
14	Do. 1851	147.19		
15	Do. 1857	36.14		
16	Do. 1860	39.56		
17	Do. 1861	86.05		
18	Do. 1862	50.11		
Total ..		693.63		
19	Elanjerry, 1845	33.19		
20	Do. 1846	65.84		
21	Do. 1849	89.95		
22	Do. 1850	65.15		
23	Do. 1858	42.79		
24	Do. 1859	39.84		
Total ..		337.76		
25	Ramalur, 1844	4.93		
26	Do. 1850	16.40		
Total ..		21.33		
27	Moolathamano, 1847	34.63		
28	Do. 1848	16.04		
29	Do. 1853	20.89		
Total ..		71.56		
Total of Nelambur Block ..		1369.47	3831.09	5200.56
30	Pannengode, 1854	92.33		
31	Do. 1855	100.32		
32	Do. 1856	79.26		
33	Do. 1863	81.25		
34	Do. 1864	40.57		
Total ..		393.73	511.43	905.16

APPENDIX I—(Continued).

Register of Areas planted yearly from 1840 to 1876—(Continued).

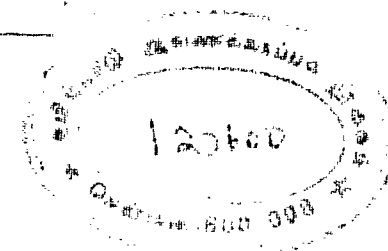
No.	Year planted and local Name of Plantation.	Planted and Surveyed Acres.	Not Planted.	Total Area in Acres.
35	Wallashary, 1864	81.14		
36	Do. 1865	56.63		
37	Do. 1866	32.80		
38	Do. 1866	96.84		
39	Do. 1867	41.31		
40	Do. 1867	77.32		
41	Do. 1868	33.94		
42	Do. 1868	79.08		
43	Do. 1868	32.38		
44	Do. 1869	39.36		
45	Do. 1869	14.20		
	Total ..	584.00	348.20	932.20
46	Chathumbudovoi, 1872 ..	207.56		
47	Do. 1873	99.08		
48	Do. 1874	91.46		
49	Do. 1875	100.00		
	Total ..	498.10	201.42	699.52
50	Nellicottah, 1870	74.23		
	Do. 1871	46.00		
	Total ..	120.23	1703.90	1824.13
51	Amrapolliam, 1861-68 ..	87.44		
52	Do. 1873	42.39		
53	Do. 1874	69.03		
54	Do. 1875	60.91		
55	Do. 1876	149.00		
	Total ..	408.77	65.46	474.23
56	Mangalashary	10.74		
57	Amblakandy	1.01		
58	Mangalashary	19.58		
59	Chittarikai	8.35		
60	Patalathoo			
61	Arimbrakullamala	22.00		
	Total ..	61.68	299.75	361.43
	Total ..	3435.98	6961.25	10397.23
	Add Karimpoya and other Blocks in which there are no plantations (Vide Appendix J).	...	8472.46	..
	Grand Total ..	3435.98	15433.71	18869.69

APPENDIX J.

Register of Surveyed Areas of Natural Forest and Teak Plantations in the several Blocks comprising the Nelambur Forest Division.

No.	Name of Forest Blocks.	No. of Acres Planted.	No. of Acres not Planted.	Total Acres in each Block.
1	Nelambur	1369.47	3831.09	5200.56
	Pannengode	393.73	511.43	905.16
2	Wallashary	584.00	348.20	932.20
	Pokode	..	761.25	761.25
3	Kanakutta	..	668.61	668.61
4	Chathumbudovoi	498.10	201.42	699.52
5	Eddumbadum	..	381.26	381.26
6	Mooriam	..	1765.13	1765.13
7	Karicu	..	950.61	950.61
8	Nellicottah	120.23	1703.90	1824.13
9	Karimpoya	..	3945.60	3945.60
10	Amrapolliam	408.77	65.46	474.23
11	Arimbracuttamala	22.00	299.75	321.75
12	Amblakandi	1.01	..	1.01
13	Mangalashary (Ernad) ..	10.74	..	10.74
14	Mangalashary (Calicut) ..	19.58	..	19.58
15	Puthulathoo	..	..	..
	Chitarikel	8.35	..	8.35
	Grand Total ..	3435.98	15433.71	18869.69

(Ent)



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