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REVISED WORKING PLAN

FOR THE

WALAYAR FORESTS
PALGHAT DIVISION

BY

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1926—1935

MADRAS
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INTRODUCTION.

For some time past there have been considerable differences of opinion about the most advisable management of the Walayar forests.

In Chief Conservator's L. Dis. No. 7133/23, Mr. J. W. K. Wernham, Deputy Conservator of Forests, was ordered to prepare a Working Plan and commenced work on 14th September 1923.

This officer was, however, unable to do more than submit a preliminary report before he was posted to other duty. The District Forest Officer who was then ordered to carry on with the work was unable to find time for it, and the matter was dropped until 1925, when Government in their G.O. Mis. No. 267, Development, dated 18th February 1925, sanctioned the Chief Conservator's proposals that Mr D. Mc. D. Currie, Deputy Conservator of Forests and Special Working Plans Officer should prepare a Revised Working Plan for the Walayar forests.

His preliminary reconnaissance report was submitted on 7th April 1925 and has proved of great assistance to the present writer.

In August 1925 the Working Plan Conservator—Mr. A. Wimbush, and the Conservator of Forests, VI Circle—Mr. T. A. Whitehead visited Walayar, and came to a decision, in consultation with the Chief Conservator, as to the lines on which the revision of the Working Plan should proceed.

The present writer commenced the field work on 8th October 1925 and completed it on 17th January 1926 and was assisted from 30th November 1925, by Ranger Raman Pillai.

H. G. HICKS,
Working Plans Officer.

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PART I.

Summary of facts on which the proposals are based.

CHAPTER I.

THE TRACT DEALT WITH.

Section 1.—Name and Situation.

The tract dealt with comprises those portions of the Palghat Range east of the exploitation unit at Chenat Nair, in which are included the following reserves :—

(*a*) Walayar reserve ; made up of Pulampara and Varalapadi Blocks.

(*b*) Tenkaradu reserve.

(*c*) Sholakarai reserve.

(*d*) The so-called Eighty-one-acre piece.

(*e*) The southern slopes of the hills, south and east of Bolampatti range boundary, hereafter referred to as the Bolampatti hills as there is no local name for the whole hill range.

2. These forests are situated on the north side of the eastern end of the Palghat gap, on and at the foot of the Bolampatti hills.

3. The district boundary—the Walayar river—runs through the area, the Walayar reserve alone being on the Malabar side and the remainder on the Coimbatore side.

Section 2.—Configuration of the Ground.

4. The tract is roughly divided into a hills and a plains area. Of the former the slopes of the Bolampatti hills vary from precipitous to nearly level and rise to the 4,000 feet level. Of the latter there is—

(*a*) a hilly portion at the western end of the Varalapadi Block,

(*b*) a hilly portion in the west of Pulampara Block,

(*c*) Tenkaradu hill in Tenkaradu Block.

The remaining forest area is level at an elevation of about 1,000 feet. Numerous water courses descend from the hills proper to the plains and many others intersect the blocks on the plain.

Section 3.—Geology, Rock and Soil.

5. The Bolampatti hills are formed of rock of gneissic origin and this rock underlies the whole tract with the exception of patches of kanker in Sholakarai Block.

6. The soil is mostly a sandy loam, sometimes a ferruginous red and sometimes darker, both being of gneissic origin, the darker soil being due to organic rather than inorganic causes.

7. In Sholakarai Block patches of black-cotton soil with kanker occur.

8. The depth of the soil varies from deep to shallow. Outcrops of rock occur throughout the area.

Section 4.—Climate.

9. *Wind.*—Situated as it is in the Palghat gap, the locality is exposed to both the south-west and north-east monsoons.

10. *Temperature.*—The climate is hot from January to April and damp and steamy from June to December.

11. *Malaria.*—The forests are said to be very malarious ; hence the inspection bungalow and subordinates' quarters have been built away from the forests.

12. *Rainfall.*—Tables showing the rainfall since 1902 are appended, as measured at Walayar and Singalpallam rain stations.

The average annual rainfall is about 45 inches but individual years show considerable variation.

SINGALPALLAM.

Month.	1902. (1)	1903. (2)	1904. (3)	1905. (4)	1906. (5)	1907. (6)	1908. (7)	1909. (8)	1910. (9)	1913. (10)	1914. (11)
	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.
January ..	1·2	..	..	..	..	..	..	1·6	..	..	..
February ..	..	..	..	..	..	..	1·2	..	..	..	..
March ..	3·7	..	..	..	2·6	0·5	1·8	..	..	..	..
April	1·5	..	..	..	..	1·8	1·9	1·9	..	..	..
May .. .	2·1	2·6	0·8	2·9	9·9	0·5	3·0	10·3	..	..	..
June	1·5	3·9	15·7	4·2	2·4	16·4	7·0	24·0	..	..	5·7
July	29·4	39·9	17·9	5·0	..	11·4	9·7	..	..	12·0	13·9
August ..	3·0	6·5	9·2	0·5	7·5	18·4	5·6	..	..	4·8	14·0
September ..	4·3	3·7	1·2	1·3	..	0·5	0·5	..	..	..	5·6
October ..	2·5	7·7	14·2	6·7	3·2	7·0	9·9	..	..	8·0	6·9
November ..	5·2	..	..	..	1·5	3·9	0·8	..	..	2·8	5·2
December ..	6·7	7 3	..	..	1·9	3·0	.	..	..	..	..
Total ..	81·1	71·6	59·0	20·6	29·0	63·4	41·4	..	..	..	51·3

Month.	1915. (12)	1916. (13)	1917. (14)	1918. (15)	1919. (16)	1920. (17)	1921. (18)	1922. (19)	1923. (20)	1924 (21)	1925. (22)
	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES	INCHES.	INCHES.	INCHES.	INCHES.
January ..	8·0	..	..	..	..	1·1	1·8	1·8	..	..	..
February ..	..	..	2·4	..	..		..	1·1	..	..	0·5
March ..	2·4	..	1·2	0·6	..	..	..	0 4	2·4	2·6	1·6
April	0·2	0·4	1·4	..	2·4	1·6	2 4	0·4	..	0·8	0·1
May	0·4	1·2	0·8	7·2	3·4	3·2	2·8	2·0	1·8	1·6	0·8
June	12·0	12·8	7·6	3·6	20 2	4·2	12 8	5·2	3·6	13·4	8·0
July	1·1	10·8	10·0	1·2	6·5	23·6	10·8	8 0	11·8	33·2	10·8
August ..	12·0	9 6	1·2	4·6	14·4	0·8	7·9	1·2	14·4	2·8	3·6
September ..	3·6	5·2	3·2	0·1	3·0	1·8	3·4	0·8	1·4	4·0	5·6
October ..	2·0	2·8	5·6	8·2	6·0	2·0	..	7·6	3·0	2·8	4·6
November ..	10·8	1·2	5·2	15 9	4·4	5·6	5·2	2·0	0·8	3·4	3·6
December ..	2·0	..	1·2	..	0·9	..	..	1·2	0·5	..	Record incomplete
Total ..	54·5	44·0	39·	41·4	61·2	43·9	47·1	31·7	39·7	64·6	..

There are no records from July 1909 to December 1912.

WALAYAR.

Month.	1902. (1)	1903. (2	1904. (3)	1905. (4)	1906. (5)	1907. (6)	1908. (7)	1909. (8)	1910. (9)	1913. (10)	1914 (11)
	INCHES.	INCHES.		INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.
January ..	..	..		..	..	..	..	1·2	..	..	..
February ..	..	..		..	..	..	0·4	..	..	..	..
March ..	4·0	..	record.	..	2·6	1·2	1·4	..	..	..	..
April	2·0	..		..	..	2·2	1·6	1·7	..	..	..
May	2·3	2·8		1·1	2·9	8·0	1·6	7·0	..	..	..
June	2·5	3·4		12 2	3·4	13·2	6·2	15·9	..	..	4·0
July	29·8	37·5		15·0	12·2	11·2	9·0	..	..	12·0	8·0
August ..	2·9	8·8		1·8	15·2	14·6	6·0	..	..	8·0	14·0
September ..	5·5	4·6		4 0	..	0·6	0·6	..	..	..	7·4
October .	14·7	12·2	Faulty	13·4	6·0	7·0	5·7	..	..	12·0	4 4
November ..	1·9	..		1·9	3·6	3·6	..	..	..	2·8	1·2
December ..	5·0	9·3		..	3·2	3·2	0·2	..	..	..	..
Total ..	70·6	78·6	..	49·4	49·1	64·8	32 7	..	..	..	39·0

Month.	1915. (12)	1916. (13)	1917. (14)	1918. (15)	1919. (16)	1920. (17)	1921. (18)	1922. (19)	1923. (20)	1924. (21)	1925. (22)
	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.
January ..	1·6	..	..	0·8	..	0·2	1·8	2·4	..	..	..
February ..	..	..	2·8	..	..	..	..	1·2	..	..	1·5
March ..	1·2	..	1·2	1·2	..	..	..	1·0	0·6	2·4	2·6
April	0·2	0·4	1·2	..	1·8	2·0	3·2	0·2	..	0·6	1·0
May	0·5	1 2	0 8	8·0	3·2	4·0	3·6	3·0	2·1	2·4	1·6
June	12·0	12·0	8·0	4·4	12·8	4·0	11·3	5·6	4·8	12·6	7·0
July	0·9	10 0	10·0	1·6	8·0	32·6	14·4	14·0	11·2	32·4	11·0
August ..	14·8	12 4	1·6	10·2	15·0	0·8	13·2	2·8	16·0	4·8	6·0
September ..	4·2	4·8	6·0	..	3·0	6·4	5·6	1·0	2·0	3·8	1·8
October ..	3·2	2·8	5·6	5·8	7·0	1·6	5·3	6·8	2·6	6·6	3·8
November ..	10·0	1·6	5 2	16 0	6·8	6·8	5·3	2·2	1·0	5·2	4·4
December ..	3 2	0·2	4·0	..	0·1	..	..	2·0	0·8	0·6	Record incomplete
Total ..	51·8	45 4	46·4	48·0	57·7	58·4	63·7	42·2	41·1	71·4	..

Section 5.—Water-supply.

13. There are three perennial streams—

(*a*) The Walayar river.

(*b*) The Partikarai Thodu in Compartment No. 12.

(*c*) A stream east of Tenkaradu hill known as the Tanni-torapulam Thodu which flows from the Bolampatti hills through the cultivated land on the plains and is therefore important.

There is also a perennial water-hole near the foot of the Bolampatti hills, a little to the east of the Kuthadi Malai valley.

14. The only two artificial sources of supply are, a well of good water in the Forest Rest-house compound, and another on forest land adjoining the railway station.

15. All other water-courses only contain water after rain.

Section 6.—Distribution and Area.

16. The tract dealt with is divided into the following Blocks:—

Pulampara, Varalapadi, Waterfall, Tenkaradu and Sholakarai.

In addition there is the unworkable portion of the Bolampatti hills lying between the Walayar river on the west and the panchayat forest on the east, and bounded on the north by the Bolampatti-Palghat range boundary on the crest of the hills.

17. The area is made up as follows:—

Name of block.	Compartment numbers.	Area.
		ACS.
Pulampara	1—7	1,644 *
Varalapadi	8—13	1,283
Sholakarai	14—18	1,254
Tenkaradu	Not divided into compartments.	1,294
Waterfall		563

* Of which 281 acres are unworkable.

18. The area of the unworkable portion of the Bolampatti hills is approximately 3,600 acres giving a total acreage for the Walayar forests of about 9,600 acres or 15 square miles.

Section 7.—The State of the Boundaries.

19. The reserve boundaries are demarcated as follows:—

(1) The Walayar reserve (i.e., Pulampara and Varalapadi Blocks) by—

(*a*) Numbered cairns, with stone pillars.

(*b*) Artificial boundaries, e.g., the Coimbatore-Palghat road.

(*c*) Natural boundaries, e.g., the Walayar river and Katharaman Thodu—for such portions as these streams form the reserve boundaries small stones have been put in the ground along the fire lines which are parallel to these streams.

(*d*) Unnumbered cairns. This is the case from the point in Varalapadi Block where the reserve line leaves the Walayar river on the north of the Block to where it joins the Katharaman Thodu on the south.

(2) From the Walayar river on the west to the panchayat forest on the east including Sholakarai and Tenkaradu Blocks—

(*a*) Cairns 1—55; by cairns and numbered stone pillars

(*b*) Cairns 56—102; by numbered cairns only.

(*c*) Cairns 103—202; by cairns and numbered stone pillars.

20. The state of most of the boundaries is satisfactory excepting that portion indicated under 1 (*d*) where elephants have demolished many of the cairns.

Section 8.—Legal Position.

21. All the forests included in this Plan have been settled and notified under section 16 of Act V of 1882, except the Walayar reserve which was notified under section 25:—

Reserve.	Section of the Act under which notified.	Fort St. George Gazette.		District Gazette.		Date of taking effect.
		Page number.	Date.	Page number.	Date.	
Walayar	25	..	....	..	....	....
Sholakarai	16	780–781	2nd December 1884	12	7th March 1885.	1st January 1885.
Tenkaradu	16	780–781	Do.	12	Do.	Do.
81-acre piece ..	16	417	25th June 1889.	59 and 60	19th July 1889.	1st July 1889.

22. The following reserves, or portions of reserves, have been disafforested during the period of the last plan:—

(1) Sankarayapuram reserve ... ... *Fort St. George Gazette*, No. 113, page 396, Part I, dated 11th April 1922.

This took effect from June 1st, 1922.

Area affected ... ... 97 acres.

(2) A portion of Pulampara Block (Compartment No. 6) adjoining the Coimbatore-Palghat road— *Fort St. George Gazette*, No. 318, dated 25th October 1922.

Area affected ... ... 9·6 acres.

Section 9.—Rights and Concessions.

23. The following rights of way were admitted at the time of settlement:—

(1) Right of way between the railway station and the forest road referred to under right No. 2.

(2) Right of way from Walayar village to Nadupathi.

(3) Right of way from railway station to Coimbatore-Palghat road.

(4) Right of way from Chinniah Goundan's land through north-west corner of Varalapadi Block.

These rights still hold good.

24. The South Indian Railway have a short length of 'Slip' line extending into Compartment No. 7 but no record of the acquisition of the forest land can be found in the District Forest office.

The Railway authorities are allowed the privilege of using the well near the railway station.

In the north-east corner of Varalapadi Block a small portion of land by the Walayar river has been set apart for the use of forest watchers (Irulars). They are tenants-at-will of the Forest department.

CHAPTER II.

THE FOREST.

Section 1.—Composition and Condition of the Crop.

25. A list of species chiefly found is given in Appendix I.

The Walayar forests fall into two distinct types: Pulampara and Varalapadi Blocks and the greater part of the hill slopes lying between the Walayar river and the Kuthadi Malai valley show a mixed deciduous forest on a fairly fertile soil, often of fair growth and stocking.

26. There is a considerable quantity of teak, in places of really good growth, a little Pterocarpus Marsupium (Vengai) and a few rosewood. Sholakarai, Tenkaradu and the hill areas east of the Kuthadi Malai valley on the other hand, growing on a drier and much less fertile soil show an inferior type of forest with a high percentage of xerophytic types. This deterioration becomes more pronounced on proceeding eastwards until a condition of mere thorny scrub is reached on the most easterly portions of the hill slopes.

27. As far as the standards are concerned every variety of stocking can be found, from a too dense crop of virtual high forest in Varalapadi Block to areas in Sholakarai Block where there are practically no standards at all. Both these extremes have operated to the detriment of the coppice—the former by suppression, and the latter by allowing a pernicious growth of bamboo, lantana, etc., to diminish greatly the chances of successful coppice reproduction and incidentally to preclude any natural regeneration. Seedling regeneration is on the whole poor, though in the absence of detrimental undergrowth and given sufficient light teak seedlings are often found in small patches.

28. Height growth varies from good, in parts of Varalapadi and Waterfall Blocks, to mere scrub, on the eastern end of the hill areas.

29. There are one or two areas of evergreen jungle on the inaccessible heights of the Bolampatti hills.

30 In Sholakarai and Tenkaradu Blocks the better species, with the exception of a few isolated and badly grown teak, are non-existent though some teak persist on the main hill slopes as far east as the eastern end of Tenkaradu hill. This is possibly due to fire having passed over these slopes while the main Sholakarai Block has been more or less fire protected.

31. Both Bambusa arundinacea and Dendrocalamus strictus are found throughout the area and are often very dense, the former mostly west and the latter east of the Walayar river. In a few places the bamboo forms a pure crop.

32 The poor hill slopes to the east are however almost devoid of bamboo, though on the only portion of the main hill slopes that have been worked, viz., that behind Tenkaradu hill, bamboo is now present in quantity.

33. Lantana has got in wherever conditions have been favourable to it and it is very prevalent on the hill slopes. It is nowhere as yet strangling mature trees but will prove a source of trouble in regenerating.

34. Climbers do not do much damage except to individual trees but they should be systematically cut as teak suffers particularly from their attentions. The species principally obnoxious is Spathalobus Roxburghii. Helicteres isora and Holarrhena antidysenterica form a beneficial undergrowth in the more favoured localities.

35. In the fully stocked areas in the Walayar reserve there is a noticeable absence of any sort of undergrowth.

36. A great deal of teak seed appears to be produced but generally never gets a chance to germinate, chiefly owing to the dense bamboo growth.

37. The forest has been worked under the 'Coppice with standards' system from 1902 to 1923 and from then onwards under the "Simple Coppice" system. (For further details as to the results of this system vide under Chapter V, section 2, and for more detailed description of the crop vide Description of compartments—Appendix II.)

Section 2.—Injuries to which the crop is liable.

38. (*a*) *Man.*—Situated as they are so close to the railway and road, the Walayar forests have, inevitably, suffered from theft.

Apparently about ten years ago and more there must have been considerable illicit felling of teak on the hill slopes. No recent thefts on these hills are now observed. It is believed however that considerable petty thieving goes on more or less openly in the forest adjacent to the railway station, the employees of the railway not being above suspicion, and a certain amount of wood is undoubtedly stolen from the forests adjoining the main road for firewood.

Serious timber thieving however seems to have been checked though it is reported that timber thieves come over from the Bolampatti valley.

Protection is however admittedly difficult, partly owing to the position of the forests and partly owing to the rooted conviction on the part of the local people that they are entitled to a free supply of their requirements from these forests.

A certain amount of intimidation of the local staff goes on so that it is very desirable that a really good forester should always be posted to Walayar and also that the local magistrate should rigorously punish offenders.

So far as can be ascertained from a perusal of the offence records, protection appears to have been bad between 1911 and 1917.

From 1918 up to the present day protection appears to have been better and to have resulted in the detection and reporting of a number of offences, which bears a reasonable relationship to the comparatively small amount of damage noticeable in the forest itself.

(*b*) *Fire.*—The proximity of the railway line renders the forests in its vicinity liable to fires. The hills are more subject to serious fires than the plains forests, but on the whole the forests suffer very little damage by fire. Fire protection has been in force since 1880.

A list of fire occurrences since 1911 is given below :—

List of Fire occurrences.

Year.	Locality.	Area in acres.	Type.	Month.	Cause.
		ACS.			
1911..	Pulampara	3·75	....	February ..	Railway engine.
	Do.	2·50	....	Do. ..	Do.
1912..			No record ..		
1913..			No record ..		
1914..	Keeropatti	0·60	Ground ..	February ..	While burning fire line.
1915..	Pulampara	0·50	Grass	May	While burning fire line.
1916..	Near Koochi Malai ..	30	Ground ..	March	Not known.
	Keeropatti	10	Do. ..	Do.	Do.
	Near Kuthadi Malai * ..	70	Do. ..	Do.	By graziers.
	Varalapadi	2	Trees, etc. ..	Do.	From private forests.
	Ayaswami Malai * ..	200	Ground ..	Do.	Not known.
	Koochi Malai	30	Do. ..	April	From Sholakarai.
	Tenkaradu	16	Do. ..	Do.	By graziers.
	Do.	100	Do. ..	Do.	By Malsas.
	Walayar reserve ..	2·50	Do. ..	Do.	From Edacheri along fire line.
	Sholakarai	40	Do. ..	March	Intentional.
	Ayaswami Malai * ..	50	Do. ..	Do.	Not known.
	Keeropatti	6	Do. ..	February ..	Do.
1917..					
1918..	Keeropatti	24	Ground ..	February ..	Unknown.
	Do.	141	Do. ..	March	Carelessness of contractor's coolies in burning strips.
	Kuthadi Malai *	7	Do. ..	Do.	From Sholakarai reserve.
	Keeropatti	21	Do. ..	April	From other side of hill.
1919.	Pulampara	80	Ground ..	March	Railway engine.
1920..	Pulampara	12	Trees ..	February ..	Railway engine.
	Varalapadi	68	Ground ..	March	From private forests.
	Pulampara	16	Do. ..	Do.	Do.
	Sholakarai	56	Do. ..	Do.	Unknown.
1921..	Keeropatti	60	Ground ..	March	Intentional.
1922..	Sholakarai	9	Ground ..	January ..	Railway engine.
	Keeropatti	80	Do. ..	March	Believed intentional.
1923..			Nil. ..		
1924..	Near Waterfall	30	Fierce, tree growth killed.	March	Intentional.
	Keeropatti	90	Ground ..	Do.	Believed intentional.
1925..	Pulampara	2	Ground ..	April	Not detected.

* Indicates not fire protected.

(*c*) *Animals.*—Elephants do a certain amount of damage by knocking down cairns, pulling up coupe stones, tearing up trees in the pole stage and stripping others of bark. On the whole, however, the damage is not great. All other animals have become regrettably scarce.

(*d*) *Wind.*—Though subject to strong winds these forests do not appear to suffer much from wind. Isolated trees, however, are sometimes blown down. Under "Simple Coppice" they should preserve their immunity.

(*e*) *Insects.*—A few teak defoliator caterpillars have been observed, but teak being grown in mixture with other species is unlikely to suffer to any extent from these pests.

(*f*) *Climbers.*—Spathalobus Roxburghii does some damage to individual trees, often teak, but can easily be dealt with.

Lantana has not yet become a tree climber in these forests but must be carefully watched.

CHAPTER III.

UTILIZATION OF THE PRODUCE.

Section 1.—Agricultural customs and wants of the Population.

39. The bulk of the neighbouring cultivation is dry, wet cultivation being very limited in extent.

40. Agriculture would appear to be in a very backward state judging from the meagre wants of the people.

41. The chief crops grown are sami, thina, horsegram and cotton, a little paddy, castor and a very little dhal.

42. The people use —

For ploughs.—Anogeissus latifolia, Acacia sundra, Chloroxylon swietenia and rosewood.

Yokes.—Chloroxylon swietenia and rosewood.

Mamooty handles.—Preferably Chloroxylon swietenia.

Fibres.—Coconut, Wallampiri and the bark of Grewia.

Levellers for wet cultivation.—Rosewood, Acacia ferruginea and Albizzia odoratissima.

Grass.—No grass is required now that the reserves have been thrown open to grazing.

Thatching.—Poor people use palmyra leaves and jungle grasses—Rich people, tiles.

Rafters—are usually made of bamboos—Richer ryots prefer small Grewia and teak.

Doorframes.—When used are of Pterocarpus Marsupium (Vengai) or Albizzia odoratissima. Rich people use teak and rosewood.

Fuel.—No special provisions for supplying the local people with fuel are necessary since they get what they want in the way of twigs when coupes are being felled, from private forests and from wood growing on or near their own lands.

Grazing.—The reserves have been thrown open to grazing in G.O. Mis. No. 1561, Development, dated 5th September 1924, and this is taken advantage of.

Manure leaves.—No demand.

Timber.—Such timber as the local people want they purchase easily from contractors at the railway station and also from private forests.

43. The principal minor produce from the Walayar forests are, excluding grass—

Papodal (Trichosanthes cucumerina).

Avaram bark (Cassia auriculata).

Potti (Clausena willdenovii).

Korai

Section 2.—Markets and Marketable Produce.

44. Coimbatore, fifteen miles distant, is the principal market and absorbs practically the whole fuel outturn of these forests both for the cotton mills and for domestic purposes.

45. Timber and bamboos, sold together with the fuel coupes, have hitherto generally been disposed of by the coupe contractors at the railway station to smaller merchants who come from such places as Tiruppur, Salem, Erode, Madura, Trichinopoly, etc.

46. Such timber as is not used locally or sold otherwise also goes to Coimbatore.

47. The Government saw-mill at Olavakkot is not concerned with the Walayar forests.

48. There is a match factory at Kanjikod, next station west of Walayar, but it only requires certain species which it is not profitable to exploit separately.

49. Since Messrs. Stanes' Mill at Coimbatore has introduced coal the demand for fuel in Coimbatore has fallen by about 13,000 tons annually.

50. The mills only accept, as fuel, billets down to three inches diameter and 2½ feet in length.

51. Contractors pay on an average Rs. 4 per ton for fuel standing.

52. Teak poles are always in demand.

53. Jungle wood poles except such as are used locally mostly go to Coimbatore.

54. Bamboos, other than those disposed of as above, find a ready market in Coimbatore and Palghat.

55. Grass, up till 1924, was sold in two blocks (Walayar and Sholakarai) annually on lease to contractors who sold it chiefly to the local people and to cartmen.

This demand has now ceased owing to the reserves being thrown open to grazing.

56. In 1924 and 1925 the right to cut grass in Sholakarai was sold direct to the Military at Wellington who only require the variety called 'Ooshi' (Andropogon contortus). This variety is ripe for cutting after December and the arrangement does not appear to conflict with the grazing.

57. *Other minor produce.*—The right to collect minor produce is sold annually by public auction.

Section 3.—Lines of Export.

58. The South Indian Railway and the Coimbatore-Palghat Road.

The big contractors use the railway and the smaller men the road.

Section 4.—Methods of Exploitation and their Cost.

59. Prior to 1908, all exploitation was by departmental agency; from that year onwards, the coupes have been sold standing to contractors annually by public auction held at Coimbatore.

60. Contractors make their own arrangements as regards felling and removal of the crop.

61. Under the 'Coppice with standard' system which was in force up till 1924, the standards to be retained were marked and recorded, prior to the sale, by the local staff. Thereafter the local staff was merely concerned with seeing that the rules of his lease agreement were adhered to by the contractor and with checking the produce removed at the railway station or by road —the contractor not being permitted to start felling till he had paid the lease amount in full.

62. After the felling, all standards marked for retention were checked with those left on the ground.

63. From 1924 onwards, the coupes have been clear-felled so that timber, fuel and bamboos were all sold together—it is calculated that the department by this method has been losing at least Rs. 50 per acre on the working since 1923 through not getting a fair revenue from the standards.

64. The District Forest Officer, however, is convinced that the system of selling coupes standing to contractors should continue in preference to departmental working. Certainly the offers bid for the 1926–27 coupes would appear to justify such a policy. If, however, in the future a fair price cannot be realized for timber and fuel sold together standing, it must be open to the District Forest Officer, with the approval of the Conservator, to resort to departmental exploitation of the timber crop.

65. It is difficult to arrive at the rates paid by contractors and this difficulty is increased by the uncertainty as to what constitutes a ton—a contractor's ton for buying being a different matter from that for selling.

66. The following may be taken as a guide for fuel only :—

Worked out per ton.

	Rs.	A.	P.
Felling and stacking, per stack of 68 cubic feet—1 ton	0	12	0
Carting to Walayar station (depends on the distance) average—say.	2	10	0
Loading at the station	0	6	0
Freight to Coimbatore	3	8	0
Unloading and stacking at Coimbatore	0	8	0
Cost of fuel standing	4	0	0
Incidental expenses—say	0	8	0
Total ...	12	4	0

This Rs. 12-4 per ton compares with Rs. 13-4 to Rs. 13-8 paid by the mills for fuel in Coimbatore.

N.B.—For converting cubic feet into tons—1 ton = 2,240 lb. = 68 cubic feet.

Locally in Coimbatore—1 ton = 2,000 lb.

This latter is the ton used by the contractors in selling.

Section 5.—Past and Present Prices.

67. The price paid by the mills at Coimbatore for fuel is at present Rs. 13-4 to Rs. 13-8 per ton.

For domestic fuel the current rate is approximately—

Billets, unsplit Rs. 15 per ton.

„ split „ 17-8 „

It is, however, likely that the price of domestic fuel in Coimbatore may drop owing to the mills using oil or coal instead of wood.

68. Recent prices for *domestic* fuel per ton have been as follows :—

	Rs.	A.	P.
1st January 1918	18	0	0
1st July 1919	16	0	0
1st January 1920	16	8	0
1st July 1920	16	8	0
1st January 1921	16	8	0
1st July 1921	16	8	0
1st January 1922	16	8	0
1st July 1922	16	8	0
1st January 1923	16	8	0
1st July 1923	16	8	0
1st January 1924	15	8	0
1st July 1924	17	8	0
1st January 1925	17	8	0
1st July 1925	17	8	0
1st January 1926	17	8	0

69. The following are approximate prices for timber and bamboos :—

	Rs.	A.	P.		Rs.	A.	P.	
Teak logs (in the round)	3	0	0	to	3	4	0	per cubic foot.
(sawn)	6	0	0	to	7	0	0	„
Teak poles	0	14	0	} each.				
	1	0	0					
	1	4	0					
Bambusa arundinacea (large)	25	0	0	per 100				
Do. (small)	10	0	0	„				
Dendrocalamus	15	0	0	„				

These last (Dendrocalamus) are not on the market at the time of writing. It is not possible to quote prices for junglewood species.

All the above prices are those obtaining in the Coimbatore markets.

CHAPTER IV.

STAFF AND LABOUR SUPPLY.

Section 1—Staff.

70. The staff engaged in looking after the Walayar forests is as follows :—(January 1926).

A. Permanent Staff.

Grade.	Number.	Pay per month.	Beat.
Forester	1	Rs. 45 *plus* fixed travelling allowance at Rs. 10 = Rs. 55.	.....
		Rs.	
Forest guard	1	21	Pulampara.
Do.	1	21	Moodamathi.
Do.	1	18	Walayar.
Do.	1	15	Varalapadi.
Do.	1	15	Attikandi.
Do.	1	15	Sholakarai.
Total	1 Forester. 6 Forest guards.	160	

B. Temporary Staff.

Grade.	Number.	Pay per month.	Beat.
		Rs.	
Forest guard	1	15	Varalapadi.
Do.	1	15	Tenkaradu.
Reserve watchers	2 at Rs. 12 ...	24	Walayar.
Do.	1	12	Sholakarai.
Do.	1	12	Moodamathi.
Bungalow watcher * ...	1	1	Walayar bungalow.
Tannadar	1	12	Navakarai.
Total ...	2 Forest guards	30	
	4 Watchers ...	49	
	1 Tannadar ...	12	
		91	

* Holds this charge in addition to his other duties.

Section 2—Labour Supply.

71. Labour is obtainable as follows :—

From Kolipara, three miles from Walayar rest-house, 30 coolies.
„ Neelipara three miles from do. 20 „
„ Pulampara 2½ miles from do. 5 „
„ Konampara 4 miles from do. 10 „
„ Konampara neighbourhood do. 4 „
„ Pichanur 3 miles from do. 15 „
„ Moodamathi 4 miles from do. 8 to 10 „
and a few other places.

72. Labour is thus scarce and this scarcity is most felt in August and September and from 15th May to 15th June, the harvesting and ground-nut seasons.

73. In view of the cultural operations to be carried out under this Plan, it is most desirable that a permanent labour force be established.

74. The rates in force are—

Men	8–12 annas per day	according to the work and distance.
Women	6 „	(chiefly employed for cutting grass on fire lines).
Children	6–7 „	do. do.

CHAPTER V.

PAST SYSTEM OF MANAGEMENT.

Section 1.—General History of the Forest.

75. When it was found that the Madras Railway experienced increasing difficulty in procuring fuel, Government proceeded to acquire certain lands in Malabar and Coimbatore districts with a view to insuring a sustained and permanent supply.

76. After much negotiation, in 1873 the inam right over Pulampara was purchased for Rs. 24,426-4-0 and in July 1874 the inam right over Varalapadi was acquired for Rs. 21,310 (Vide Government of India Order, No. 3229, dated 4th October 1872, and G.O. No. 1445, dated 18th October 1872; also G.Os Nos. 578 and 637, dated 6th and 20th June 1873, and G.Os. Nos. 873 and 891, dated 13th and 17th July 1874, and connected papers). These two lands, separated only by a small stream, were formed into one reserve called the Walayar fuel reserve and placed under the Tahsildar of Palghat to manage. He was given a ranger, a clerk and five guards to help him, all under the general control of the Head Assistant Collector, Palghat. In 1876 the Tahsildar was relieved of his share of the work and the reserve was placed under the immediate management of the Head Assistant Collector. In April (or March) 1883 the control was transferred to the District Forest Officer, Malabar district. In 1885 the reserve was put under the prescriptions of a working plan which was formally sanctioned in 1891. This plan expired in 1894 and, as the rotation prescribed was found by experience to be too short, the reserve was rested up to 1902, so far as the fuel was concerned, but bamboo fellings were continued on the lines laid down in the plan.

77. In 1880 the Vadaseru Mainadiyar, on the occasion of the survey and demarcation of Walayar, laid claim to portions of the northern and western limits of the tract. This claim was settled in favour of Government in the Head Assistant Collector's (Palghat), No. 223, dated 14th September 1882.

78. Several surveys appear to have been made from time to time, the present working being based on the survey of 1890, with certain modifications based on recent coupe surveys. The area was notified under section 25 of the Forest Act in 1883. Pulampara was demarcated at the time of purchase (1872–73) and again in 1883. Varalapadi was demarcated in 1879–80.

79. The coupe lines appear to have been cut during the three years between 1885 and 1888.

80. To sum up, Walayar reserve has been under systematic management since 1876.

81. In compartment 5, a few clumps of bamboos (Bambusa arundinacea) seeded in March and April 1883 and in compartments 12 and 13 the bamboos (Dendrocalamus strictus) seeded in 1894–95 in the months of March and April as reported by local establishments.

82. Formerly the lands east of Walayar river, south of Sholakarai malai and west of Chinnayagoundapattur, were enjoyed by the Perur devasthanam. In 1847, however, for some reason, Government resumed much of this land and leased it on patta to such ryots as required land. In 1868, 100 vallams or 380 acres of these patta lands were acquired by the jungle conservancy for Rs. 2,000 and, with some adjoining Government lands, were formed into the Sholakarai fuel reserve for supply of railway fuel. The first fire traces were cut in 1870, and in 1878 the four inspection lines were laid out and also used as fire traces.

83. In 1884 the coupe lines were cut and the working plan drawn up and by 1892 the placing of demarcation stones was completed.

84. Sholakarai was settled in 1884, reserved under section 16 from 1st January 1885 and demarcated in 1890 (vide G.O. No. 1280, Revenue (Forest) No. 169, dated 19th November 1884).

85. The so-called 81-acre piece, although Government waste, was encroached on and treated by one Saiyid Sahib as part of the land held by him on a patta for 40 vallams until 1868, when the then Tahsildar surveyed out the 40 vallams and the 81 acre piece was included with Sholakarai as a fuel reserve, but it was not included in the Sholakarai Working Plan.

86. This 'small Sholakarai or 81-acre piece' was settled in 1888, reserved under section 16 from 1st July 1889 and demarcated in 1892 (vide G.O. No. 507 (64), Revenue, dated 17th June 1889).

87. Tenkaradu Block was also taken up by the jungle conservancy in 1868 and is a continuation, to the north, of Sholakarai reserve. It was settled in 1884, notified at pages 780 and 781 of the *Fort St. George Gazette*, dated 2nd December 1884, and demarcated in 1890. The Perur devastanam managers claimed the land at settlement, but the claim was disallowed. The reserve was fire-traced in 1872 or 1873.

N.B.—The Tenkaradu Block here referred to is only a small portion (395 acres) of the Block referred to in the prescriptions of this plan.

88. In their Proceedings, Forest No. 21, dated 14th January 1902, the Board of Revenue sanctioned the Walayar Revised Working Plan prepared by the Special Working Plans Officer, Southern Circle—Mr. Foulkes.

89. The most important administrative feature of this Working Plan was the amalgamation of the Walayar reserve in Malabar district with those portions of the Walayar forests lying in Coimbatore district. The forest situated on the Bolampatti hill slopes, however, was not included in the Plan prepared by Mr. Foulkes, though it appears that at the time of the construction of the South Indian Railway some large timber, presumably for sleepers, was extracted from the hill slopes.

90. Mr. Foulkes' Plan laid down prescriptions for a period of twenty years which came to an end in 1921.

91. During this period the forests were worked under the 'Coppice with standards' system in continuation of the former plan, but two of his main prescriptions had lapsed—

(1) The prescriptions regarding teak (Mr. Foulkes' Plan, page 22, section B) were found to be impracticable.

(2) The prescriptions laid down for a bamboo working circle were abolished in B.P. Forests Mis. No. 123, dated 15th February 1919.

92. From 1st July 1918 a portion of the Walayar forests at the eastern end of the Bolampatti hill range was handed over to panchayat management for a period of three years.

93. Two panchayats were formed, called respectively the Madakkurai (1,126·60 acres) and Ettimadai (639 acres) panchayats. These agreements expired in 1921 but were renewed annually since.

94. In September 1925, however, owing to their bad management, the Collector passed orders suspending the panchayats and placing them under the control of the Revenue Department (Collector's Proceedings D. Dis. No. 953/25-B-1, dated 3rd September 1925).

95. This order is in force at the time of writing.

96. With effect from 1st April 1918 the southern slopes of the Bolampatti hills, up till then forming part of Block I, Bolampatti Range, were transferred to Palghat Range and are now included in the areas under this plan.

97. In 1922 the Walayar forests entered on their third rotation of working.

98. In 1923-24 and in anticipation of the present Plan the standards remaining on the previous year's coupe were removed and clear-felling for the future was ordered by the Chief Conservator.

99. Lastly, in 1924-25, the Walayar forests, with the exception of coupes worked during the last five years, were thrown open to grazing, on a basis of 5 acres per cow unit at Re. 1 per cow—G.O. Mis. No. 1561, Development, dated 5th September 1924.

Section 2.—Past Systems of Management and their results.

100. In 1901 Mr. Foulkes, Special Working Plans Officer, Southern Circle, prepared a Revised Working Plan for the Walayar forests to cover:

(*a*) The Walayar reserve (Pulampara and Varalapadi Blocks).

(*b*) Tenkaradu Block (referred to in his plan as Sholakarai extension) being only 395 acres of the present block of that name, and, in addition, 188 acres north of Tenkaradu Block on the slopes of the Bolampatti hills.

(*c*) Sholakarai Block.

(*d*) The so-called 81-acre piece (now compartment No. 18).

(*e*) Sankarayapuram reserve. Since disafforested (vide Chapter I, section 8).

With the exception of 188 acres lying on the slopes north of Tenkaradu hill Mr. Foulkes' Plan did not include any of the forest on the southern slopes of the Bolampatti hills now included in Palghat Range.

101. Under Mr. Foulkes' Plan the system of 'Coppice with standards' which had been in force prior to 1902 was continued.

102. As a portion of the Walayar forests are now in their third (coppice) rotation it is possible to form some estimate of the effect of this system in working.

103. All systems of working must be judged by the criterion of the 'normal' forest and the Walayar forests fail lamentably in this respect.

104. Roughly three sets of conditions exist:

(1) A virtual high forest—this is generally the case in the better areas—and little or no coppice.

(2) More or less pure coppice with perhaps only half a dozen standards to the acre or less—this is the case in many of the poorest areas, especially in Sholakarai Block.

(3) A reasonable ratio between coppice and standards—this is the exception and only occurs over very limited areas.

A fourth set of conditions prevail on the upper hill slopes at the north-west end of Varalapadi Block.

Here it looks as though the upper slopes had never been worked and a very open high forest, generally mixed with large bamboo clumps, is found.

105 Since, after two rotations of working, it is the exception to find anything approaching normal 'Coppice with standards', this system must be written down as a failure at Walayar. There may have been some justification for its introduction in the better areas west of the Walayar river where timber species are found, but why it was introduced into the much poorer type of forest found in Sholakarai and Tenkaradu is a mystery. There are, bar a few teak, no timber species and 'Coppice with standards' is not a method most suited for producing the largest quantity of fuel.

196. The 'Coppice with standards' system is one of the most difficult of all methods to work successfully and requires very intensive management, not justified in a forest managed primarily for fuel.

107. Difficult as the system is with one or two species (light demanding and shade bearing) it becomes an impossibility in the case of a promiscuous mixture of species such as are found at Walayar. One noticeable result of this has been that fast growing and easily reproduced species have got in when the coppice has been felled and have filled up the blanks between standards, thus both suppressing the coppice and actually turning the forest into a greater or less degree of high forest.

108. Another more serious result is seen where, on areas where only a few standards are found, presumably because there were none to reserve, bamboo, lantana, etc getting a firmer hold each time the coppice has been cut, are gradually getting possession of the ground, to the exclusion of the coppice—this is a feature of the poorer areas.

109. Apart altogether from a wrong sylvicultural system, the gravest charge against the management of the Walayar forests in the past is that nothing has been done to help them. Except for a few experiments and some expensive clearing of lantana, etc until the last few years or so not an anna had been spent on any cultural operations whatever and nature is taking her revenge. There is no doubt that the Walayar forests are deteriorating under a system of management which allows an area to be worked over and regenerated as best it may, and which, moreover, protects it from the fire that would weaken the ranker and inferior species of growth that fill the blanks and increase the vitality of the superior species like teak. For there can be no doubt that the teak existed before the introduction of fire protection

110. Recently, steps have been taken in the right direction. A nursery was formed in 1919–20 at a cost of Rs. 181 and in June 1925 a few teak stumplings were put out by the subordinates. Unfortunately this operation was not performed properly and the result is largely a failure.

111. Some teak transplants, wrongly put in in September 1925 instead of at the beginning of the monsoon, have been a total failure.

112. Since 1924-25 clear-felling has been adopted.

Section 3.—Special Works of Improvement undertaken.

113. The only special works of improvement undertaken since 1902 have been, apart from fire protection,—

			Rs.
1909–10	...	Eradication of lantana and prickly-pear ...	135 (over $8\frac{3}{4}$ acres).
1914–15	...	Do. do. ...	20 (over 17 acres).
1915–16	...	Eradication of lantana and prickly-pear, Tenkaradu.	167
1916–17	...	Eradication of lantana and prickly-pear ...	7
1917–18	...	Do. do. ...	546
1918–19	...	Eradication of lantana and prickly-pear, Varalapadi and Sholakarai.	649
1919–20	...	Eradication of lantana and prickly-pear, Tenkaradu and Sholakarai.	762
1919–20	...	Formation of a nursery in Pulampara Block.	181
1920–21	...	Climber cutting over 30 acres and in coupe of that year.	30
1925	...	Construction of an inspection shed in Waterfall Block.	175 (about).
		Total ...	2,672

114. The following tables show the existing roads, buildings, etc :—

A.—Roads.

Name.	Length.	Year of construction.	Cost.
			RS.
1. Nadupathi road	1 mile 4 furlongs.	1893-94	949
2. Singalpallam road—runs from near Walayar bridge under a railway bridge to forest guard's quarters at the south-west corner of Sholakarai Block and actually continues for some distance along the western boundary of Sholakarai.	1 mile	Not known ...	Not known.
3. Walayar bungalow road (unmetalled).	6 furlongs ...	1883	Not known.

All these roads have been maintained at a yearly cost shown below : (vide Chapter V, section 5—Past Revenue and Expenditure).

B.—Buildings.

Name.	Year of construction.	Cost.		
		RS.	A.	P.
1. Walayar rest-house—three rooms, three bath rooms and store room, out-houses consisting of kitchen, servants' quarters and accommodation for three horses.	1890-91	2,710	0	0
2. Foresters' quarters, situated in rest-house compound, consisting of two rooms with a kitchen at back and a narrow verandah in front.	1890-91	655	0	0
3. Forest guards' shed, also in rest-house compound—two rooms and verandah.	1893-94	225	0	0
4. Temporary subordinates' quarters also situated in rest-house compound (six rooms—12′ × 11·7′ with kitchen at back of each) made of bamboo tattis and roofed with palmyra.	1920	379	13	0
5. Forest guards' shed (permanent) at Singalpallam	1893-94	219	0	0
6. Permanent foresters' quarters at Navakkarai	1901-02	707	0	0
7. Permanent quarters at Navakkarai for two guards	1901-02	389	0	0

The amount spent annually on buildings since 1901 is shown in Chapter V, Section 5.

Section 4.—Past yield from 1902-03 to 1924-25.

Year of working.	Block of forest	Nature of felling made.	Area.	Outturn.			Price per acre.	Total price obtained.	Remarks.
				Timber.	Fuel.	Bamboos.			
			Acs.	C.ft.	C.ft.		Rs. A. P.	Rs. A. P.	
1902-1903	Pulampara	Coppice with standards	247	..	122,180	..	..	..	Timber yields not available. Departmental working.
1903-1904	Do.	Do.	247	361	182,639	..	..	..	From 1902 till 1908 under departmental working. Accurate figures for the prices obtained are not available.
1904-1905	Do.	Do.	182	6,953	149,761	..	..	..	Do.
1905-1906	Do	Do.	185	2,063	119,441	..	..	..	Do.
1906-1907	Varalapadi	Do.	183	1,256	207,680	..	..	..	Do.
1907-1908	Do.	Do.	163	1,581	157,120	..	..	..	Do.
1908-1909	Do.	Do.	175	1,584	240,990	..	55 0 0	9,625 0 0	The coupe was sold standing.
1909-1910	Pulampara	Do.	183	326	180,700	344,302	60 10 8	11,102 0 0	Do.
1910-1911	Do.	Do.	176	320	39,150	Big 8,800 Small 300 Split 4,100 Veder 1,280 Thorns 145 cart loads. Dead 2,908	..	15,483 0 0	74·3 acres at Rs. 105 per acre. 101·7 acres at Rs. 75-8-0 per acre. The coupe was sold standing.
1911-1912	Varalapadi	Do.	129	24,134	90,058	10,012		11,925 0 0	Do.
1912-1913	Do.	Do.	30	4,274	29,880	71,938		1,000 0 0	Do.
1912-1913	Palampara	Do.	168	10,264	134,310	Big 30,400 Small 4,700	80 0 0	13,440 0 0	Do.
1913-1914	Varalapadi	Do.	178	14,998	297,170	..	60 0 0	10,680 0 0	Do
1914-1915	Do.	Do.	159	2,496	166,040	..	40 0 0	5,560 0 0	Do.
1915-1916	Do.	Do.	50	1,918	269,720	..	40 0 0	2,034 12 0	Do.
	Do.	Do.	170	948	214,251	..	50 0 0	8,483 8 0	Do.
	Do.	Do.	..	425	53,200	..	..	..	The 170 acres of this coupe was felled in 1915-16 and 1916-17. The area felled in each year is not available.
1916-1917	Pulampara	Not known.	Not known.	(a) 2,190	..	..	..	1,754 2 5	
					(a) 8,050	..	..	474 11 0	The coupe was sold standing.
						(a) 780	..	..	
	Varalapadi	Coppice with standards	(b) 51	19	15,600	..	25 0 0	1,647 0 0	The coupe was sold standing.
	Tenkaradu	Do.	(c) 87	..	30,840	Dead 652	17 0 0	(c) 1,479 0 0	Do.
	Pulampara	....	..	160	(a) 1,440	..	..	..	
	Varalapadi	Coppice with standards	(b) 15	..	91,000	1,900	..	..	The coupe was sold standing.
	Tenkaradu	Do.	(c) ..	160	4,458	30	..	(c) ..	Do.
1917-1918	Do.	Do.	145	4,261	144,360	Dead 191 cart loads.	70 0 0	10,150 0 0	Do.
	Do.	....	16½	3,940	27,600	..	15 0 0	247 0 0	Fire line.
	Sholakarai	Coppice with standards	55	1,857	47,480	..	75 8 0	(d) 12,684 0 0	The coupe was sold standing.
	Do.	Do.	96	624	67,040	..	82 0 0	(e) 15,744 0 0	These prices are for the whole coupes.
1918-1919	Do	Do.	102	401	112,560	..	30 0 0	3,060 0 0	The coupe was sold standing.
	Tenkaradu	Do.	126	20,349	222,583	48	70 0 0	8,820 0 0	Do.

(a) Departmental working (b) The price is for the whole 60 acres felled in 1916-18. (c) The price is for the whole 87 acres felled in 1916-17 and 1917-18.
(d) The whole coupe of 169 acres was felled in 1918-19 and 1919-20. (e) The whole coupe of 192 acres was felled in 1918-19 and 1919-20.

Year of working.	Block of Forest.	Nature of felling made.	Area.	Outturn.			Price per acre.	Total price obtained.	Remarks.
				Timber.	Fuel.	Bamboos.			
			ACS.	C. FT.	C. FT.		RS. A. P.	RS. A. P.	
1919-20	Sholakarai	Coppice with standards	114	391	46,700	..	..	(*d*)	The coupe was sold standing.
	Do.	Do.	96	1,605	95,100	..	..	(*e*)	Do.
	Do.	Do.	201	1,469	201,367	..	80 0 0	(*f*) 36,360 0 0	Do.
	Do.	Do.	257	2,693	173,940	..	..	..	Do.
	Tenkaradu	Do.	48	700	31,240	..	11 0 0	528 0 0	Do.
1920-21	Sholakarai	Do.	254	5,800	335,520	..	..	.. (*f*)	
	Do.	Do.	105	783	133,400	Cart-loads 12	67 8 0	7,057 2 0	The coupe was sold standing
	Do.	Do.	101	910	96,320	..	70 0 0	7,060 14 3	Do.
	Do.	Do.	153	1,689	162,760	..	69 10 6	10,536 0 0	Do.
	Do.	Do.	82	402	94,880	Cart-loads 5	40 0 0	3,290 0 0	Do
	Tenkaradu	Do.	28	700	31,240	..	11 0 0	308 0 0	Do.
	Pulampara	Do	169	3,613 16,840	19,335 331,456	..	..	..	Departmental felling.
	Do.	..	502	..	..	200	80 0 0	13,476 12 10	
1921-22						2,079 Cart-loads 6,329 Head-loads.	11 0 0	4,425 1 0	The coupe was sold standing.
	Varalapadi	..	309	..	..	..	..	..	
						Thorns 723	120 0 0	141 0 0	Number of bamboos sold not available.
1922-23	Pulampara	Coppice with standards	86	8,244	159,445	Head loads 7,833	..	10,344 0 0	The coupe was sold standing.
	Do.	Do.	83	3,600	147,400	Head-loads 6,212 Thorns 1,176	125 0 0	591 14 6	Do.
1923-24	Pulampara	Do.	81	2,682	98,560	..	137 0 0	10,412 8 0	Departmental felling.
	Do.	Do.	68	1,014 2,860	6,897 99,350	370	137 0 0	11,077 13 0 10 2 0 9,244 12 2	Do Coupe sold standing.
	Do.	Do.	25	1,160	32,000	217	150 0 0	3,751 8 0	Do.
1924-25	Pulampara	Cutting and removal of standards left on area.	174	9,273	96,544	..	..	12,580 0 0	The coupe was sold standing.
	Do.	Clear-felling	53	3,460	98,200	Cart-loads 110 Head-loads 44	124 0 0	6,603 0 0	Do.
	Do.	Do.	50	9,530	63,000	1,628	131 0 0	6,484 8 0	Do.
	Do.	Do.	52	5,038	79,800	100	150 0 0	7,762 8 0	Do.

(*f*) The whole coupe of 455 acres was felled in 1919-20 and 1920-21. The price is for the whole coupe.

Section 5.—Past revenue and expenditure from 1901–02 to 1925–26.

SECTION 5.—Past revenue and

	Gross revenue.					Past			
	Revenue derived by the sale of fuel coupes.	Revenue derived by departmental extraction.	Revenue derived from all other sources.	Total.	Remarks.	Cutting coupe lines.	Roads.	Buildings.	Other works.
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
2 ..					No record of Revenue realised from 1902 to 1908.	..	147 14 8	43 13 0	..
3 ..						199 13 0	150 0 0	144 5 9	73 0 0
4 ..						..	150 0 0	149 8 9	..
5 ..			No record.			..	71 15 0	148 3 0	..
6 ..						49 0 0	543 7 1	22 0 0	17 0 0
7 ..						49 0 0	200 0 0	..	267 0 0
8 ..						..	300 0 0	104 8 0	7 0 0
9 ..	9,645 14 5	..	36 3 0	9,682 1 5	..	52 0 0	540 0 0	..	..
0 ..	11,102 0 0	4 0 0	3,605 8 0	14 711 8 0	..	20 12 0	286 0 0	69 4 11	..
1 ..	15,483 0 0	2 12 0	1,133 8 1	16,619 4 1	..	..	..	16 0 0	..
2 ..	11,925 0 0	46 8 0	2,167 10 0	14,139 2 0	..	..	338 8 0	920 14 1	..
3 ..	14,440 0 0	..	2,900 0 0	17,340 0 0	..	..	580 0 0	445 0 0	7 8 0
4 ..	10,680 0 0	1,551 3 0	1,878 5 0	14,109 8 0	..	..	419 15 10	158 9 0	..
5 ..	7,594 12 1	8 0 0	811 6 2	8,414 2 3	..	..	186 4 2	67 3 2	..
6 ..	10,518 4 0	..	6 4 6	10,524 8 6	..	.	5 0 0	23 0 0	39 0 0
7 ..	3,126 0 0	2,228 13 5	0 2 0	5,354 15 5	..	133 0 0	479 0 0	7 0 0	164 0 0
8 ..	10,397 8 0	141 6 8	342 4 0	10,881 2 8	..	63 0 0	157 0 0	234 0 0	124 0 0
9 ..	40,308 0 0	135 4 8	379 12 0	40,823 0 8	..	10 0 0	..	880 0 0	35 0 0
0 ..	36,888 0 0	1 4 0	349 10 0	37,238 14 0	..	207 0 0	162 0 0	..	8 0 0
1 ..	28,252 0 0	2,734 8 0	1,646 13 0	32,633 5 0	..	..	405 0 0	379 13 0	115 7 6
2 ..	13,476 12 10	7,863 7 1	8,879 10 1	30,219 14 0	..	39 12 0	583 4 0	327 10 6	543 9 0
3 ..	20,756 8 0	1,787 10 6	1,838 2 0	24,382 4 6	..	37 11 0	56 14 0	259 2 6	26 8 0
4 ..	24,074 1 3	1,395 14 9	746 0 0	26,216 0 0	..	28 6 0	45 0 0	165 2 6	7 12 0
5 ..	33,230 0 0	36 0 0	1,432 0 0	34,698 0 0	..	32 0 0	15 0 0	233 12 9	..
6 ..	27,210 12 0	324 6 8	1,737 5 0	29,272 7 8	..	81 11 0	84 10 0	116 8 0	282 14 0
..	3,29,108 8 7	18,261 2 9	29,890 6 10	3,77,260 2 2	..	1,003 1 0	5,906 12 9	4,915 6 11	1,717 10 6

* Figures taken include only nine months from July 1919 to March

.. Signifies no revenue

expenditure from 1901-02 to 1925-26.

expenditure.

Departmental extraction. (11)	Demarcation. (12)	Cultural operations. (13)	Fire protection. (14)	Watcher's pay. (15)	Establishment pay. (16)	Total. (17)	Remarks. (18)	Profit or (19)
RS A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.		RS.
..	..	..	..			..		
..	..	..	..			..		
..	..	..	..			..		
..	..	..	..			..		
..	47 0 0	..	..		No record.			
208 0 0	12 0 0	..	452 0 0					
5,174 14 3	..	..	470 0 0			..		
296 12 8	89 14 0	..	462 0 0			..		
..	25 4 0	135 0 0	..			..		
..	..	..	1,174 0 0			..		
..	..	..	..	286 0 0	528 0 0	2,073 6 1		+ 12,06
611 8 0	..	..	367 4 0	356 0 0	545 13 9	2,913 1 9		+ 14,42
..	..	..	371 0 0	345 13 11	578 5 7	1,873 12 4		+ 10,35
..	..	20 0 0	347 14 0	474 8 2	528 4 4	1,624 1 10	Establishment pay from 1911-12 to	+ 6,79
..	45 0 0	167 0 0	360 0 0	523 5 3	583 15 6	1,746 4 9		+ 8,77
280 5 6	..	7 0 0	430 0 0	493 11 9	587 8 0	2,581 9 3	1920-21 does not include proportion	+ 2,77
35 0 0	24 0 0	546 0 0	412 6 4	489 13 6	629 11 0	2,714 14 10		+ 8,16
..	30 0 0	649 0 0	597 0 0	510 13 9	697 4 1	3,439 1 10	of District Forest	+ 37,38
..	..	943 0 0	638 0 0	416 14 10	* 659 1 1	..	Officer's and Ranger's pay.	Figures compl
1,161 0 4	..	..	755 7 0	581 3 8	1,200 0 0	4,597 15 6		+ 28,03
1,795 1 11	49 0 0	..	680 13 0		† 1,912 5 1	5,931 7 6	†Pay of Range Officer and District Forest Officer not included.	+ 24,28
159 8 0	50 7 0	..	514 13 6	Watcher's pay included with establishment pay.	‡ 3,242 7 0	4,347 7 0		+ 20,05
240 1 6	28 6 0	..	536 10 0		‡‡ 2,765 10 0	3,817 0 0	‡Including proportion	+ 22,35
95 0 0	32 0 0	27 14 6 (nursery.)	316 10 0		‡‡‡ 4,690 8 0	5,442 13 3	of District Forest Officer's and	+ 29,25
233 14 0	..	..	322 0 0		‡ 5,400 0 0	6,521 9 0	Ranger's pay.	+ 22,78
10,291 2 2	432 15 0	2,494 14 6	9,207 13 10	..	..	..	....	...

1920 as official year was changed from April to March (Incomplete).

or expenditure.

CHAPTER VI.

STATISTICS OF GROWTH AND YIELD.

117. Some statistics are available regarding the growth of certain timber species but they are not reproduced here because they are of doubtful value, owing to the trees in question not having received any tending in youth and on account of the abnormal conditions under which the crop has been raised.

Moreover the present idea is to grow coppice and not high forest.

118. A few figures regarding the growth of coppice are appended, though they are also of doubtful value as far as pure coppice is concerned since the coppice from which these figures were obtained were all grown under standards.

119. *Coppicing capacity of important species.*

Species	Height.	Girth.	Average number of shoots per stump.
	FT.	IN.	
Two years old coppice—Pulampara block.			
Teak	$10\frac{1}{2}$	5	9
Grewia	10	5	6
Terminalia paniculata	$8\frac{1}{2}$	$4\frac{3}{4}$	6
Rosewood	8	$3\frac{1}{2}$	3
Venteak	$8\frac{3}{4}$	$4\frac{1}{4}$	4
Vengai	8	$4\frac{3}{4}$	6
Three years old coppice—Sholakarai block.			
Teak	12	$4\frac{3}{4}$	7
Rosewood	$8\frac{1}{2}$	3	2
Adina cordifolia	15	$6\frac{3}{4}$	8
Acacia sundra	10	6	6
Sixteen years old coppice—Varalapadi block.			
Teak	25	18	11
Grewia	19	15	7
Rosewood	14	13	7
Vengai	14	15	4

CHAPTER VII.

ESTIMATE OF CAPITAL VALUE OF THE FOREST.

120. No data are available for estimating the capital value of the forest. Capitalization of the annual net revenue would give an entirely erroneous figure owing to the recent change of silvicultural system.

PART II.

Future Management discussed and prescribed.

CHAPTER I.

BASIS OF PROPOSALS.

Section 1.—General Objects of Management.

121. The main object of management is commercial; the supply of the Coimbatore market with fuel of not less than 3" diameter. At the same time and in view of the possible supply of electrical power to the Coimbatore Mills in the future, the chances of only domestic fuel being required—a negligible quantity compared with the present demand—have to be allowed for.

122. In the event of such a serious reduction in the demand for fuel the question of working the Walayar forests for timber will arise and to meet this possibility it has been decided to convert the entire accessible portion of the forest to the system of "Simple Coppice."

123. The advantage of working the forest under the 'Coppice system' will be that, in the event of the fuel demand ceasing, the way will be paved for its conversion into "High Forest", or, if the hydro-electrical scheme falls through, the forests will still be in a position to supply large quantities of fuel.

124. Silviculturally, the methods of treatment will differ in the two main Working Circles (for details see below). It may be remarked, however, that while, in the Pole Working Circle, every attempt will be made, by means of clear-felling and artificial regeneration, to establish a normal degree of stocking, in the Fuel Working Circle no artificial regeneration will be attempted, the reason being that owing to the poverty of the soil, especially on the hill areas of this Working Circle, such attempts would be excessively expensive.

125. Moreover, as far as the plains portion of the Fuel Working Circle is concerned, there is little doubt that this area would pay better under cultivation—the soil being largely black cotton—and that, in the event of the fuel being no longer in demand from Walayar, this area would be disafforested, since it is not suitable for the production of the better timber species.

126. The position in the proposed Pole Working Circle is different. There, a series of even aged pole crops grown from coppice and assisted by artificial filling up of blanks by teak or other species is contemplated.

127 As far as possible teak, whether grown from coppice or raised artificially in the blanks between the coppice after clear-felling, will be grown on a short rotation with the object of producing well grown and marketable poles for which there is always a demand—Pollachi dealing principally in large sized timber.

128. Such of the other species as will not be saleable as poles will be disposed of as fuel.

The present Plan is therefore in the nature of a compromise and, as such, a certain latitude must be allowed for experiment.

129. *Regulation of water-supply.*— Two or three streams having their sources on the Bolampatti hill slopes are of importance to the cultivation in the plains.

130. On no account must any felling be done within two chains of a perennial source of water.

Section 2.—Methods of Treatment.

131. The treatment in the Pole Working Circle will be coppice felling and natural reproduction from coppice shoots, assisted by artificial filling up of blanks with teak where possible.

132. In the Fuel Working Circle no artificial regeneration will be attempted.

Section 3.—Working Circles, their area and distribution: Reasons for their constitution.

133. There will be the following Working Circles:—

Name of Working Circle.	How distributed.	Area. ACRES.
1. Pole Working Circle ...	Pulampara (excluding 281 acres in the Closed Working Circle), Varalapadi and Waterfall Blocks.	3,210
2. Fuel Working Circle ...	Sholakarai and Tenkaradu Blocks	2,547
3. Bamboo Working Circle—		
No. 1 Felling Series ...	Pulampara, Varalapadi and Waterfall Blocks ...	3,210
No. 2 Felling Series ...	Sholakarai and Tenkaradu Blocks	2,547
4. The Closed Working Circle.	281 acres of Pulampara Block and about 3,600 acres on the slopes of the Bolampatti hills.	3,881 (about)
5. Grazing Working Circle ...	The whole Working Plan area.	
6. Minor Produce Working Circle.	The whole Working Plan area.	

134. The Pole Working Circle will be concerned with raising

(1) a crop of teak poles either from coppice or by artificial means.

(2) marketable poles of other timber species, either from coppice, or, in cases where the soil is not suited to teak, by artificial means.

(3) Poles other than under (1) and (2) of 3 inches diameter and over and suitable for firewood.

135 The Fuel Working Circle, as its name denotes, will be concerned solely with the production of fuel of 3 inches in diameter and over.

136. The remainder of the forest will be put into the Closed Working Circle, an area of roughly 3,881 acres, owing to its inaccessibility and extreme poorness of growth.

Section 4.—Period of Working Plan.

137. Owing to the great uncertainty as to the future of the forest, this Working Plan will only lay down prescriptions definitely for a period of ten years, or one-third of the regeneration period of the whole of the *Pole and Fuel Working Circles*.

138. This Plan will therefore come up for revision in the year 1935. By that time it should be definitely known whether fuel or timber is to be the main consideration and the Working Plan must be revised accordingly in that year.

CHAPTER II.

WORKING PLAN FOR THE POLE WORKING CIRCLE.

Section 1.—General Constitution of the Circle and character of the Vegetation.

139. The Working Circle comprises the three Blocks—Pulampara (except for 281 acres included in the Closed Working Circle as there is no tree growth to speak of), Varalapadi and Waterfall—a total area of 3,210 acres.

140. Waterfall Block is situated on the slopes of the Bolampatti hills east of the Walayar river, while Pulampara and Varalapadi Blocks are on the plains and west of the Walayar river.

141. The best growth is found in the level portions of Varalapadi Block where there is a fair amount of teak, and the wood has the appearance of high forest—both stocking and growth vary a great deal.

142. The growth on the hilly portions of Varalapadi Block varies from a crop of mature trees containing a fair percentage of Xylia but of very open stocking, to a very poor and stunted growth, either with or without teak, on the less fertile slopes. Some large sized Bombax are to be found on the upper slopes. The upper slopes of this hilly portion bear a crop of mature Bambusa clumps.

143. Bamboo, chiefly Bambusa arundinacea, occurs in patches throughout the rest of Varalapadi Block.

Pulampara Block is similar in character to Varalapadi but poorer in quality, the soil being drier and containing more disintegrated gneiss—teak are neither so numerous nor so well grown but patches of Pterocarpus Marsupium (Vengai) occur, notably in compartments 5 and 6. Most of them are however very mis-shapen. Bambusa arundinacea occurs throughout.

144. The vegetation in Waterfall Block varies considerably. The low foot-hills, especially on their southern slopes, are very rocky and the soil is unfertile.

145. The depression behind these outer foot-hills, however, has a deep well-drained soil and here the growth, though rather open, is of good quality.

146. The forest on about 30 acres adjoining the Walayar river was damaged by a severe fire in 1924.

147. Teak occurs throughout Waterfall Block in some quantity but is generally badly grown and possibly unsound.

148. Illicit fellings have been extensive in the past and elephants do some damage.

149. Bamboo, except for clumps of Bambusa along the Walayar river, only occurs in small patches.

150. The quality of growth and, to some extent, the stocking deteriorates on the main slope on proceeding eastwards, till, on approaching the Kuthadi Malai valley, considerable patches of lantana and some bamboo are encountered The soil similarly begins to approach in quality that found east of the Kuthadi Malai valley.

151. It may be mentioned that in 1876 Mr. H. T. Knox, I.C.S., put out a few Vengai seedlings in Compartment 6, Pulampara Block. They show good height growth but are unfortunately very much branched (for detailed Description of compartments vide Appendix II).

Section 2.—Blocks and Compartments.

152. Pulampara Block contains compartments Nos. 1 to 7.

Varalapadi Block contains compartments Nos. 8 to 13.

Waterfall Block is not divided into compartments, as it is unlikely to be worked before 1941.

All compartment lines are permanently demarcated on the ground.

Section 3.—Analysis and Valuation of the Crop.

153. This is not possible as future fellings will include standards as well as coppice.

Section 4.—Method of Treatment.

154. The object of management is the conversion of the present 'Coppice with Standards' crop to a series of even aged pole crops largely composed of teak, which will result in—

(*a*) the production of marketable poles both of teak and other timber species;

(*b*) coppice firewood of not less than 3 inches diameter.

Section 5.—Choice of Species.

155. After felling, the existing species will be allowed to reproduce themselves from coppice and wherever the ground is suited for it teak, probably in the form of stumps, unless experiments prove seed or transplants to be better, will be used to fill up the blanks.

156 Where the soil is unsuited for teak, as decided by the District Forest Officer, any other species, provided that it is commercially profitable on a short rotation, may be tried, after consulting the Forest Research Officer.

Section 6.—Silvicultural System.

157. This will be 'Simple Coppice' assisted by artificial regeneration of the blanks between the coppice resulting from the coppice felling.

Section 7.—Calculation of the Rotation.

158. The objects of the Working Circle being twofold, viz., the production of marketable poles and of large-sized firewood, the correct rotation should be the financial one, since a rotation suited to marketable poles would also produce firewood of sufficient dimensions.

Unfortunately no data are available for such a calculation.

159. The rotation to be adopted will be one of 30 years, as the rotation of 20 years adopted in the last plan has been found to be too short.

160. From graphs prepared by Mr. Padmanabha Pillai, District Forest Officer, for teak in this Working Circle in 1920, it is found that a teak sapling of 30 years has an average height growth of 55 feet, a girth of 40½ inches, and a volume of 15½ cubic feet, and though too much reliance cannot be placed on these figures owing to the conditions under which the crop has grown up and the small percentage of trees for which the calculation has been made, it may give some idea of what can be expected.

161. Since 1923 an area of 489 acres in Pulampara Block has already been coppice felled in advance of the prescriptions of this Plan.

162. This area should be regenerated according to the prescriptions of this Plan, but too much time has now elapsed and the area is too large for the task to be attempted now. The last coupe to be felled, viz , compartment 3 (165 acres), will however be treated on the lines laid down in this Plan as far as regeneration goes, and this has been provided for in the Tabular statement of operations, paragraph 185.

Section 8.—Felling Series.

163. There will only be one felling series.

Section 9.—Calculation of the Yield.

164. The yield will be regulated by area, an approximately equal area being felled annually.

165. The yields resulting from 'Coppice with standard' fellings in the past are now of no value owing to change of silvicultural system and the last three years of Simple Coppice fellings do not provide sufficient data nor are the crops sufficiently normal to justify any attempt at calculating the yields for this rotation.

166. As far as coppice alone goes, the past yields are valueless for future calculations as 'fuel' yields included both coppice and such standards as were not reserved.

Section 10.—Method of Executing the Fellings.

167. Hitherto the practice has been to hand over the coupes to contractors on an annual lease.

This method worked admirably under the 'Coppice with standard' system when the standards to be reserved were marked by the local staff.

168. Under the present system of clear-felling everything—fuel, timber and bamboos—there is the grave objection that a fair price may not be obtained for the timber, and this has actually been the case for the last two or three years.

169. A rumour to the effect that departmental working was contemplated appears, however, to have given the necessary stimulus to contractors, and the prices offered for the 1926–27 coupe are considerably in advance of anything so far obtained. The 1926–27 coupes fetched Rs. 250 per acre.

170. The difficulty in selling these coupes standing is how to know that a fair price is being obtained.

171. It is therefore most desirable that an enumeration of the 'timber' (for definition see below) in each year's coupe be made before the coupe is auctioned.

172. This must be carried out by the local staff under the Ranger's personal supervision and will amount to the recording of the estimated cubic content of the loggable portion of each tree coming under the heading of 'timber'. This will enable the District Forest Officer to see whether he is being offered anything like a fair price for the coupe.

173. As a further indication of the probable yield, both for the use of the District Forest Officer at the time of auction and in order to enable future Working Plans Officers to gauge the accuracy of the yield recorded in the control book, which can only be based on the contractor's figures, an "Indicator Acre", which should be an average sample of the whole coupe, will be clear-felled departmentally at the time when the timber is being enumerated. The true yield of timber in cubic feet and of fuel in stacked cubic feet will be measured by the Range Officer personally and the figures obtained will be entered immediately, along with the enumeration figures of timber over the whole coupe, by the District Forest Officer in the remarks Column of the control Book under a heading "Indicator Acre".

If, as is likely, there is difficulty in finding an "Indicator Acre" typical of the whole coupe, this "Indicator Acre" had better take the form of a narrow strip running through the coupe.

174. For the purpose of this Plan, 'timber' is defined as follows:—

Teak	of 6 inches diameter and over.
Venteak	of 12 inches diameter and over.
Xylia	
Vengai (Pterocarpus Marsupium)	
Terminalia paniculata	
Grewia tiliæfolia	
Terminalia tomentosa	
Stephegyne parvifolia	
Rosewood	
Adina cordifolia	
Chloroxylon swietenia	
Bombax malabaricum	
Stereospermum chelonoides	
Albizzia odoratissima	
Acacia leucophlœa	

Any other species may be included if the District Forest Officer considers it desirable.

175. Before handing over the coupes to the contractors, they must be demarcated on the ground.

176. The Range Officer will survey the coupe in accordance with the Working Plan map.

177. The local staff will then clear a line 2 feet wide and coupe stones showing the year of felling will be placed at the corners of the coupe.

178. In clearing these coupe lines it is not necessary to fell trees growing on the line, but all saleable material will be heaped into stacks and left for the contractor.

179. Any deviation from the Working Plan area must be noted in the Control Book.

180. In order to give ample time for the preparation of the area for artificial regeneration it is necessary that the contractor's work should be completed by the end of December. Therefore the coupe will be handed over to the contractor at the beginning of January in each year and the responsibility for having everything removed by the end of the following December will rest with him.

181. It is left open to the District Forest Officer, at any time with the approval of the Conservator, to have recourse to departmental exploitation of the timber if he finds he is not otherwise likely to obtain a fair price for the coupe.

182. In such a case the timber should be extracted some time previous to the rest of the coupe being sold as fuel to a contractor.

183. The timber would be carefully measured and sold at Walayar Railway Station, or at such place as the District Forest Officer considered most advantageous.

184. There is a good deal in favour of working the timber departmentally, and it would be the best indication of what price these coupes should fetch, but labour would probably have to be imported.

Section 11.—Tabular Statement of Operations.

185. For convenience the Blocks have been numbered as follows:—

Pulampara Block—No. I.

Varalapadi Block—No. II.

Waterfall Block—No. III.

Pole Working Circle.

Tabular Statement of Operations.

Year. (1)	Clear felling. Block and compartment. (2)	Coupe. (3)	Area. (4)	Regeneration of blanks. Block and compartment. (5)	Coupe (6)	Area. (7)	First and second Weedings. Block and compartment. (8)	Coupe. (9)	Area. (10)	Cleaning and Climber cutting. Block and compartment. (11)	Coupe. (12)	Area. (13)	Thinning. Block and compartment. (14)	Coupe. (15)	Area. (16)
			Acs.			Acs.			Acs.			Acs.			
1926-27	II-8 (Part).	I	110	I-3	..	165	I-3	..	165	II-10, I-2.	..	550	Not laid down definitely as they are left to the discretion of the District Forest Officer.		
1927	II-8 (Part). II-9 (Part).	II	107	II-8 (Part).	I	110	II-8 (Part).	I	110	I-3.	..	165			
										II-11, I-6, II-12.		657			
1928	II-8 (bal.) ..	III	82	II-8 (Part) II-9 (Part)	II	107	II-8 (Part). II-9 (Part).	II	107	II-8 (Part).	I	110			
										II-13, I-1, I-5.		488			
1929	II-9 (Part).	IV	107	II-8 (bal.).	III	82	II-8 (bal.).	III	82	II-8 (Part), II-9 (Part).	II	107			
										III.		563			
1930	II-9 (bal.). II-10 (Part).	V	107	II-9 (Part).	IV	107	II-9 (Part).	IV	107	II-8 (bal.).	III	82			
										I-3, 4, 7.		489			
1931	II-10 (Part).	VI	107	II-9 (bal.), II-10 (Part).	V	107	II-9 (bal.), II-10 (Part).	V	107	II-9 (Part).	IV	107			
										I-2.		285			
1932	II-10 (bal.).	VII	108	II-10 (Part).	VI	107	II-10 (Part).	VI	157	II-8 (Part).	I	110			
										II-9 (bal.), II-10 (Part).	V	107			
										II-11, I-6, II-12.		657			
1933	I-2 (Part).	VIII	95	II-10 (bal.).	VII	108	II-10 (bal.).	VII	108	II-8 (Part), II-9 (Part).	II	107			
										II-10 (Part).	VI	107			
										II-13, I-1 and 5.		488			
1934	I-2 (Part) ..	IX	95	I-2 (Part).	VIII	95	I-2 (Part) ..	VIII	95	II-10 (bal.).	VII	108			
										II-8	III	82			
										III		563			
1935	I-2 (bal.) ..	X	95	I-2 (Part).	IX	95	I-2 (Part) ..	IX	95	I-2 (Part).	VIII	95			
										II-9 (Part).	IV	107			
										I-3, 4, 7.		489			

284, For.—7

Section 12.—Burning.

186. Between January and April, in the year after felling, the blanks between coppice shoots will be weeded and the weeds together with the 'slash' remaining will be piled, firstly on to the bamboo shoots and secondly on the blanks, and burnt.

Section 13.—Natural Regeneration.

187. Natural reproduction will take place from the coppiced stools and in burning the 'slash' due care must be taken to damage the coppice as little as possible.

Section 14.—Artificial Regeneration.

188. As indicated in paragraph 155, it is not yet known for certain whether, in the case of teak, stumps, seeds or transplants will give the best results. Experiments are in progress at Walayar and elsewhere with a view to deciding this point, as also the question whether, in the case of stumps, one year old plants are big enough and whether the planting of stumps in crow-bar holes, without going to the expense of pitting, will give good results.

189. The District Forest Officer will use his discretion in adopting the most favourable method in the light of experience gained from year to year.

190. The first maxim is to be efficiency and the second cheapness and it is quite possible that complete reliance will not be put on any one of the methods but that two or more of them may be practised.

191. It is, however, definitely prescribed that sufficient plants for stump planting a whole coupe are to be raised each year.

192. *Teak stumps.*—These are to be cut with a sharp knife, leaving not more than 2 inches of stem and not less than 9 inches of root. Any plants damaged in the process of stumping or otherwise are to be discarded ruthlessly.

193. *Espacement.*—The espacement in the blanks to be planted up will be 9 feet by 9 feet In pegging out the area exact accuracy of espacement and alignment are not essential and are to be subordinated to cheapness. Bamboo stakes, 3 feet long, should be prepared in advance and be tied into bundles containing 100 stakes each. The stakes should be put out, by eye, some time before planting begins and an account must be kept and recorded of the number of bundles of stakes used.

194. As a rough guide, it is laid down that planting, in a normal year, ought to be completed by June 20th and that, in the case of sowing, seed ought to be in the ground by April 5th.

195. Throughout the south-west monsoon failures will be replaced as they occur, with the object of obtaining complete stocking in the first year.

Section 15.—Weeding.

196. A first weeding of the teak will be necessary between June and September and will probably cost about Rs. 2 per acre.

A circle about $2\frac{1}{2}$ feet in diameter should be cleared round each stump. Should further weedings, in addition to the cleanings prescribed in the next section, prove necessary, the District Forest Officer will have them carried out.

Section 16.—Cleanings.

197. In September-October of the year after felling, unless the necessity for it has become apparent earlier in the year, a cleaning of the whole of the year's coupe will take place. This will include cutting back all bamboo growth, coppice and other growth interfering with the teak stumps and of climbers interfering with either the coppice or the teak stumps. In the case of bamboo, the best results will be obtained if the new shoots are destroyed as soon as their full development has weakened the rhizomes and before the vitality of the latter has been regained by a supply of food from the new leaves.

The cost will depend on the amount of work necessary.

198. A second cleaning and climber cutting of the whole area will be done at the same time in the second year after felling and it will probably be necessary to go over the area again in the 6th year after felling.

199. The necessity or otherwise of these last cleanings must be left to the District Forest Officer to decide till sufficient experience has been gained.

200. By these provisions it is hoped that the chief menace to the young crop, i.e., bamboo will be checked, since the bamboo will have been cut at the time of felling, burnt and cut again in the first, second and sixth years after felling.

Section 17.—Replacement of Casualties.

201. Casualties will be replaced in the second year at the commencement of the south-west monsoon and will receive similar treatment to the original plants.

Section 18.—Thinning.

202. The sylvicultural necessity for thinning out the shoots from individual teak coppice stools is doubtful.

203. The thinning of other species interfering with the teak must be left to the discretion of the District Forest Officer who should make a point of studying this question about the 6th year after felling.

Any such thinnings, if carried out, are to be primarily in the interests of the teak crop.

204. The necessity for thinnings in the rest of the coppice crop must be left to experience, so long as it is remembered that the main object of management is the production of the maximum quantity of large sized fuel, as far as species other than teak are concerned.

Section 19.—Climber Cutting.

205. This will be done on a five years' basis by the subordinates themselves.

The whole of the working circle will be gone over once in five years as far as possible.

The compartments in which climber cutting is to be done each year will be found in the "Tabular statement of operations", Chapter II, section 11, paragraph 185

Section 20.—Collection of Statistics.

206. It is most important that a careful record of the cost of any artificial regeneration be kept, and this must include cost of all weedings, cleanings, etc.

207. For the purpose of studying the rate of growth and the correct treatment of pole crops, notably in the matter of thinnings, one or more permanent sample plots should be laid out by the Forest Research Officer.

Section 21.—Nursery.

208. A new nursery will be required in this Working Circle and should be located in Varalapadi Block adjoining the Walayar river.

209. It is assumed that 50 per cent of the total area in the Working Circle will require artificial regeneration and with an annual coupe of 107 acres (theoretically) or 53½ acres to be artificially regenerated annually, the following stumps will be required ;—

With an espacement in the forest of 9 feet by 9 feet.

Five hundred and thirty-eight teak stumps will be required annually per acre or, allowing 50 per cent casualties, 807 per acre, i.e., 43,175 plants annually for 53½ acres.

210. The nursery should therefore be one acre in extent, as plants for use in two successive years, at least, will be in the nursery at the same time.

211. The raising of plants in the nursery will be done as follows :—

Raised beds of loose earth 9 inches high, held up on all four sides by split bamboo slats, will be prepared in May. The beds may, conveniently, be 3 feet wide and 24 feet long with 1 foot between beds. In May dumps of teak seed, 3 or 4 inches high and about 2 feet square will be put in different parts of the nursery. Soon after the monsoon bursts germination will start in these dumps. At the first indication of germination and before any leaves are produced the germinating seeds will be pricked out into the nursery beds 6 inches by 6 inches apart. This work may go on for several weeks, the dumps being examined every morning. After pricking out the germinating seeds, no further work should be necessary beyond keeping the surface soil of the beds loose and free from weeds.

No watering of the beds should be necessary.

212. The cost of establishing the nursery will be about Rs. 260 and the annually recurring cost about Rs. 200.

213. *Amount to be spent on regeneration.*—During this 'Conversion' rotation all revenue obtained from the sale of coupes will be profit, since nothing has been spent on regenerating this working circle.

But we ought to know how much we can afford to spend on regeneration.

If we take Rs. 250 per acre as an average figure to be expected from the sale of coupes (the 1926–27 coupe sold for Rs. 250 which is low) we can afford to spend Rs. 100 per acre at 3 per cent compound interest and still show a profit.

But it must be remembered that only 50 per cent of the total area will probably require money spent on regeneration or perhaps a little more, allowing for bamboo cutting, etc., over the whole coupe, so that the amount spent on regenerating an acre is only a small proportion of the amount to be received back for that acre when sold, and we can therefore afford to spend more per acre (say 45 per cent more) than if the whole of every acre was to be artificially regenerated, so that in the case of this Working Circle, as far as expense goes, there is no reason why 100 per cent success should not be attained in regenerating.

Section 22.—Control.

214. The District Forest Officer will be personally responsible for the correct maintenance of the control forms, sample entries in which are given in Appendix III.

215. The forms prescribed are—

The Control Book.
The Record of Works.
The Control Journal.

No special control maps are necessary.

216. *The Control Book.*—A large stoutly bound, blank book will be opened and sufficient pages will be allotted to—

The Pole Working Circle.
The Fuel Working Circle.
The Bamboo Working Circle.
The Grazing Working Circle.
The Minor Produce Working Circle.

For each working circle the appropriate columns, as given in the sample forms, will be ruled as soon as the book is opened.

217. *The Record of Works.*—A similar blank book will be opened and pages will be allotted to—

The Pole Working Circle.

The Fuel Working Circle.

Works common to the whole working plan area.

Under this last heading it is intended that works prescribed in Chapter VII—Miscellaneous Regulations—should find place.

218. *The Control Journal.*—This register will be common to the whole working plan area. It should be maintained by the District Forest Officer personally and should be taken into camp whenever he visits Walayar. The purpose of the journal and the way in which it is to be maintained are described fully in the Forest Code.

219. In the case of the Control Book and the Record of Works, at the time that the 'Results' are being posted for any year in the right hand columns, the 'Prescriptions' for the following year should also be posted in the left hand columns under the District Forest Officer's personal supervision

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CHAPTER III.

WORKING PLAN FOR THE FUEL WORKING CIRCLE.

Section 1.—General Constitution of the Working Circle and Character of the Vegetation.

220. The Working Circle consists of Sholakarai and Tenkaradu Blocks—a total area of 2,547 acres.

221. Sholakarai Block lies in the plains and the railway line runs through the south-east corner of it.

222. North of Sholakarai Block and adjacent to it lies Tenkaradu Block.

223. Tenkaradu Block takes its name from the hill which stands in the plains portion of it—the remainder of the Block lying on the slope of the Bolampatti hills and stretching from the Kuthadi Malai valley to a line somewhat east of Tenkaradu hill.

224. The vegetation is mixed deciduous forest and is poor in character throughout, though near the Kuthadi Malai valley some quite good growth, including some teak, is found.

225. On the hill slopes the soil is generally very poor and several blanks exist; the vegetation is correspondingly of a low type and this characteristic increases on proceeding east-wards.

226. The plains portion of the Working Circle consists of isolated standards of the inferior species, often of Anogeissus, with a fair amount of coppice and a great deal of bamboo, mostly Dendrocalamus strictus. Lantana also occurs. Only occasional teak trees are found. Patches of Black cotton soil occur in Sholakarai Block.

Section 2.—Blocks and Compartments.

227. Sholakarai Block contains Compartments Nos. 14 to 18 permanently demarcated on the ground

Tenkaradu Block is not subdivided into compartments; to do so would be an unnecessary expense since the growth is homogeneous, no natural boundaries exist and in any case the coupes will be demarcated each year on the ground.

(For detailed description of compartments vide Appendix II.)

Section 3.—Method of Treatment.

228. The object of management in this Working Circle is to produce fuel of large dimensions.

Section 4.—Sylvicultural System.

229. This will be Simple Coppice and natural reproduction from coppice stools. All bamboos in the current year's coupe will be felled.

230. No artificial regeneration will be attempted as the soil is too poor and in any case plenty of reproduction from coppice takes place.

Section 5.—Calculation of the Rotation.

231. The rotation will be one of 30 years. Hitherto a rotation of 20 years has been adopted; an increase of 10 years will ensure large sized fuel being produced which is wanted in Coimbatore

232. The total area of the Working Circle being 2,547 acres and the rotation 30 years, the annual coupe will be theoretically 84 acres.

233. Actually the whole of the previously worked portion of this Working Circle will have to be felled before the expiry of its rotation. This is unavoidable and in practice will not matter as all the standards left will also be felled.

Section 6.—Felling Series.

234. There will only be one felling series.

Section 7.—Calculation of the yield.

235. The yield will be regulated by area.

Theoretically the annual coupe will be 84 acres.

236. As nothing has been spent on regenerating the coupes all revenue will be profit during this rotation.

Section 8.—Method of Executing the Fellings.

237. The coupe for the year will be auctioned by the District Forest Officer after being marked out and surveyed on the ground departmentally, in accordance with the Working Plan map, by clearing a 2 feet line. All saleable material to be stacked and left for the contractor.

The successful contractor will be bound by the terms of his agreement and will be entirely responsible for the felling and removal of the produce.

238. From January 1927 onwards coupe leases will run from January to December.

239. In order to work the hill slopes it is proposed to construct a cart road from Varalapadi Block to the foot of the Bolampatti hills (vide Chapter VII, section 2, paragraph 259).

Section 9.—Tabular Statement of Fellings.

240. For convenience the Blocks have been numbered as follows:—

Tenkaradu Block—No. IV, and

Sholakarai Block—No. V.

FUEL WORKING CIRCLE.

Tabular statement of Operations.

Year.	Clear felling.			Cleaning.			Climber cutting.		
	Block and compartment.	Coupe.	Area.	Block and compartment.	Coupe.	Area.	Block and compartment.	Coupe.	Area.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			ACS.			ACS.			ACS.
1926-1927	IV	I	90	..	..	..	IV *	..	395
1927	IV	II	86	IV	I	90	V-14	..	376
1928	IV	III	85	IV	II	86	V-15 and 16	..	590
1929	IV	IV	88	IV	III	85	V-17 and 18	..	287
1930	IV	V	89	IV	IV	88	..	Nil.	..
1931	IV	VI	87	IV	V	89	IV *	..	395
1932	IV	VII	87	IV	VI	87	IV	I	90
1933	IV	VIII	88	IV	VII	87	V-14	..	376
							IV	II	86
1934	IV	IX	88	IV	VIII	88	V-15	..	320
							IV	III	85
1935	IV	X	111	IV	IX	88	V-16	..	276
							IV	IV	88
							V-17 and 18	..	287

* Part not to be worked during period of plan.

SECTION 10.—CLEANING AND CLIMBER CUTTING.

241. This will be carried out in September of the year after felling.

Only such cleaning will be necessary as to allow the young crop of coppice to get a start of weeds, bamboos, etc. The cost will depend on the amount of work necessary.

N.B.—This is not a weeding

242. A similar operation may be carried out in the sixth year after felling *if necessary*. This latter operation will probably consist of climber cutting only.

243. The 1926-27 coupe was sold for Rs. 27 per acre; if we take Rs. 25 as an average figure for the next ten years we can afford to spend Rs. 9 per acre and still show a profit. When the plains portion of this Working Circle comes to be worked higher prices should be realized, as extraction is easier and the existing standards will also be removed.

SECTION 11.—CONTROL.

244. The special control forms given in Appendix III will be kept up on similar lines to those described under the Pole Working Circle.

CHAPTER IV.

WORKING PLAN FOR THE BAMBOO WORKING CIRCLE.

SECTION 1.—CONSTITUTION OF THE WORKING CIRCLE.

245. This Working Circle will correspond with the whole of the Pole and Fuel Working Circles, excluding the bamboos on an area down for felling in either of the above Working Circles in each year.

SECTION 2.—METHOD OF TREATMENT.

246. The right to cut bamboos will be auctioned annually, provided that there are mature bamboos to cut.

N.B.—Bambusa arundinacea may be taken as marketable at 12 years old and Dendrocalamus strictus at 10 years old.

Leases should run from January to December. The working of the coupes will be carried out in accordance with the terms of the usual agreement in force in the district.

SECTION 3.—FELLING SERIES.

247. There will be two felling series, one to correspond with the Pole and the other with the Fuel Working Circle subject to the abovementioned exclusion.

SECTION 4.—ROTATION.

248. The rotation will be one of three years.

SECTION 5.—YIELD.

249. The yield will be regulated by area.

Section 6.—Tabular Statement of Fellings.

250. No. 1 Felling series corresponding to the Pole Working Circle—

Year.	Block and compartment.	Area in acres.
1927	Waterfall Block	563
1928	Pulampara Block (workable portion)	1,363
1929	Varalapadi Block	1,284
	and so on *ad lib.*	
No. 2 Felling Series corresponding to the Fuel Working Circle—		
1927	Tenkaradu Block (area due for felling during next ten years)	899
1928	Remainder of Tenkaradu Block { 395 Sholakarai Block, { 376 Compartment 14. ——	771
1929	Sholakarai Block, Compartments 15, 16, 17 and 18.	877
	and so on *ad lib.*	

CHAPTER V.

THE GRAZING WORKING CIRCLE.

251. Grazing will be permitted throughout the whole Working Plan area as ordered in G.O. Mis. No. 1561, Development, dated 5th September 1924, except in coupes worked within the last five years, subject to a limit of 5 acres per cow and a fee of Re. 1 per cow unit.

252. The coupes closed to grazing are shown below for each year of the period of this Plan.

Area closed to grazing during the period 1926—1935.

Year.	Compartments, Coupes and Blocks.
1926	Compartments Nos. 1, 3, 4, 5, 7, 8 and Coupe I, Block IV.
1927	Compartments Nos. 3, 4, 5, 7, 8, 9 and Coupes I and II, Block IV.
1928	Compartments Nos. 3, 4, 5, 7, 8, 9, 10 and Coupes I, II and III, Block IV.
1929	Compartments Nos. 3, 4, 5, 7, 8, 9 and Coupes I, II, III and IV, Block IV.
1930	Compartments Nos. 3, 4, 5, 7, 8, 9, 10 and Coupes I, II, III, IV and V, Block IV.
1931	Compartments Nos. 3, 8, 9, 10 and Coupes II, III, IV, V and VI, Block IV.
1932	Compartments Nos. 9, 10 and Coupes III, IV, V, VI and VII, Block IV.
1933	Compartments Nos. 10, 2 and Coupes IV, V, VI, VII and VIII, Block IV.
1934	Compartments Nos. 10, 2 and Coupes V, VI, VIII and IX, Block IV.
1935	Compartments Nos. 10, 2 and Coupes VI, VII, VIII, IX and X, Block IV.

CHAPTER VI.

THE MINOR PRODUCE WORKING CIRCLE.

253. This Working Circle will cover the whole Working Plan area.

The right to collect minor produce will be sold annually in public auction according to the existing practice.

CHAPTER VII.

PRESCRIPTIONS COMMON TO ALL WORKING CIRCLES.

Section 1.—Miscellaneous Regulations—Fire Protection.

254. There is some doubt as to the advisability of fire protecting the plains portion of the Walayar forests.

255. The Bolampatti hill slopes must be fire protected by burning, annually, the range boundary on the crest of the hills and the fire line at the foot.

256. In the plains the danger from fire, except along the railway, is not very great, nor is the damage likely to be caused by fire very great, except in areas recently regenerated

257. The existing fire line, north of the railway and adjacent to it, will be maintained and no other in the plains portion.

258. The Varalapadi Block, in which are situated seven of the coupes of the Pole Working Circle to be regenerated during the Working Plan period, receives considerable natural protection on three sides from the Walayar river and the Kartharaman stream.

Section 2.—Roads and other Export Works.

259 In order to exploit the lower slopes of the Bolampatti hills which are down for working during the period of this Plan in the Fuel Working Circle, a cart road will be necessary from the foot of the hills to the nearest part of Varalapadi Block, whence extraction to the railway station is easy.

260. The proposed alignment of this new road is shown approximately on the Working Plan map.

261. Its length will be about 7 furlongs 53 yards and it is proposed to acquire land to a width of 33 feet.

262. Construction of the road and acquisition of land will probably cost Rs. 200 and Rs. 300, respectively.

All existing roads will be maintained

Section 3.—Improvement of Waterways and Water-supply and Methods of Exploitation.

263. No extraction is done by waterways.

264. No felling is to be done within 2 chains of a perennial source of water.

265. At present all extraction can be efficiently done by carting. If at any time it is desirable to exploit the upper slopes of the Bolampatti hills mechanical methods might have to be adopted

Section 4.—Buildings.

266. In view of the increase in the establishment contemplated for the carrying out of the prescriptions of this Plan the following extra buildings will be required :—

(1) Permanent quarters at Walayar for four forest guards. This will cost about Rs. 3,000.

(2) Permanent quarters at Navakkarai for two forest guards, which will cost about Rs. 2,000

There are permanent quarters at Navakkarai already for one forester and two forest guards.

(3) Permanent quarters at Chavidapara for two forest guards, which will cost about Rs. 2,500.

The total cost of new buildings will therefore be about Rs. 7,500.

Section 5.—Maintenance of Boundaries.

267. The boundaries are all in a satisfactory state of repair with the exception of that indicated under Part I, Chapter I, section 7 (*d*).

268. A 10 feet line should be cut between the reserve forest and the panchayat areas at the eastern end of the Bolampatti hills running from the reserve line on the south to the range boundary on the north.

Section 6.—Surveys and Maintenance of Maps.

269. Working Plan maps showing in detail the areas to be worked during the next ten years have been supplied on the scale of 4 inches to the mile as follows :—

One as an appendix to the Working Plan.

One to the District Forest Officer, Palghat.

One to the Range Officer, Palghat Range.

CHAPTER VIII.

ESTABLISHMENT AND LABOUR.

270. Owing to the considerable increase in the amount of work to be carried out at Walayar in future the following extra staff will be necessary :—

One Forester at Rs. 55 per mensem (Rs. 45 plus Rs. 10 fixed travelling allowance).

Two Forest Guards at Rs. 15 per mensem.

271. It is desirable that two Forest Guards be stationed at Chavidapara for the better protection of the Bolampatti hill slopes.

272. The following statement shows the proposed alteration in the staff :—

Present staff.			Proposed staff.		
Rank.	Number.	Cost per month.	Rank.	Number.	Cost per month.
		Rs.			Rs.
Forester	1	Rs. 45 plus Rs. 10 fixed travelling allowance = 55	Foresters	2	110
			Forest Guards	10	150 average
			Bungalow watcher ..	1	12
Forest Guards	6 (permanent)	105			
Do.	2 (temporary)	30			
Watchers *	4	49			
Tannadar (at Navakkarai).	1	12			
		251			272

* One watcher receives Re. 1 extra for watching the bungalow.

This will mean an estimated increase of Rs. 21 per month.

It will be noticed that no watchers have been allowed for. Forest Guards cost little more and are more satisfactory from every point of view.

Also the Tannadar has not been allowed for, as protection and checking should be done inside the forest and not outside.

273. The staff will be distributed as follows :—

Rank.	Quarters.	Beat.
One Forester	Walayar ...	In charge of the Pole Working Circle.
One Forester	Navakkarai (permanent quarters are available).	In charge of the Fuel Working Circle and also the general protection of the whole forest.
Two Forest Guards ...	Chavidapara ...	Protection of Bolampatti hill slopes as far east as the Kuthadi Malai valley and northern half of Varalapadi Block.
Two Forest Guards ...	Walayar ...	Protection of southern half of Varalapadi Block and Pulampara Block and available for cultural operations.
Two Forest Guards ...	Walayar ...	Available for cultural operations.
Two Forest Guards ...	Navakkarai ...	Protection of Fuel Working Circle and slopes of Bolampatti hills east of Kuthadi Malai valley.
Two Forest Guards ...	Navakkarai ...	Available for cultural operations.
One Bungalow watcher ...	Walayar ...	To look after Forest rest-house.

CHAPTER IX.

FINANCIAL FORECAST AND COST OF PLAN.

Section 1.—Financial Forecast.

274. It is impossible to give more than a rough financial forecast as a great deal depends on the amount of regeneration necessary and its cost, both factors being at present unknown quantities.

275. The following is a conservative estimate of Revenue and Expenditure for the period of the plan :—

Revenue.	RS.	*Expenditure.*	RS.
Sale of coupes	3,00,000	Roads	3,000
Other revenue	7,500	Buildings	10,000
		Fire protection	1,000
		Regeneration and other silvicultural operations ...	37,000
		Other expenditure	10,000
		Establishment	55,000
	3,07,500		1,16,000
Estimated surplus ...		1,91,500	

or say Rs. 1¾ lakhs to be on the safe side.

Section 2.—Cost of the Plan.

276. The following amount may reasonably be debited to the cost of the plan :—

Budget heads.	Cost of Working Plan. RS. A. P.
52-A-c-ii Regeneration—	
Pay of officers—Non-voted	2,887 1 0*
Pay of establishment—Voted	589 4 0
Allowances—Voted—Travelling allowance	1,082 2 0
Non-contract contingencies—Voted	2 11 0
Other compensatory	393 9 0
52-A-b-VII (d) 4—	
Working plans	93 3 0
Total ...	5,047 14 0

*Including overseas pay.

CHAPTER X.

277 Summary of Prescriptions.

Working Circle.	Prescriptions.	Paragraph reference.
Pole	Method of treatment	154
	Choice of species	155, 156
	Silvicultural system	157
	Rotation	158, 159
	Yield	164 to 166
	Method of executing the fellings	167 to 184
	Tabular statement of operations ...	185
	Silvicultural operations, regeneration, etc.	186 to 205
	Nursery	208 to 212
Fuel	Method of treatment	228
	Silvicultural system	229, 230
	Rotation	231, 232
	Yield	235, 236
	Method of executing the fellings	237 to 239
	Tabular statement of operations	240
	Silvicultural operations	241, 242
Bamboo	Method of treatment	246
	Felling series	247
	Rotation	248
	Yield	249
	Statement of fellings	250
Grazing ...	Areas closed to grazing	252
Minor produce ...	.....	253
General to all working circles.	Fire protection	254 to 258
	Roads	259 to 262
	Buildings	266
	Boundaries	267, 268
	Establishment and labour	270 to 273

APPENDIX I.

List of species commonly found in the Walayar Forests.

Serial number and systematic name.	Tamil name.	Malayalam name.
1. Tectona grandis	Thekku	Thekku.
2. Pterocarpus Marsupium	Vengai	Venge.
3. Dalbergia latifolia	Iti	Viti.
4. Terminalia paniculata	Pilla maradu	Pila maradu.
5. Terminalia tomentosa	Karru maradu	Karri maradu.
6. Lagerstrœmia lanceolata	Ventekku	Ventekku.
7. Albizzia odoratissima	Silla-vagai	Karuvaghi.
8. Terminalia belerica	Tani	Tani.
9. Bombax malabaricum	Valaka (Elavan)	Poola.
10. Dalbergia paniculata	Patchali (Porai)	Pavinginni.
11. Stereospermum chelonoides	Padari	Padari.
12. Morinda citrifolia	Nonna	Mancha pavatha.
13. Stephegyne parvifolia	Neerkadambai	Neerkadambai.
14. Adina cordifolia	Manja kadamba	Manja kadamba.
15. Bridelia retusa	Sirru vengai	Mulluvenga.
16. Tamarindus indica	Puli	Puli.
17. Hardwickia binata	Acha	Acha.
18. Melia dubia	Mala vembu	Malaweppu.
19. Grewia tiliæfolia	Tadasa	Chadachi.
20. Acacia leucophlœa	Velvalam	Vellavalakam.
21. Strychnos Nux-vomica	Kanciram or Etti	Kanjiram.
22. Chloroxylon Swietenia	Porasu	.....
23. Odina Wodier	Odeya	Annakare.
24. Vitex altissima	Maila	Maivella.
25. Acacia Sundra	Karungali	Karungayali.
26. Anogeissus latifolia	Vellanaga	Vella nave.
27. Eugenia jambolana	Naval	Navil.
28. Acacia arabica	Karuvelam	Karuvelakkam.
29. Ficus religiosa	Arasa	Arayal.
30. Xylia xylocarpa	Irul	Irul.
31. Alangium decapetalum	Alanji	.....
32. Cassia Fistula	Konnai	Konna.
33. Bauhinia racemosa	Ati	Arampuli.
34. Butea frondosa	Yella porasu	Pilase.
35. Zizyphus Jujuba	Elandai	Elanta.
36. Acacia Farnesiana	.....	Vedathalam.
37. Cassia auriculata	Avaram	Avaram.
38. Acacia ferruginea	Velvayalam	.....
39. Holarrhena antidysenterica	Vepalai	Kulapala.
40. Wrightia tinctoria	Nilapala	Pala.
41. Helicteres Isora	Valambaree	Valampiri.
42. Bambusa arundinacea	Tatta mungil	Vellia molla.
43. Dendrocalamus strictus	Sirru mungil	Cheria molla.
44. Spathalobus Roxburghii	.....	.....

APPENDIX II.

Detailed Description of Compartments.

Pulampara Block.					
Compartment. (1)	Area and boundaries. (2)	Soil and aspect. (3)	Description of growth. (4)	Past treatment. (5)	General. (6)
1	248 acres. North and north-west—The South Indian Railway line. South-west—Patta lands. South and south-east—The Palghat-Coimbatore road.	Soil—A deep clayey loam varying slightly in its admixture of sand. Aspect—Nil. Slope—Generally level with gentle undulations. The western part slopes gently towards the south-west boundary. Drainage—Good, assisted by small water-channels. Outcrops—There is a large outcrop of gneissic rock near the railway towards the western end, and several small ones occasionally. There also appears to be a small "pan" near the centre where the tree growth hardly exists.	*Coppice with standards.* Standards are mostly teak, Pterocarpus Marsupium (Vengai), Terminalia paniculata, Grewia, Albizzia odoratissma, etc., and are very isolated for the most part, except in the centre and north-west. Coppice generally does not show good growth. Teak occurs in patches, being most numerous on the southern side but the trees are branchy and produce epicormic branches. In the north-west there are practically no teak standards and only a few coppice teak badly suppressed. In other parts teak shows better coppice growth than any other species. There is a fair amount of a natural regeneration of teak especially along the Coimbatore-Palghat road. Bamboo is scarce in the north-west owing no doubt to its not having been worked over so recently but occurs frequently in patches elsewhere, especially where the lack of standards has allowed light to get in and consists chiefly of Dendrocalamus in the half mature and mature stage.	Coppice with standard felling— ACS. 1902-03 .. 164 1903-04 .. 10 174 Coppice with standard felling— ACS. 1912-11 .. 74 218 1921-22 .. 168 Which represents the same area as was felled in 1902-03.	Two old sub-coupe lines traverse the compartment. Fire lines run parallel to the road and the railway. Extraction is by the fire line on the north boundary and by the Coimbatore-Palghat road.
2	285 acres. North—A cleared line running from the reserve boundary on the west along the foot of the hills as far as Karadi Kunrub hill. (Closed Working Circle.) East—Compartment 3. South—Railway line. West—Vadasseri Estate Forest.	Soil—Mostly a clayey loam varying from deep to rather shallow where there appears to be a "pan". Aspect—Nil. Slope—Generally level with slight undulations, with a gentle slope down to the western boundary in the south and a slight rise to the foot of the hills. Drainage—Good. Several deeply scoured water-courses drain from north to south. Outcrops—There are numerous outcrops of gneissic rock especially in the north part and a large one in the south-west.	*Coppice with standards.* Stocking is fairly good in places especially in the south-west, where coppice, such as there is, shows good growth. But over much of the compartment and especially the northern half there is practically no coppice and the forest approaches high forest type and varies from fair to poor. Teak shows its best growth in the south-west in patches whilst over the central portion only isolated teak are found. Towards the north-east coppice appears again and the stocking improves; here there is also some pole teak. Both stocking and growth deteriorate in the eastern half and the better species tend to disappear. Bamboo of both species in the half developed and mature stage occurs throughout in patches except in the south-west, but is nowhere very dense. Mature clumps of Bambusa exist at the eastern end. Creepers are spoiling some of the standards on the more rocky ground.	Coppice with standard felling— ACS. 1909-10 .. 183 1910-11 .. 102 285	An old Compartment line rather over-grown traverses most of the compartment from east to west. One or two foot-paths in the west and a cart track through part of the south portion. Fire lines run— 1. parallel to the railway; 2. along the reserve boundary in the west. No. 2 does not run right up to the hill boundary and should be cleared Extraction is by the fire line on the southern boundary.

Pulampara Block.

Compartment. (1)	Area and boundaries. (2)	Soil and aspect. (3)	Description of growth. (4)	Past treatment. (5)	General. (6)
3	165 acres. East—Compartments 4 and 5. South—Railway line. West—Compartment 2 and a cleared line running round part of Karadi Kunrub hill and continuing along foot of Palaicambu Malai. (Closed Working Circle.)	Soil—Generally a rather poor sandy loam, particularly poor near the outcrop in the north but richer in the extreme north and west centre. Aspects—Nil. Slope—The northern part slopes gradually to the north and there is a slight rise to the foot of the hills on the west, otherwise level. Drainage—Good. Deep water courses drain from west to east except in the south where they mostly drain to the south. Outcrops—The outcrop of gneissic rock in the north is a continuation of that in compartment 4.	*Simple coppice.* The crop was clear felled in 1925–26 and is therefore impossible to describe. The extreme northern portion probably showed the best growth and stocking. There appears to have been little or no coppice, but a very open stand of high forest and Bambusa in the mature stage. Further south the stocking was probably denser but the growth poor, except for a patch along the east slope of Karadi Kunrub, mostly Terminalia paniculata. In the western corner the growth appears to have been very poor. Bambusa covered the whole compartment near the hill, being sometimes pure bamboo. There was very little teak but a few Xylia in the north and some natural regeneration of the same as well as of Bombax (pole size) had taken place. Creepers had evidently done some damage in places.	Coppice with standard felling—1905–06 165 acs. Coppice felling—1925–26 165 acs.	Several sub-coupe lines run through the compartment. Fire line—A fire line runs parallel to the railway on the southern boundary. Extraction is by the compartment line on the east, or in the south by the fire line.
4	155 acres. North—Compartment 5. East—Railway line. South—Railway line. West—Compartment 3.	Soil—Mostly a rather gravelly loam with better areas here and there, but at the north end becomes only a shallow gneissic dust. Aspect—Nil. Slope—Generally level, with a slight rise to north at the northern end. Drainage—Good. There are one or two water courses in the east. Outcrops—There is a large outcrop of gneissic rock on the northern boundary and three fair-sized and several lesser outcrops elsewhere in the compartment.	*Simple coppice.* Except for the northern portion the coppice growth is pretty good and teak holds its own. In the north however the crop is much poorer owing to the very poor soil. Stocking is only about half of what it should be throughout the compartment and the ground is well covered by weeds. As however, except in small patches there is not a serious growth of bamboo (Bambusa in seedling stage) and only a few signs of lantana and the coppice growth in the southern portion is vigorous, no harm is being done. In the poor northern part the weed growth is luckily also poor.	Coppice with standard felling—1904–05 166 acs. *N.B.*—This figure agrees with the late Working Plan but is wrong according to latest surveys (vide infra). Coppice felling. Acs. 1924–25 .. 53 Do. .. 50 Do. .. 52 155 September 1925—Plantation. In the south of the compartment teak seedlings were planted between the coppice over 1 acre. In October 1925 the plot appeared to be a complete failure.	Roads—An old compartment line traverses the compartment from north to south. Two or three cart-tracks and footpaths meander through the compartment. Fire lines—A fire line runs round the southern and eastern sides of the compartment parallel to the railway. Extraction is to the fire line on the south and east. Cutting back of bamboo was done in 1925–26.

Pulampara Block.					
Compartments. (1)	Area and boundaries. (2)	Soil and aspect. (3)	Description of growth. (4)	Past treatment. (5)	General. (6)
5	174 acres. North—Compartment 7. East—Railway line. South—Compartment 4. West— (a) Compartment 3. b) The base of Swami Malai. (c) The Vadasseri Estate forests. Divided into sub-compartments. A. 146 acres. B. 28 acres.	Soil.—A rather poor sandy loam. The soil in sub-compartment B being the poorest. Aspects—Nil. Slope.—Level except for a slight rise to the base of the hills on the west. Drainage—Good. Outcrops—There is a large one in sub-compartment B.	*Sub-compartment A—Coppice with standards.* Except for a strip along the southern boundary and a small area on the northern boundary the crop is very poor coppice with standards. As the coppice was felled to recently it is difficult to say what the result will be like. There is a dense under growth ofwhich little looks likely to become good coppice. There is a good deal of Pterocarpus Marsupium but nearly all poorly grown and branchy. The whole of the centre of the sub-compartment is very poorly stocked with standards or coppice and the former deteriorate badly in growth as the hill on the north-west is approached. A strip of standards along the southern boundary shows possibly rather too dense stocking for the coppice. Teak only occurs in patches. Undergrowth is dense over the whole sub-compartment, but especially in the eastern portion. It consists of more or less pure bamboo (Bambusa in half developed stage). Lantana occurs in patches. Helicteres Isora and other shrubs take up much of the rest of the ground. Teak regenerates itself when it gets the chance. *Sub-compartment B—Simple coppice.* Growing on poor soil this sub-compartment presents an appearance similar to compartment 7-A (q.v.) Stocking.—Open in places but on the whole good. Mostly inferior species doing well. There is not much teak except round the outcrop. Both growth and stocking are better in the west.	Coppice with standard felling. Sub-compartmentA. 1902-03 } 59 acres. 1903-04 } Coppice with standard felling. ub-compartment A 1924-25. .146 acres. Coppice felling. Sub-compartment B. ACS 1924-25.. 28 -- 174 *N.B.*—The areas felled in 1902-04 are confused and cannot be separated.	Roads.—A metalled road forms the northern boundary. An old compartment line traverses the compartment from north to south; also one or two cart-tracks and old compartment lines. Fire lines.—A fire line runs parallel to the railway and another along the metalled road in the north. Enclosures.—There is a small patch of cultivation of about 11 acres opposite the railway station which is let out on lease. Extraction is by any of the boundaries.
6	167 acres. North-west and west--Railway line South—Coimbatore-Palghat road. East—The Walayar river.	Soil—Mostly a rather shallow sandy loam. Aspects—Nil. Slope—Generaly level. Slopes somewhat to the river in the south-east. Drainage—Good. There are several small watercourses. Outcrops—There are several large outcrops of gneissic rock. A large one adjoins the Coimbatore road in the south east. This stratum extends nearly to the railway.	*Coppice with Standards.* But the coppice is generally either so poor or else does not exist at all, that the compartment partakes of the nature of high forest. Much of the Pterocarpus Marsupium (Vengai) appears to be a good deal older than the rest of the crop; those in the eastern portion of the Compartment are fairly wellgrown but in a patch of practically pure Pterocarpus Marsupium (Vengai) probably planted by Mr. Knox, I.C.S., in 1876 in the western half they are very badly forked. Teak shows moderate growth where it occurs, but tends to disappear at the western end. The stocking is often open. On the whole the eastern half shows considerably better growth than the western. Bamboo.—There is a strip of nearly pure Bambusa in the mature stage near the Railway station. Elsewhere it occurs sporadically in the half developed or mature stage but has not got much hold yet. Lantana.—Owing to the very poor canopy in many places and the presence of outcrops of rock several patches of lantana, mostly small as yet, exist; the largest being the strip growing on the strip of poor soil just east of the metalled road in the centre of the compartment. The lantana is not yet threatening the trees. In the eastern half some natural regeneration, chiefly of Grewia, has taken place. Teak regenerates itself when it gets a chance.	Coppice with standard felling. 1912-13 .. 167 acres.	Roads—(1) A metalled road devides the compartment in half. (2) The metalled road leadingfrom the Coimbatore-Palghat road runs through the south west corner. Fire lines.—A fire line surrounds in the whole compartment. Two interior lines run on each side of the metalled centre road of the compartment. The small south-west corner west of the road to the railway station also surrounded by a fire line. Extraction is by the two metalled roads out to the Railway station and the main road. Enclosure —There is a small patch of about 7 acres of cultivated land adjoining the railway station which is let out on lease.

Pulampara Block.

Compartment. (1)	Area and boundaries. (2)	Soil and aspect. (3)	Description of growth. (4)	Past Treatment. (5)	General. (6)
7	169 acres. Divided into : Sub-compartment A = 145 acres and Sub-Compartment B=24 acres. North—The Katharaman Thodu. North-East — The Walayar river. East and South-east — Rallway line. South — Compartment 5. West — Vadasseri Estate forests and Varalapadi Block.	Soil.—Mostly a poor sandy clay with sand predominating ; rather better in the centre. Aspect.—Nil. Slope.—Generally level, with a slight slope to the west at the western end and also to the north and north-east boundaries. Drainage.—Good. There are one or two water-channels in the east. A stream in the north west drains into the Katharaman Thodu. Outcrops.—There are several small outcrops of gneissic rock.	*Sub-compartment A.—Simple coppice.* Simple coppice. Except for a small area in the centre the coppice is rather poor and, except for teak, is chiefly confined to inferior species. In the centre teak is fairly abundant, and is coppicing well. In the west there is very little teak and that but very poor coppice. In the east there is a good deal of teak but the growth is rather poor. Stocking is poor in the eastern half and the growth backward. In the west the growth is quite good and also the stocking but is practically confined to the inferior species. Bamboo.—There is a certain amount of Bambusa in the seedling stage (since cut back). Lantana exists in places small as yet, but is likely to become a danger to the very open teak coppice especially in the eastern half where the teak has not the vigour of the inferior species. *Sub-Compartment B.—Coppice with standards.* Very open standards with very little coppice. Stocking is very poor, and the growth of the standards branchy including some Ptrocarpus Marsupium (vengai). The coppice is poor. Bamboo.—Over most of the sub-compartment there is a dense growth of Bambusa in the half developed stage. There is round a small outcrop a patch of practically pure teak poles.	Sub-compartment A. Coppice with standard fellings. 1903–04 ⎫ 145 1904–05 ⎭ acres. Clear felling.— 1924-25 145 acres. Sub-compartment B Coppice with standard felling. 1902–03 24 acres. Experimental teak stumping between coppice (area unknown) was done wrongly by subordinates in 1925, in south west of sub-compartment A. Apparently it has been a failure.	Roads—A metalled road forms the south boundary. Several old coupe lines run through sub-compartment A and an old compartment line skirts the western end of sub-compartment B. Fire lines—A line runs parallel to the metalled road on the south boundary, another parallel to the railway and there is a third on the west boundary. Extraction is by the south and south-west boundaries. Nursery—There is a nursery of about 3/4 acres in sub compartment A alongside the Walayar river. Cutting back of bamboo, etc., was done in 1925–26.
8	266 acres. North — The Walayar river. East—The Walayar river. South—The Katharaman Thodu. West — Compartment 9.	Soil—Varies from a deep rich sandy loam in the northernmost portion to a shallow stony soil over much of the centre of the compartment. Aspect—Nil. Slope - Generally level, with a short drop down to the streams on the north, south and east boundaries. Drainage—Good. The compartment is traversed by deep watercourses from west to east draining into the Walayar river. Outcrops of gneissic rock, occur occasionally near the Walayar river.	*Coppice with standards.* There is great variation throughout the compartment. The northernmost portion save for a small strip at the eastern end carries a "stand" of well stocked and well grown timber, with a good deal of good teak and some poles. There is not much coppice and the forest has the appearance of well stocked high forest ; what coppice there is is straight but suppressed in growth. There are patches of Bambusa in the half developed to mature stage but not dense. Teak disappears along the Walayar river where the growth and stocking fall off. South of this good area, however, both growth and stocking fall off considerably though some fairly good teak is found near the western boundary in places.	Coppice with standard felling— Acs. 1906–07.. 111 1907–08.. 75 1908–09.. 80 — 266	Roads—Several cart-tracks, sub-coupe lines and footpaths run through the compartment. Fire lines.—A disused fire line runs most, but not all, of the way parallel to the Walayar river. A second fire line runs parallel to the Katharaman Thodu for only a part of the distance. Neither are necessary. Cultivation—There are two plots of cultivated land (about 10 acres each) beside the Walayar river on the north and north-east boundaries respectively, which are cultivated by subordinates. Extraction is by cart-tracks and out through Block I.

Throughout the central portion of the compartment the stocking is poor as well as the growth, only the inferior species being represented.
This deterioration in the crop becomes worse on proceeding eastwards and the strip near the Walayar river is very poor. This very poor growth in the east improves however on going south, and the south-east part of the compartment, except for the most southerly portion, shows a considerably better type of forest with rather open stocking but fair height growth and occasional patches of nearly pure coppice. Teak reappears here.
The more westerly portions are poor open areas with little or no coppice.
The most southerly part of the compartment is of similar type.
Teak is poor and scarce throughout these poor areas.
Bamboo chiefly in the half developed stage is prevalent throughout the compartment in large patches, being densest where the canopy is poorest.

Varalapadi Block.					
Compartment.	Area and boundaries.	Soil and aspect.	Description of growth.	Past treatment.	General.
(1)	(2)	(3)	(4)	(5)	(6)
9	197 acres. North— The Walayar river. East—Compartment 8. South— Vadasseri estate forests. West — Compartment 10.	Soil—Varies from a moderately sandy loam to a shallow soil on gneiss. Aspects—Nil. Slope—There is a slight slope down to the north boundary and a short drop down to the south boundary. Otherwise it is practically level except for a gentle slope to the east in the north-west. Drainage—Good. Several watercourses traverse the compartment from west to east and two or three drain into the stream on the south boundary.	*Coppice with standards.* The crop is on the whole rather poor. Teak occurs throughout most of it except on the poorest areas, chiefly in mixture with Grewia. In parts, the growth of teak is moderate to poor, and owing to the usually open stocking the trees are rather branchy and do not show good height growth. Over most of the compartment coppice is either very poor or non-existent, but there are patches in the south, often on the poorest areas, where there is fairly good coppice and a corresponding disappearance of standards. A certain amount of natural regeneration of Grewia has also come in. There are a few badly grown Pterocarpus marsupium (Vengai). In places there is some moderate teak coppice. A strip along the northern part of the eastern boundary shows poor growth and stocking, but south of this there is a short strip of quite good coppice with practically no standards. On a poor soil in the south-west there is a fair coppice growth but the standards are open and badly grown. Individual trees suffer here and there from climbers. Only small portions of the area are altogether free from bamboos but it is only dense in places. Both bamboos are found; the Dendrocalamus in all stages, and the Bambusa in the seedling and half, developed stage.	Coppice with standard felling.— Acs. 1906–07 .. 72 1907–08 .. 88 Do. .. 37 Total .. 197	Roads—Nil. Fire-lines— There is one on the north and one on the south boundary. Extraction is by any of the boundaries.
10	265 acres. North— 1. The Vadaseri estate forests. 2. From where the Partikarai stream joins the Walayar river the latter is the boundary. East—Compartment 9. South— Vadasseri estate forests. West— Compartment 11.	Soil—Gnerally a deep sandy loam, in some parts there is less and in others, more sand; but becomes poorer in the north (centre) and north-west of the compartment. Aspect—The north-west part of the compartment has a slight north-east aspect. Slope—Varies from moderate at the north-west end to slight or nil at the eastern boundary. The north of the compartment has a gentle slope to the north-east and portions of the south-east slope gently in that direction, the intervening portion having a slight easterly slope. There is a short drop down to the streams on both the north and south boundaries. Drainage—Good. The northern-most strip of the compartment is much cut into by watercourses, with a west and east and also north-east direction. In the south of the compartment watercourses run either from west to east or in a more or less southerly direction. Outcrops—There are one or two outcrops of gneissic rock.	*Coppice with standards.* The northern-most strip consists of virtual high forest, very open and with a good deal of bamboo. (Bambusa in the half developed stage). The height growth is quite good but there is very little teak. South of this the stocking becomes dense and bamboo only occurs in patches. The growth varies throughout the centre of the compartment from moderate to fairly good; the poorest areas being those where the ground rises to the hill in compartment 11—the growth here being poorer and straggly. Teak occurs over most of this area except in the centre where Melia dubia of pretty good growth is the chief species. There is a certain amount of teak coppice and some teak poles where teak occurs. The stocking except for the western portion mentioned above is generally good and in places the ground is overstocked. Towards the south-east there is a fairly large patch of teak, mostly coppice in the pole stage but the stocking is sometimes open and the standards poor. In the south of the compartment the crop varies from good teak growth to patches of poorer area towards the west, where teak more or less disappears. There are, however, portions in the south of the compartment where there is good pole growth of Grewia, with some teak, and the coppice straight and well-grown. The strip along the south boundary is rather poor and open and contains some Bambusa in the half-developed stage. Lantana—There are traces of lantana in the compartment.	Coppice with standard felling— Acs. 1908–09 .. 58 1911–12 .. 129* 1912–13 .. 30† 1914–15 .. 48 Total .. 265	Roads—One or two cart-tracks and paths run through the compartment. Fire-lines—Are on the north and south boundaries respectively. The compartment line between compartments 10 and 11 wants clearing. Extraction is by the boundaries.

* 50 acres of this were not worked.

† Does not all appear to have been felled.

Varalapadi Block.

Compartment. (1)	Area and boundaries. (2)	Soil and aspect. (3)	Description of growth. (4)	Past treatment. (5)	General, (6)
11	246 acres. North—Vadasseri Estate Forest. East—Compartment —10. South—Vadaseri Estate Forests. West—Compartment 12.	Soil—Varies from a deep rich sandy loam in the south to a gravelly soil higher up on the hill sides, that on the south and east slopes being better than that on the northern, but much of it is rocky. The lower slopes are mostly free from rock. Aspect—The hill in the north of the compartment gives aspects from north to south via east and some north west aspect below the crag on the north face. The south of the compartment has no aspect. Slope—Varies from precipitous to very gentle at the south end of the compartment. Drainage—Good. Numerous deeply cut watercourses drain into the stream on the south boundary and two or three drain into the stream on the northern boundary. Outcrops—There is a precipitous crag on the upper part of the hill in the north and small outcrops are numerous on the south and east slopes of the hill.	*Coppice with standards* The crop on the upper slope of the north face of the hill is poor, mostly poor Terminalia paniculata with very little teak. Coppice is poor or absent and the stocking open. Lower down the growth improves but the stocking is open and there is a good deal of Bambusa in the half developed to the mature stage. There is some Xylia and a few Lagerstroemia lanceolala and Pterocarpus Marsupium (Venteak and Vengai). The crest of the hill is almost pure teak—rather stunted standards and coppice and also Anogeissus coppice. The stocking is open. On the south-east and east upper slopes there is a good deal of teak and also some fairly good teak coppice. The growth is not bad considering the rocky nature of the ground. There is some natural regeneration of teak. Stocking is fairly open. The height growth on the upper east slopes is not so good as the soil is very rocky and the stocking is very open. Lower down there is less teak but the stocking and height growth of the other species improve. Xylia comes in and some Largerstroemia lanceolata (Venteak) and a good deal of Grewia, both poles and coppice, but there are some poor areas and generally the coppice is miserable. There is some Bambusa in the half developed stage in patches. Teak occurs again in some quantity on the lower south slopes but is of stunted growth and mixed with Anogessus and the stocking is open. On the gently sloping ground in the south of the compartment there is some really well grown teak with a little Terminalia paniculata. Where coppice of other species occurs here it is of good growth. The stocking here is fair, teak forms an almost pure crop and shows the best growth in these forests, a considerable proportion of the teak being over 4 feet 6 inch girth. Lantana.—Traces of lantana are found in the compartment.	Coppice with standard felling— ACS. 1913-14 .. 178 1914-15 .. 68 Northern portion .. 246	Roads—An old cart track runs through the compartment. Fire lines—On the north and south boundaries respectively. The compartment lines on the east and west want clearing. Extraction is by cart tracks.

Varalapadi Block.

Compartment. (1)	Area and boundaries. (2)	Soil and aspect. (3)	Description of growth. (4)	Past treatment. (5)	General. (6)
			Coppice with standards.		
12	244 acres. North—Vadasseri estate forests. East—Compartment 11. South—Vadasseri estate forests. West—Compartment 13.	Soil.—That on the north-east face of the hill in the north west is very poor, much of it being sheet rock. In the east it is poor and shallow. The soil on the south-east slope of the hill varies from fairly deep sandy loam to poor as on the east slope. On the north-east slopes it is mostly a moderate sandy loam. In the south of the compartment the soil varies from poor, sometimes gravelly, to a good deep loam. The poor soil is worst on the south and west slopes of the small hill. In the valley between the small hill and the large one in the west, the soil has nearly all worked away and boulders thrown off the hill sides are numerous. Aspect—There are two large hills and one small one in the compartment. The aspect of the more westerly large hill is from north-east to south (via) east, that of the eastern hill from north to south (via) west. The small hill near the south has all aspects. A small portion in the south has no aspect. Slope—Very steep to gentle. Drainage—Good. Numerous watercourses in the south of the compartment drain into the stream on the south boundary. Another stream drains the valley between the two large hills into a stream on the north boundary. Outcrops—There is a large outcrop of gneissic rock on the north-east face of the hill in the north-west. Small outcrops and boulders occur pretty frequently on the slopes of the hills, some of the former being precipitous.	The crop varies enormously. In the south, where the ground is comparatively level there is an area where the growth of teak and Terminalia paniculata, though open is good. In the poorer parts of this locality the growth is much stunted and teak disappears while the undergrowth is sometimes dense. There is some poor coppice of inferior species. The growth on the western and north-western slopes of the small hill in the south is much inferior to that on the south and south-east slopes though part of the south slope is also very poor. There is much Dendrocalamus strictus in the half-developed stage. In the valley between the small hill and the larger one in the north-west the ground is densely covered with creepers and bamboo, and trees are more or less non-existent. The eastern slopes of the large hill in the north-west, except for small areas of moderate height-growth and open stocking—chiefly Xylia—are extremely poor; the upper slopes being nearly pure mature Bambusa and the lower a degenerate growth of inferior species with a dense tangled undergrowth including lantana. The growth on the south-east slope of the same hill is also poor and the stocking very open. Dendrocalamus in the seedling to half-developed stage is found on the lower slope. Climbers—A great number of climbers exist on the lower slope (east and south-east) especially on the poorer soil. The growth near the compartment line on the south slope (compartment line 12/13) shows considerable improvement and is similar to that on the lower slopes of compartment 13. The valley between the hill in the north-west and that in the north-east, including the lower slope of the latter, shows open stocking and moderate height-growth with patches of Dendrocalamus in the half-developed stage. Xylia disappears but a few moderate teak appear. The south slopes of the hill in the north-east are similar to those in compartment 11—stunted teak and Anogeissus and little or no coppice and open stocking. There is a large blank on the north-east slope of the hill in the north-west due to sheet rock and above that a moderate growth of Xylia and Bambusa in the mature stage. Coppice is poor or non-existent throughout the compartment and teak is absent except where mentioned.	Coppice with standard felling— Acs. 1914–15 .. 74 1915–16 .. 170 ——— Total .. 244 ———	Roads—One or two old cart-tracks ascend the hill sides. Fire-lines—A fire-line runs along the southern boundary and another parallel to the northern boundary for most of the way. Part of the reserve boundary on the north wants clearing and the cairns replacing. The compartment lines also want clearing. Extraction is by cart-tracks.
			Coppice with standards.		
13 ..	66 acres. East—Compartment 12. South-east and north-west—Vadasseri estate forests.	Soil.—A deep sandy loam richer on the upper than on the lower slopes especially those with an easterly or south-easterly aspect. Aspect.—From east to south-east, while a small portion at the north-east corner has a north east aspect. Slope.—Very steep. Drainage.—Good. Two or three water-courses drain to the south-east and east. Outcrops.—There are one or two small precipitous outcrops of gneissic rock.	On the lower slopes the stocking is open with a few small blanks. Coppice is negligible but there is a good deal of undergrowth including both bamboos in the half-developed stage. On the upper slopes, particularly the more easterly portions, Xylia is the chief species, in places the trees are large and well-grown and the crop has the appearance of high forest, but is very open. Lower down Grevia, Xylia, some Terminalia paniculata and Venteak are found. The stocking is rather open and height growth moderate. There are some large Bombax on the upper slopes. Mature Bambusa are found also on the upper slopes. There is some scattered rosewood in the compartment.	Coppice with standard felling— 1916–17. 51 acres The balance has not been felled—presumably the upper slopes.	Roads— Nil. Fire-lines. A fire-line runs parallel to the reserve boundary on the west The compartment line 12/13 wants clearing. Extraction is by sliding down the hill side.

Compartment. (1)	Area and Boundaries. (2)	Soil and aspect. (3)	Description of growth. (4)	Past treatment. (5)	General. (6)
Waterfall Block B.	563 acres. North—The Closed Working Circle. East—Tenkaradu Block. South—Patta lands. West—The Walayar river.	Soil.—This varies from a deep sandy loam to a poor rocky soil, the former being confined to the Walayar river valley and the Bolampatti hill slopes proper, and the latter to the rocky lower hills at the foot of the main slopes. Portions of the main slopes towards the Kuthadi Malai valley are also of poorer quality. Aspects.—Generally south—but the low foot-hills have all aspects. Slope.—Steep to level. Drainage—Good. Many water-courses drain into the plains. Outcrops.—There are several outcrops of gneissic rock.	*Natural forest.*—Teak of fairly good growth is present in some quantity especially on the better areas above the lower foot-hills A considerable variety of species is found and except on some of the poorer soil in the east the height growth is fairly good. This area has suffered in the past from illicit fellings, the species principally affected being teak The stocking is generally pretty fair but there are areas especially in the Walayar river valley where the stocking is poor. Bamboos.—Bambusa is found in the mature stage principally near the Walayar river. Dendrocalamus in the mature stage is also found but not in great abundance. In the better areas there is no undergrowth to speak of. There is some lantana.	Burnt area.—About 30 acres north of the water fall were severely damaged by fire in 1924, the tree-growth being killed. Inspection shed.—There is an inspection shed on one of the lower hills near the Walayar river. Roads.—A cart-track has been aligned up to the above inspection shed from the plains. Fire lines.—An interior fire line is burnt annually in this block from the reserve boundary in the south straight up the hill. Extraction.—A cart-road could be aligned on a gradual gradient from the foot of the Kuthadi Malai valley in the east and running west up the valley behind the inspection shed hill to the Walayar river.	
Tankaradu Block B.	1,294 acres. North—The Closed Working Circle.	Soil—Varies from moderate in the extreme west of the block to very poor and rocky.	*One hundred and eighty-eight* acres north of Tenkaradu hill on the main hill slopes and the whole of Tenkaradu hill is *Coppice with standards.*	Coppice with standard felling. On main Bolampatti hill slopes. Acs. 1916-17 .. 87 1917-18 .. 101 Total .. 188	Fire-lines—There is a fire-line on each side of Tenkaradu hill. Another fire-line runs parallel to the reserve boundary. An interior fire-line runs up the main hill slopes behind Tenkaradu hill.
	East—The Closed Working Circle.	Aspect—The main slopes have a general south aspect whilst Tenkaradu hill and the ridge joining it to the main slopes has all aspects, but chiefly north and south.	The remainder is *natural forest.* The crop is poor throughout, the best areas being in the extreme west and on the west side of Tenkaradu hill. Some miserable teak persist on the main slopes as far as the east end of Tenkaradu hill and also on the northern slope of Tenkaradu hill itself.		
	South—Sholakarai Block and patta lands. West—Waterfall Block.	Slope—The slopes vary from precipitous to steep, except for the valley between Tenkaradu hill and the Bolampatti hill slopes which is more or less level in places. Drainage—Is generally to the south, except for the valley north of Tenkaradu hill which drains to the east. Outcrops of the underlying gneissic rock are numerous.	The majority of the crop is of the scrub jungle type and deteriorates on going east. Tenkaradu hill carries a large percentage of Anogeissus. The stocking of the natural forest varies from fair, along the reserve boundary west of Tenkaradu hill, to very open. There are many blanks on the worked area on the main hill slopes; very few standards appear to have been left and the coppice is sparce, so that a dense growth of Dendrocalamus strictus in the half developed to mature stage is found. There are a few patches of better coppice growth.	Between 1917-20 coppice with standard fellings were carried out over 395 acres (Tenkaradu hill) but it is impossible to give separate areas for each year.	Extraction from Tenkaradu hill itself is an easy matter. For the exploitation of the main hill slopes it is proposed to make a cart-track leading to Vara'apadi Block from the foot of the hills west of Tenkaradu hill.

The stocking on the north side of Tenkaradu hill is very open and probably poorer than on the south side.
There is a great deal of bamboo (Dendrocalamous strictus) on the north slope of Tenkaradu hill but little on the south slope nor is bamboo prevalent on the main hill slopes except on the worked area.
Lantana is not very prevalent except on the worked area north of Tenkaradu hill.

Compartment. (1)	Area and boundaries. (2)	Soil and aspect. (3)	Description of growth. (4)	Past treatment. (5)	General. (6)
14	376 acres. North—Tenkaradu Block. East—Compartment 15. South—Compartment 16. West—Patta lands.	Soil—Mostly black cotton soil but there is a sandy loam in the north-west which becomes shallower towards the east. Aspect—Nil. Slope—Negligible. Drainage—Small water courses drain south.	*Coppice with standards.* The crop is a poor one consisting of moderately well grown to poorly grown standards of the inferior species with only a little coppice here and there. The best growth is at the western end of the compartment. Stocking of standards varies from fair in a few places to areas of almost pure bamboo in the east (Dendrocalamus half developed to mature). Generally the stocking is very poor. There is an occasional sprinkling of poor teak coppice and standards and a few very badly grown Pterocarpus Marsupium (Vengai). Bamboo—Dendrocalamus strictus in the half developed stage covers practically the whole compartment. Lantana is also abundant.	Coppice with standard felling— ACS. 1918-19 .. 96 1919-20 .. 96 1919-20 .. 45 1920-21 .. 85 322 The balance of 54 acres has apparently been worked but there is no record.	Roads—An old compartment line runs through the compartment from east to west and several sub-coupe lines also exist. Fire lines—A fire line runs part of the way down the western boundary but merges into the reserve boundary. Extraction is to the forest road on the west of Sholakarai Block.
15	320 acres. North—Tenkaradu Block. East—Patta lands. South—Compartment 17. West—Compartment 14.	Soil—Varies from a moderate sandy loam to a black cotton soil. Aspect—Nil. Slope—Nil. Drainage—Good. Two or three water courses drain to the south.	*Coppice with standards.* The crop is similar in character to that in compartment 14 but the growth is rather poorer. Teak except for a few old trees are non-existent and there is no Pterocarpus Marsupium (Vengai). There is practically no coppice in the compartment. Bamboo (Dendrocalamus half developed or mature) covers the whole compartment and there is a fair amount of lantana. In some places there are a good many climbers. Stocking is very poor.	Coppice with standard felling— ACS. 1918-19 .. 54 1919-20 .. 113 1920-21 .. 153 320	Roads—An old compartment line runs through the compartment from east to west. Fire lines—A fire line runs parallel to the reserve boundary on the east. Extraction is to any boundary.
16	270 acres, North—Compartment 14. East—Compartment 17. South—Railway line. West—Patta lands.	Soil—Varies from black cotton to a poor sandy soil. Aspect.—Nil. Slope.—Nil. Drainage.—Good	*Coppice with standards.* On the poor black cotton soil the crop is almost entirely thorn jungle, while on the more sandy type Anogeissus is the chief species. Stocking is poor, but there is a certain amount of coppice. Lantana and bamboo (Dendrocalamus in the half developed to mature stage) are prevalent. On the black cotton soil xerophytic plants form the chief undergrowth.	Coppice with standard felling— ACS. 1919-20 .. 156 1920-21 .. 114 270	Roads—Several sub-coupe lines traverse the compartment. Fire lines—Nil. Extraction is by the forest road leading to the Palghat Coimbatore road.
17	205 acres. North—Compartment 15. East—Patta lands. South—Railway line. West—Compartment 16.	Soil.—Varies from a light unfertile sandy soil to black cotton. Aspect—Nil. Slope—Nil. Drainage—Good, except for one or two places where water does not drain off at once.	*Coppice with standards.* The crop is almost identical with that in compartment 16 but in the north and north-east the growth is reduced to practically a thorny scrub with very poor stocking. Stocking in the rest of the compartment is poor but there is a certain amount of coppice. Bamboo.—(Dendrocalamus strictus in the half developed to mature stage) and lantana occur and on the poorest soil the undergrowth is largely Cassia auriculata and Acacia Farnesiana. On the eastern boundary near the railway line there is a good deal of natural teak regeneration on the reserve boundary.	Coppice with standard felling— ACS. 1920-21 .. 104 1920-21 .. 101 205	Roads—Nil Firelines—There is a fire line on the eastern boundary which unites with the reserve boundary at the railway. Extraction is by the forest road leading to the Coimbatore-Palghat road.
18	82 acres. North—Railway line. East—Patta lands. West—Patta lands.	Soil—A medium sandy loam with a few patches of black cotton soil. Aspect—Nil. Slope—Nil. Drainage—Good. Small water-courses drain to the south.	*Coppice with standards.* The crop consists of a moderate growth of inferior species with very open standard stocking. There is very little coppice. Practically the entire compartment is covered with a dense growth of Dendrocalamus in the half developed to the mature stage, together with a certain amount of lantana, particularly on the eastern boundary. Teak, Pterocarpus Marsupium (Vengai) and Rosewood show poor development. There is some mature Bambusa in the south corner.	Coppice with Standard felling— 1920-21. 82 acres.	Roads—Two old coupe lines run at right angles through the compartment. Fire lines—The northern boundary is a fire line. Extraction is by cart tracks.

APPENDIX III

CONTROL FORMS.

RECORD OF WORKS.

Pole Working Circle

Prescriptions of Working Plan.					Result of operations.						
Year. (1)	Block and compartment. (2)	Coupe. (3)	Area. (4)	Nature of work. (5)	Year. (6)	Block and compartment. (7)	Coupe. (8)	Area. (9)	Work done. (10)	Cost. (11)	Remarks. (12)
					A.—Measures prescribed.						
1927	II-8 (Part).	I	ACS. 110	Regeneration of blanks ..	1927 .	II-8 (Part).	I	ACS. 110	Heaping and burning of slash and weeds.	RS. 250	Area of blanks regenerated with teak approximately 50 per cent of whole coupe.
1927	II-8.	I	110	Weeding					Collection of stakes and pegging out area—25,000 stakes.	127½	
1927	II-11, I-6 and II-12.		657	Cleaning and climber cutting.					Nursery expenses including collection of seed.	200	
									Planting stumps at 20,000 stakes	86	
					1927 ..	II-8 (Part).	I	110	Dibbling germinating seeds at 5,000 stakes.	15	
					1927 ..	II-11, I-6 and II-12.		657	Weeding and replacing failures	225	In July, August and September 5 coolies were employed daily.
1927	II-8 (bal).	III	82	Surveying and demarcating and enumerating coupe for 1928.	1927 ..	II-8 (bal).	III	82	Cleaning and climber cutting	45	3 coolie were employed daily for 1 month in helping subordinates.
1927	I-3.		165	Replacing casualties ..	1927 ..	I-3.		165	Surveying, demarcating and enumerating coupe for 1928.	10	
									Replacing casualties	10	In June 2 coolies were employed for ten days.
					B.—Measures suggested—Nil.						
					C. Measures neither prescribed nor suggested but carried out.						
					1927 ..	III		30	Dibbling of seeds of Albizzia odoratissima teak and mahogany on area burnt in 1924.	15	VI Circle Conservator's No. M-2084/25 of 19th August 1925. Fifty per cent success in October 1927.
					A.—Measures prescribed.						
1928	II-8 (Part), II-9 (Part).	II	104 (by actual survey).	Regeneration of blanks.							
1928	II-8 (Part), II-9 (Part).	II	104	Weeding							
1928	II-8 (Part), II-13 I-1 and I-5.	I	110 488	Cleaning and climber cutting.							
1928	II-9 (Part) ..	IV	107	Surveying, demarcating and enumerating coupe for 1929.							

84, For.—12

Control Book.

Pole-working Circle.

Prescriptions of working plan.					Result of operations.							
	Locality to be exploited.					Locality exploited.						
Year.	Block and Compartment.	Coupe.	Area.	Nature of work.	Year.	Block and Compartment.	Coupe.	Area.	Work done.	Yield.	Selling price.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1927	II-t (Par) II-9 (Part)	II	Acs. 107	Simple coppice.	1927	II-8 (Part), II-9 (Part)	II	Acs. 104	Clear felling.	Contractor's figures. Timber— 35 Teak. 16 Vengai. 18 Grewia. 6 Acacia. Fuel— 98,000, St C. ft. Bamboos— 7 Cart loads.	Rs. 300 per acre Total.. 31,200	Coupe lines laid out in exact accordance with map but survey of coupe showed actual area to be only 104 acres. Estimated yield by enumeration. Timber— 50 Teak .. .. .. 605 cubic feet 17 Vengai .. .. .. 203 43 Grewia .. .. .. 390 2 Rosewood. 52 7 Acacia leucophloea. 83 Total .. 1,333
1928	II-8	III	82	Simple coppice.								Indicator Acre. 1,500 stacked cubic feet of fuel therefore estimate from 104 acres. = 1,500 × 104. = 1,56,000 st. cubic feet. Also 1 Teak—8 ,, 2 Vengai—35 ,, Total .. 43 ,,

Control Book.

Bamboo Working Circle.

Provisions of the Working Plan.			Result of prescribed operations.				
Year.	Coupe for the year and which felling series.		Year.	Area exploited and which felling series.		Yield.	Price.
	Felling Series No. 1.	Felling Series No. 2.		Felling Series No. 1.	Felling Series No. 2.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1927	Waterfall Block 563 acres.	....	1927	Waterfall Block 563 acres.	....	30 cart loads.	Rs. 1,000
..	....	Tenkaradu Block (portion due for felling 1926–1935).	..	....	Tenkaradu Block (portion due for felling 1926–1935).	3 cart loads.	40
1928	Pulampara Block.						
..	....	Balance of Tenkaradu Block and compartment 14.			Total ..	33 cart-loads.	1,040

Control Book.

Grazing Working Circle.

Year.	Area open to grazing according to prescriptions of Working Plan.	Total number of cow units actually grazed.	Revenue realized.
(1)	(2)	(3)	(4)
1927	Whole Working Plan area except compartments Nos. 3, 4, 5, 7, 8, 9 and Coupes I and II—Block IV.	400	Rs. 400
1928	Whole Working Plan area except compartments Nos. 3, 4, 5, 7, 8, 9, 10 and coupes I, II and III—Block IV.	..	..

Control Book.

Minor Produce Working Circle.

Year.	Kinds of Minor Produce collected.	Revenue realized.

APPENDIX IV.

Working Plan Map.

See pocket in cover.

Proceedings of the Chief Conservator of Forests

Proceedings No. 284, Press, 29th December 1926

Working plan (revised)—Walayar forests—Palghat division.

H. TIREMAN, Esq., C.I.E.,

Chief Conservator of Forests.

READ—the following papers:—

I

Letter from A. WIMBUSH, Esq., Conservator of Forests, III (Working Plans) Circle, Ootacamund, to the Chief Conservator of Forests, Madras (through the Conservator of Forests, VI Circle, Ootacamund), dated the 23rd September 1926, No. A. 9/25.

[Revised working plan—Walayar forests—Palghat division—By Mr. Hicks.]

I send herewith for sanction the revised Working Plan for the Walayar forests of the Palghat division prepared by Mr. Hicks.

A map, 4 inches to 1 mile, on tracing cloth accompanies the Working Plan.

2. The Collector of Malabar, who was referred to regarding the question of grazing and the requirements of the local people, states in his No. L. Dis. 31/26, dated 13th February 1926, that he has no changes to suggest in the provisions already made for grazing and that no special provisions are necessary as regards the local requirements in timber, fuel and manure leaves.

3. In my No. A. 9/25, dated 14th December 1925, I asked the Collector of Coimbatore to record his opinion and wishes, if any, on the same subjects. I find that no reply appears to have been received from him. I will send him a reminder at once and will let you know if he has any special wishes to record, which seems unlikely.

4 I request that the Working Plan may be printed on good paper inside a stout cover with a pocket in it, in which a printed copy of the map should be put.

5. Two typed copies of the Working Plan and two copies of the map are being sent to the District Forest Officer, Palghat, for his own use and that of his Ranger until the printed copies are ready.

Endorsement No. 1916/23, *dated* 20*th October* 1926, *from the Conservator of Forests, VI Circle, to the Chief Conservator of Forests, Madras, on the Working Plan Conservator's No. A.* 9/26, *dated* 23*rd September* 1926.

[Revised working plan—Walayar forests—Palghat division.]

Forwarded. I have no remarks to offer.

K. T. MATTHEW,
for *Acting Conservator of Forests, Sixth Circle.*

II

Proceedings of the Chief Conservator of Forests, L. Dis. No. 8180/26, dated the 15th November 1926.

H. Tireman, Esq., C.I.E.,
Chief Conservator of Forests.

Read—the following paper :—

Endorsement of the Conservator of Forests, III Working Plans Circle, No. 1916/23, dated 20th October 1925.

Proceedings—L. Dis. 8180/26, *dated the* 15*th November* 1926.

[Revised working plan—Walayar forests—Palghat division—By Mr. Hicks.]

The only criticisms which I have to make are—

(1) *Chapter II—Sections* 15 *and* 16.—Only one weeding is prescribed. I very much doubt this being sufficient and think that possibly three weedings may be needed in the first year and at least one in the second year in addition to the cleaning prescribed in that year. It may be intended to leave this matter to the discretion of the District Forest Officer but if that is the case it should be made clear. As the Plan stands no weedings other than that prescribed for the first year can be done without altering the prescriptions, and as this requires a reference to the Chief Conservator, there will always be a danger that a necessary weeding will be left undone.

(2) *Section* 21.—There is surely some mistake in the calculation of the area of the nursery. One acre at 6 inches × 6 inches would hold 174,240 plants.

(3) *Chapter IV.*—More definite prescriptions are required regarding the method of executing the fellings. Is it intended to allow whole clumps to be felled ?

2. The working plan is returned for revision on the lines indicated above.

To the Conservator of Forests, III Working Plan Circle.

III

Letter from A. Wimbush, Esq., Conservator of Forests, III (Working Plans) Circle, Ootacamund, to the Chief Conservator of Forests, Madras, dated 26th November 1926, No. A. 9/25.

[*Reference.*—No. L. Dis. 8180/26, dated 15th November 1926—Revised working plan—Walayar forests—Palghat division—By Mr. Hicks.]

Your paragraph 1–(1)—*Weeding.*—In the absence of exact knowledge as to how much weeding would be necessary we were anxious not to make prescriptions which would lead automatically to the submission of estimates, and to consequent expenditure, which might possibly not be essential.

As the original prescriptions stand, there will be a weeding between June and September and a cleaning in September—October of the first year. This second operation, from the wording of paragraph 197, is intended to result in the complete freeing, for a second time, of the teak stumps.

It is, however, advisable definitely to authorize the District Forest Officer to carry out additional weedings if necessary. To this end I have made an addition, in pencil, to paragraph 196. If it meets with your approval it may stand and be inked in in your office.

2. *Your paragraph* 1 (2)—*Nursery.*—I felt that the Working Plans Officer was providing for a very big nursery. However, the Working Plans Officer estimates that 43,175 stumps may be needed annually. In paragraph 210 it is pointed out that plants for use in two successive years will be in the nursery at the same time. This makes 43,175 × 2=86,350 plants. Nothing like the whole of a nursery is covered with plants 6 inches × 6 inches owing to the paths, tool shed, seed beds, etc., taking up a lot of the space. I do not suppose that these accessories really take up 50 per cent of the total space but if they did an acre would be just about the right total size.

I decided to leave the Working Plans Officer's figure and I think that it may be allowed to stand.

3. *Your paragraph* 1 (3)—*Bamboos.*—I agree that there is a definite omission in the Working Plan here.

In more than one Working Plan I have had to decide whether it is essential to give, at great length, all the felling rules, whether for coppice or bamboos.

I have come to the conclusion that, since printed contract agreement forms in which minute details on this subject are given, have been in force in most districts for years past, it is sufficient simply to prescribe in the Working Plans that fellings shall be done in accordance with the terms of the agreements in force in the district.

I have now added, in pencil, to paragraph 246 a prescription on the above lines which is similar to that which I have made in the Bolampatti Plan. If you think that this will suffice, the pencil entry may be inked in in your office.

4. The Working Plan is resubmitted.

Proceedings—No. 284, Press, dated 29th December 1926.

Sanctioned.

H. TIREMAN,
Chief Conservator of Forests.

(True copy)

C. SHELSWELL,
Personal Assistant.

To the Conservator of Forests, III (Working Plans) Circle.
Copy to other Conservators and District Forest Officers.
" the Principal, Forest College.
" Forest Research Officer.