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ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE
FOREST YEAR ENDING 30TH JUNE 1919.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

Reserved forests.—The total area decreased from 4,658 to 4,621 square miles, the decrease being due chiefly to the disafforestation of forests for the improvement of boundaries and for cultivation. Northern Circle.

Reserved lands.—Two square miles consisting of enclosures in reserved forests in Ganjam, 56 square miles of Cherla block in Gōdāvari Upper, and 12 of the Rampa forests in Gōdāvari Lower were added; ten acres in Gōdāvari Lower were transferred to the salt department and 19 in Kistna alienated for industrial concern. The net area at the end of the year was 491 square miles; of which, two are leased forests and about one square mile notified under section 36 of the Forest Act which will not be constituted reserved forests.

Further reservation.—As the protection of the large extent of unreserved lands in Ganjam was difficult owing to their situation, it was decided to reserve some of the valuable Sāl areas and their selection for reservation was in progress.

Rampa forests in the Gōdāvari Agency.—Four of the 21 blocks proposed for reservation in Rampa were notified under section 4 of the Forest Act. There was no progress with regard to the survey and demarcation of fifteen blocks already selected and the selection and perambulation of two additional blocks. The question of appointing a special officer with the required establishment to complete the reservation was pending the orders of the Government.

2. *Reserved forests.*—The area at the end of the year was 5,714 square miles against 5,722 at the beginning as detailed in Form No. 65. One thousand two hundred and twenty-one acres were transferred from reserved lands and 5,726 acres disafforested. Central Circle

Reserved lands.—The area of the Sandur leased forests (40,000 acres) was handed back to the Darbar on 1st July 1918 and 7,324 acres were notified as reserved lands.

The total area of the reserved forests and reserved lands at the close of the year was 5,734 square miles against 5,795 square miles of the previous year.

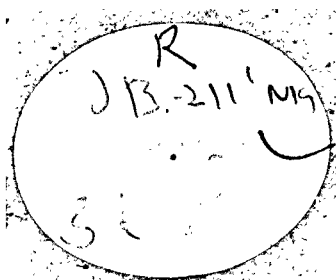
3. *Reserved forests.*—Additions were 1,906 acres transferred from reserved lands and five acres by adopting the area calculated by the Survey of India in Trichinopoly. Twenty-nine thousand four hundred and eighty-two acres were disafforested and 24,970 acres were deducted in Trichinopoly so that the areas calculated by the Survey of India might be adopted—a scrutiny of the old records shows that in former times an allowance of one-third was added in some instances because the ground was hilly. Southern Circle.

Reserved lands.—Four hundred and fifty acres were notified as reserved lands.

The total area of the reserved forests and reserved lands at the close of the year was 4,308 square miles against 4,293 square miles of the previous year.

4. *Reserved forests.*—The area of the reserved forests at the end of the year was 4,134 square miles against 4,133 at the commencement. Five small areas covering 1,038 acres were transferred from reserved lands. Fifty-one acres were disafforested and 172 acres wrongly included in previous years were excluded according to the revised boundary description recently published in the Fort St. George Gazette. Western Circle.

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Reserved lands.—Ninety-two acres of unreserved lands were added. One thousand and thirty-eight acres were transferred to reserved forests and 48 acres were excluded from reservation at the settlement. The area at the close of the year was 104 square miles, of which 96 are leased forests in *South Malabar* and *Nilgiris* and 45, 'Todapatta lands' in the latter division.

2. FOREST SETTLEMENT.

Northern Circle.

5. Three blocks of 418 square miles remained to be settled at the commencement of the year; eight blocks of about 2 square miles in *Ganjām*, one in each of *Vizagapatam* (6 acres) and *Gōdāvari Upper* (56 square miles) and four of 12 square miles in *Gōdāvari Lower* were added during the year. None of the blocks were transferred to reserved forests, but the settlement of four of these was practically completed.

Central Circle.

6. Two blocks in *West Cuddapah*, twelve in *Nellore* and three in *Chittoor* were finally settled; twenty blocks were pending final settlement and eighteen blocks are undergoing settlement as detailed in Form No. 66. The total cost of the settlement was Rs. 1,830.

Southern Circle.

7. One block in *North Vellore*, one in *South Vellore*, two in *Trichinopoly* and one in *Madura* were finally settled. Twenty-two blocks are pending final settlement and are detailed in Form No. 66. The total cost of settlement was Rs. 1,494.

Western Circle.

8. Eight blocks of 4.23 square miles remained to be settled at the commencement of the year; three blocks in *Mangalore North* and 3 in *Central Coimbatore* (0.141 square mile) were brought under settlement. Five of these blocks (one in *North Malabar*, one in *South Malabar*, one in the *Nilgiris* and two in *North Coimbatore*) aggregating 1.602 square miles were finally settled and transferred to reserved forests.

Of the rest, the settlement of the two blocks (2.35 square miles) in the *Nilgiris*, one block (0.001 square mile) in *Central Coimbatore* and one block (0.198 square mile) in *North Coimbatore* was completed during the year; but notification under section 16 had not been published at the close of the year.

3. DEMARCATION.

Northern Circle.

9. *New boundaries.*—Three miles in *Gōdāvari Upper*, fourteen in *Kurnool East* and one mile in *Kurnool West* were demarcated at a total cost of Rs. 360.

Old boundaries.—4,558 miles are reported to have been cleared and maintained during the year by subordinates free of cost. Seven miles in *Ganjām* were recleared at a cost of Rs. 81; the boundaries of coupes according to the new working plan were demarcated permanently and a sum of Rs. 600 was spent. Twenty-four miles in *Vizagapatam* and 100 miles in *Kurnool West* were rectified and repaired and 52 miles in *Kistna* were surveyed as a preliminary to rectifying the demarcation; the expenditure incurred was Rs. 112, Rs. 397 and Rs. 228 respectively. The expenditure in *Kistna* rose from Rs. 0-14-2 to Rs. 4-6-2 per mile and the increased rate is partly attributed to the enhanced rate of wages owing to scarcity of labourers and to the dearness of food-stuffs. In *Kurnool West*, eight miles of frontier boundary adjoining Banganapalle Estate was recut and repaired at a cost of Rs. 59 met from political funds. The total length of finally notified boundaries at the end of the year was 6,266 miles, of which 5,756 miles were demarcated and 486 miles do not require artificial demarcation.

Preliminary demarcation.—In *Gōdāvari Lower*, the boundary of Coringa extension was recleared, and five miles thereof widened, and the boundaries of three blocks totalling 29 miles in *Rampa* were surveyed and demarcated; the total expenditure incurred was Rs. 645.

In *Gōdāvari Upper*, a sum of Rs. 958 was spent in maintaining 226 miles of boundaries between the zamindari and unreserved lands.

Central Circle.

20. Twenty-six miles were newly demarcated in *Bellary* at a cost of Rs. 1,003, about three and a half miles in *Chingleput* at a cost of Rs. 177 and one and three-fourth miles in *Chittoor* at a cost of Rs. 56; Rs. 487 were spent in *Anantapur* in repairing boundary lines for a distance of 54 miles and constructing 257 new cairns

and repairing 4,463 old ones; Rs. 243 were spent in *Guntur* on cutting and chiselling letters R. F. on 243 demarcation stones. A sum of Rs. 168 was spent in *North Cuddapah*, in repairing and improving the permanent demarcation of a reserve; a sum of Rs. 809 was spent in *Nellore* on repairing and improving existing boundaries already demarcated and for permanently demarcating 15 miles with a lockspit and round and with solid stone slabs enclosed in cairns at the corners. About 21 miles in *Chittoor* district were permanently demarcated by cairns and lockspitting or stone lining at a cost of Rs. 724. A sum of Rs. 203 was spent in *Chingleput* for white-washing and tar-numbering the boundary stones and cutting growth in reserves.

11. Final demarcation was carried out in *North Salem*, *Trichinopoly* and *Madura* over a length of 23, 1, 23 miles respectively. In *North Vellore* 37 miles of compartment lines were demarcated with cleared lines and stone slabs at a cost of Rs. 301.

In *West Vellore* 163 miles of enclosure lines round Malaiyali villages on the savadis were recleared at a cost of Rs. 240 and Rs. 119 was spent on cutting lines and erecting cairns in the work of the delimitation of the hill villages in the savadis. In *North Salem* Rs. 275 was spent on the demarcation of Marandahalli extension block, widening the boundary line of Bommiampatti reserve and on the demarcation of sandal areas proposed for reservation. In *South Salem* Rs. 369 has been spent on cutting and clearing lines and buildings cairns. In *Madura* Rs. 1,295 was spent from political funds for reclearing the *Madura-Travancore* boundary for a length of fifty miles. Of the total length of 6,854 miles of old boundaries repaired during the year 3,581 miles are reported to have been cleared free of cost by subordinates.

12. *New boundaries.*—Eleven miles and two furlongs in *North Malabar* and eleven miles in the *Nilgiris* were newly demarcated at a cost of Rs. 1,617; the average cost per mile of forest demarcation came to Rs. 74 against Rs. 98-1-9 in the previous year.

Old boundaries.—Eight hundred and fifty miles of old boundaries were repaired during the year. Of these, 498 miles were cleared by subordinates free of cost in *North Malabar*, the *Nilgiris*, *North*, *Central* and *South Coimbatore*. In the *Nilgiris* the question of demarcating the authorized Irula settlements in Hulikal and other reserved forests, which had been pending for more than six years, was taken up and nine Irula settlements were surveyed in the year and their boundaries demarcated.

The average cost per mile of repairs to boundaries was Rs. 35-1-3 against Rs. 37-15-5 in the previous year.

The total length of the boundaries at the close of the year was 8,056 miles of which 6,763 miles were demarcated and 892 do not require artificial demarcation. There remained thus at the close of the year 361 miles still to be demarcated, 222 being in *Kollegal*.

4. FOREST SURVEYS.

(a) By the Survey of India Party.

13. No survey was undertaken.

(b) Local Surveys.

The works carried out by the surveyors employed by the department were—*Northern Circle.* the survey of the areas under working plans in *Ganjām* and *Vizagapatam*, the preparation of plans and sections for 41 miles of ghat roads and rectification of the preliminary demarcation of Cherla block in *Gōdāvari Upper*, the subdivision of the hill and plain areas covered by the preliminary working plans for *Peddapur* and *Gokavaram* ranges, the survey of the common boundary between *Coringa* reserved forest and its extension, the verification of the boundaries of four reserved forests and the demarcation of 26 coupes in *Gōdāvari Lower*, the survey of the boundaries of two reserved forests in *Kistna* and the alignment of cart-tracks, bridle-paths and roads in *Kurnool East* and *West*.

(c) Maps.

Reference maps under section 80 of the Madras Forest Code.—In *Ganjām*, the district reference map alone was maintained. The reference maps are reported to have been maintained and posted in the other divisions with the exception of the range reference maps in *Kistna*.

Special district reference maps.—None of the maps prepared by the late Forest Map Officer were printed and published. The proofs of the maps for *Ganjām* and the *Kurnools* have been prepared and verified; the publication of the final copies was pending in the Forest Map office at Dehra Dun.

(a) *By the Survey of India Party.*

Central
Circle.

14. The party continued its operations in *Nellore* district. 11,684 square miles were surveyed on the 2" scale. No survey was undertaken by the party in any other districts of the circle.

(b) *By the Madras Survey Party.*

No survey was undertaken during the year.

(c) *By Departmental Surveys.*

Survey of coupes, verification and rectification of boundaries, alignment of roads and preparation of coupe, working plan and fire maps were as usual done by the departmental staff. The survey of the disputed portion of the Seshachellam Extension A Reserve in the limits of Srinivasapuram Agraharam in *South Cuddapah* district was done by the Land Records Tahsildar of the district under the orders of the Collector.

(d) *Maps.*

The reference maps referred to in section 80 of the Forest Code are reported to have been maintained and posted in all districts.

By the Survey of India Party.

Southern
Circle.

15. No survey work was undertaken.

By Madras Survey Party.

Nothing was done.

By Departmental Survey.

All coupes were surveyed by ordinary staff except in *North and South Salem* where survey work was done by Special Surveyor and in *Madura*, in the *Sholavandan* Range where the work was done by a Supervisor.

Maps.

Reference maps referred to in section 80 of the Forest Code.—These are reported to have been maintained in all districts.

(a) *By the Survey of India Party.*

Western
Circle.

16. Nil.

(b) *Local Surveys.*

In the *Nilgiris* the Forest Surveyor surveyed the Irula settlements in *Coonoor* Range. The other survey work done consisted of departmental surveys of coupes in *South Malabar*, both *Mangalore* divisions and all four *Coimbatore* divisions.

(c) *Maps.*

Reference map under section 80 of the *Madras Forest Code*.—These are reported to have been maintained and posted up to the end of the year.

Special District Reference Maps.—These maps have been printed and published by the Forest Map Office, Dehra Dun, for all the divisions except *North Malabar*, the map of which is reported to be in the Press.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

I. REGULATION OF MANAGEMENT.

(a) *Preparation and control of regular working-plans.*

Northern
Circle.

17. *Preparation.*—Form 69 shows that working-plans for 2,738 square miles have been completed and approved. This extent includes the areas for which only preliminary working-plans and tentative working schemes have been sanctioned for

short periods. They have been taken into account, because such plans had the approval of the Board of Revenue. Regular working plans exist only for 864 square miles.

Ganjām.—Mr. Minchin completed the working-plan for the plains *sāl* forest and it is awaiting sanction. The plan for the hill forests is under preparation. *Vizagapatam.*—A plan for eight reserved forests in *Sarvasidhi* range was taken up and compiled and statistics were collected for the preparation of another plan for some of the fuel forests in *Palkonda* range. *Gōdāvari Lower.*—A tentative working-plan for the forests of *Rajahmundry* range (38 square miles) was sanctioned by the Board. *Kistna.*—The working-plan for the forests of *Bandar* range covering 92 square miles was sanctioned.

18. *Revision.*—A revised working-plan for *Peddapalli* reserved forest in *Vizagapatam* was prepared, but has not yet been sanctioned. It was decided to prepare working schemes to supplement the plans for the forests of *Bezpada* and *Ellore* ranges and for *Kondapalli* reserved forest in *Kistna* and the District Forest Officer was instructed accordingly. The schemes are being prepared.

19. *Control.*—Three fuel coupes in *Kistna* and the timber coupes on the *Nallamalais* prescribed for improvement felling in *Kurnool West* were not worked for want of demand. The construction of stone wall round fuel coupes on the *Yerramalais* in the latter division was not taken up for want of funds.

20. *Preliminary working-plan reports—Ganjām.*—*Kepati sāl* and *Tiliki bamboo* coupes were not worked for want of demand. Six fuel, five charcoal and two bamboo coupes not prescribed in the interim plan were worked to meet the local demand. A culvert in *Osorobondho-Minajadi* road, Deputy Ranger's quarters at *Osorobondho*, and kitchens for the range quarters at *Kukuluba* and *Bontha* which were not provided in plan were constructed. *Gōdāvari Upper.*—The unreserved lands in this division are under the control of the department. Working schemes for felling *Yepi* trees from about eight square miles of unreserved lands in *Bhadrachalam* taluk and mature trees from the same lands in *Nugur* and *Cherla* ranges were sanctioned by the Conservator. *Gōdāvari Lower.*—A preliminary working-plan for 70 square miles of forests in *Polavaram* range was sanctioned tentatively by the Conservator for two years. Three fuel and one bamboo coupes in *Peddapur* range were not worked for want of demand. *Kurnool East.*—The collection of minor produce which is not provided in the plan for *Gudem* range was undertaken to provide labour for the *Chenchus*. The roads and buildings provided in the plan were not constructed owing to financial stress. *Kurnool South.*—Some of the fellings according to the prescriptions of the preliminary working-plans for *Chelama* and *Sirvel* working circles and *Giddalore* range had to be set aside to facilitate the collection of hay by the Military department. Five fuel coupes covering an area of 1,037 acres in the grazing area of *Sirvel* working circle were felled; this felling is not provided in the plan. The periods prescribed for these plans having expired the District Forest Officer was instructed to prepare supplemental schemes.

21. *Preparation.*—In *Bellary* a simple working-plan for those areas in which *Central* fuel coupes are being worked annually is under preparation by the District Forest Officer; no progress has been made in revising the plan for the *Daroji* tank bed returned for revision. In *Guntūr* a preliminary working-plan for the forests of *Repalli* taluk was sanctioned by the Conservator during the year to be put into force from 1st April 1919; the working scheme and plans for certain forests of *Vinukonda* range were returned to the District Forest Officer for preparing a new working-plan in the light of the remarks made in the Inspection notes of 1st February 1919. In *North Cuddapah* preparation of no new working-plan was undertaken but proposals for the redistribution of certain coupes in *Lankamalais* fuel working circle of *Badvel* range sanctioned in Board's Proceedings Forest No. 140, dated 27th July 1908 were submitted for sanction and are pending with the Chief Conservator; the preliminary working-plan for fuel and bamboo working circles in *Lankamalais* returned for revision has been received and is pending inspection of forests by the Conservator. In *Nellore*, revised working-plans for the forests in *Nellore* and *Kavali* ranges comprising an area of 153 square miles have been received and are pending inspection by the Conservator. The working scheme for supply of fuel to *Atmakur* town was cancelled as there was no demand for the last three years. In *Chingleput*, the tentative

working-plan for the reserves of Tiruvallur range was finally sanctioned by the Board in Board's Proceedings Forest No. 4, dated 21st January 1919. In *Chittoor* a tentative working scheme for the Horsleykonda Reserved Forest prepared by Mr. C. C. Wilson was sanctioned by the Conservator; no other plans were prepared during the year. Plans are urgently required in place of those cancelled in previous years in *Chamala*, *Chendragiri*, *Chittoor* and *Palmaner* ranges; but owing to changes of officers and the want of a working plan officer, no progress was made during the year.

22. *Control—Bellary*.—Three coupes in Adoni working-plan and seven coupes in Harpanahalli working-plan sold during 1917-18 were fully worked during the year under report. On account of the great scarcity of fodder due to want of rain the protection working circle was opened to grazing on permit, and free removal of fodder grass was also allowed. The period of grazing which was limited to six months (from July to December) in the grazing working circle of the Harpanahalli working-plan was extended to 30th June 1919. *Anantapur*.—The prescriptions of the working-plans have been deviated from for many years past and sanction of the Board was obtained in Board's Proceedings Forest Mis. No. 116, dated 14th February 1919 for cancellation of many of the prescriptions. *Guntur*.—Two coupes in Tadepalli and Takkellapad were sold; the prescriptions of the working-plan for Kondavid reserve were not put into force as none of the coupes were sold for want of demand. Those for Kolakalur, Lam and Kuragallu reserves were not adhered to as the Board approved of the disafforestation of the reserves for assignment of land to sepoys. *North Cuddapah*.—The tentative scheme sanctioned for Kalasapad fuel series was adhered to. Three fuel coupes in the Lankamalais and three in the Nallamalais of Vonipenta Range for which no working-plans were sanctioned were leased out during the year. *South Cuddapah*.—Ten arrear coupes which were not sold in previous years for want of demand were sold during the year. *West Cuddapah*.—The prescriptions of the working-plans were generally adhered to in respect of Red Sanders area of the Sidhout Palakondas and fuel areas of Kanamalopalle and Konarajupalle Reserved Forests and Idupulapaya palmyra plantations. *Nellore*.—Four coupes were not sold for want of demand. *Chingleput*.—Eleven coupes were not worked for want of demand, two coupes were felled in advance to undertake supply of *Anogeissus* leaves and bark to Controller of Tanning Stuffs and of firewood of *Anogeissus latifolia* to the Conjeeveram Municipality. Some of the kanchas aggregating 8,873.65 acres were not sold for want of demand and they were effectively kept closed; some of the hill areas of Chingleput and Sriperumbudur ranges were opened to grazing for want of sufficient grazing grounds in the neighbouring villages. Sonallur working circle which was selected to be worked primarily for the production of good pasture is now being worked for fuel and the Board has sanctioned the proposal to exchange it with the Appur Working Circle where the demand for grazing is keen and the growing stock poor. The Thandrai and Alamathi reserves which were to be worked solely for manure leaf cutting were sold as kanchas as the experiment of working the reserves for manure leaves proved a failure. *Chittoor*.—In the Gadipenta timber series of Mamandur working-plan, no coupes were sold for want of demand. Numbers 2 to 5 were not completely felled owing to the difficulty experienced by contractors in getting coolies. Neither cleanings nor thinnings prescribed in Mamandur working-plan were carried out as these operations were not considered necessary.

23. Little progress was made in the preparation of new working plans as the Special Working Plans Officer who was working in the *Tinnevely district* was taken off the work owing to the general shortage in the superior staff. During the year, however, schemes for working the bamboo areas in *South Salem* and *Trichinopoly* were prepared and sanctioned, and in *South Vellore* a revised working-plan for bamboo areas was prepared and submitted for approval; in *North Vellore* and *West Vellore* also steps were taken for the revision of the working plans for such areas. In *South Arcot* a scheme for working the fuel forests of the Kallakurichi range for a period of five years was sanctioned during the year and statistics for a similar scheme for the forests in Gingee range were collected. The working plan of Vaiyampatti range in *Trichinopoly* was replaced by a scheme sanctioned by the Board. In *Tinnevely* a revised working plan for the Tirukurangudi working circle and a new working-plan for the Vadagarai Melpidagai and Kilpidagai reserves prepared by the District Forest Officer, *Tinnevely*, were sanctioned.

24. *Control*.—Work was regularly controlled under the sandalwood working plans of all the divisions but in the Javadis where the work is permanently one year behind-hand on account of deviations rendered necessary by the cyclone of 1916. Regeneration operations could not be carried out in *North Salem* owing to exceptionally bad season and want of trained staff. The *Madura* fuel working plan also was controlled but fellings in two series of Sholavandan Range had to be postponed pending construction of an export road from Rajadani to Usilampatty the estimate for which has been received; a few coupes in the Ayyalur and Nattam Ranges were not sold for want of demand.

In the three divisions of *Vellore* and in the Musiri range in *Trichinopoly*, large *Western* numbers of fuel coupes could not be worked either for want of demand or inaccessibility: the growth in many cases is very poor. Prescriptions of the working plans could not be adhered to in *South Arcot* on account of classification of reserves and introduction of five years' scheme of sale of growth.

In *North* and *South Salem*, the working plans require revision as conditions have changed since they were written.

25. *Preliminary working plan reports*.—Nil.

26. *Preparation*.—*Mangalore South*.—The preparation of a working plan for Nerankimale reserve is pending completion. *North Coimbatore*.—Two working-plans for fuel forests and one for a small teak plantation, were prepared; they await the personal inspection of the Conservator.

27. *Revision*.—The revision of the working plan for Begur forests in *North Malabar* was completed and is under the Conservator's consideration. The revision of the Chedleth working plan was begun, but work was stopped owing to lack of officers. In *South Malabar* the preparation of a revised working plan for the teak plantations and the adjoining natural forests was completed, and awaits the supply of maps. In *Central Coimbatore* the revision of Chinnar working plan entrusted to the Madras Forest College staff, is pending completion. *South Coimbatore* The revised working plan for the Mount Stuart and Tekkadi leased forests prepared by Mr. H. F. A. Wood was sanctioned during the year. The revision of the Amaravathi working plan was begun and was almost completed.

28. *Control*.—The prescriptions of the working plans were generally adhered to. The deviations were chiefly cases of postponing working in a compartment owing to the work in an earlier compartment not having been completed in the previous year. The only important deviations were the execution of works prescribed in the new Nilambur working plan in anticipation of its publication, and failure to carry out fellings prescribed in the new Mount Stuart working plan owing to the accumulation of large stocks of timber felled in previous years.

29. No preliminary working plan reports were prepared.

30. *Annual plan of operations*.—The important deviations besides those detailed in paragraphs 19 and 20 supra, were—*Ganjām*.—Inspection sheds at Manitarā, quarters for the Ranger, Mojjagoda, and sinking of a well at Budaguda were not taken up for want of funds. A well in the compound of the rest house at Kriamba was not sunk as it was not immediately required. Kitchen for the range quarters at Russellkonda not provided in the plan was constructed being required urgently. *Vizagapatam*.—A cart-track in Peddapalli west working circle was not constructed pending revision of the working plan. The quarters for the subordinates at Bodapalem were not constructed pending selection of a suitable site. The demarcation of Sarugudu block not provided in the plan was carried out. *Gōdāvari Upper*.—The construction of Timmuleru Somanamalla ghat road was postponed for want of a proper estimate. The demarcation of Dhanukonda extension could not be completed owing to low rates allowed in the estimate. *Gōdāvari Lower*.—Construction of a road from Kannapuram to Puliramudugudem, Deputy Ranger's quarters at Mulagalampalli and Tanna buildings at the anicut head lock and sinking of wells at Mallavaram and Vecrabhadrapuram were not executed owing to financial stress. *Kistna*.—There was no progress on the Yagaram—Ramasingavaram road pending the revision of the estimate. *Kurnool South*.—The construction of new roads, repairs to-existing

Southern Circle.

Northern Circle.

roads and buildings and sinking wells in Gundlakamma and Giddalore ranges were not undertaken owing to frequent changes among subordinates consequent on ill health which also affected labour considerably. *Kurnool West*.—The repairs to the rest house at Gazulapalli and construction of an inspection shed at Honkaram were given up as they were not absolutely necessary. Improvement to Pecheruvu-Munimadugulu cart-track was dropped as a new one from Pecheruvu to Indreswaram was proposed and aligned.

Central
Circle.

31. Besides the deviations mentioned in paragraph 22 supra, the only other important deviations were:—*Bellary*.—Ten coupes were not sold for want of demand. Repairs to a cart-track and a bungalow were not undertaken on account of the Sandur forests having been handed over to the Darbar; and the permanent demarcation of Sogi reserve was not taken up as there was no quarry near the reserve. The permanent demarcation of Rayadrug frontier line which was an incomplete work of 1917-18 and renewed in 1918-19 was not undertaken owing to a dispute in the boundary between the British and Mysore State not having been settled. *Anantapur*.—Hay operations were given up under orders and only the balance of the previous year was dealt with during the year under report. *Guntur*.—Out of 40 coupes notified for sale, only 19 were sold and the remainder were not sold for want of demand; many works proposed in the plan of operations were given up on account of financial stress. *North Cuddapah*.—Two timber coupes and four fuel coupes were not sold for want of demand; four road works and three building works were not taken up on account of financial stress. *South Cuddapah*.—Metalling two miles of Kodur-Kodivengammabhavi road, construction of five bridle-paths and 2 cart-tracks, construction of an inspection bungalow, an inspection shed, range office, range quarters, and subordinate's quarters, sinking of a draw well and permanent demarcation of two reserves were postponed on account of financial stress. *West Cuddapah*.—The following works could not be taken up for want of labour and funds. Construction of four roads, four cart-tracks and a bridle-path, one inspection shed, one rest-house, a range office, range quarters, and six subordinates quarters, sinking of a well in Mudampad resthouse, bunding of streams, walling of improvement coupes in Cuddapah range and permanent demarcation of Ganganapalle and extension, Kanakalakonda reserve and Idupulapaya extension. *Nellore*.—Construction of a road, two inspection sheds and a guard shed and permanent demarcation of a reserve were postponed for want of funds. Construction of a range office and quarters at Kavali was not taken up owing to the site not having been settled and sinking a well in the compound of Dachur resthouse was abandoned on account of the proposal to acquire a private well close by. The casuarina plantations in the coast range were not sold as the bids offered were very low. *Chingleput*.—The balance of notified areas in 15 coupes at the close of the year 1917-18 was about equal to half the area of the annual coupes; of these 15 arrear coupes, 10 were sold during the year and the remaining four were worked departmentally as instructed by the Conservator in his inspection notes. Removal of prickly-pear, hantana and thorny species, from Guindy Park reserved forest was not undertaken as the working plan was cancelled in B.P. Forest No. 20, Mis., dated 19th January 1918, and none of the works of permanent demarcation of reserves sanctioned in the plan of operations were undertaken, as in accordance with the sanctioned working plan the outer boundary of each reserve wherever the annual coupe touches it, is being permanently demarcated. *Chittoor*.—Nine coupes were not sold and repairs to two bridle-paths, three resthouses and a well were not carried out as they were not needed.

Southern
Circle.

32. The sanctioned plan was generally adhered to. Building works on the Javadis and Pachamalais could not be completed on account of the difficulty of obtaining skilled labour. The chief deviations were the non-construction of a rest-house in *North Vellore* due to non-acquisition of the site and the postponement of boring operations at Nadanur in *South Vellore* and the construction of a tube well there in the absence of a power drill as borings made with the hand-boring set proved a failure. Residential buildings for the newly created Sholavandan range in *Madura* not provided for in the plan of operations were constructed. As a war measure tanning barks and shumac (leaves of *Anogeissus*) were collected and supplied from *North* and *South*, and *West Vellore* and *Madura* districts.

FOREST DEPARTMENT

33. These were more or less generally adhered to. Deviations were chiefly *Western* cases of postponing works for lack of funds or labour, or in favour of other works of greater urgency previously unforeseen. The more important of such cases were felling and extraction of timber for the Munitions Board.

2. COMMUNICATIONS AND BUILDINGS.

(a) Roads and Bridges.

34. The total expenditure incurred was Rs. 16,073 against Rs. 21,970 in *North* 1917-18; about 23 miles of new roads including bridges were constructed at a cost of Rs. 8,442 while 284 miles of existing roads and bridle paths were kept in repair at a cost of Rs. 7,631. The important new works of the year were the construction of four miles of cart-tracks and two Irish bridges on Tarasingi-Kukuluba road in *Ganjām*, 2 miles 7 furlongs of Kondasanta-Tadaparti road in *Visagapatam*. Eleven miles of cart-tracks and 5 miles of Regumanipenta-Narthadikala ghat road in *Kurnool East*.

35. The total expenditure on new works amounted to Rs. 7,404 and on repairs *Central* to Rs. 5,166, as compared with Rs. 10,780 and 6,319 in the previous year; the *Circle* decrease was due to financial stringency on account of war, only absolutely essential works having been carried out. The bulk of this expenditure was incurred in *South* and *West Cuddapah* and *Chittoor*.

The principal new works were in *South Cuddapah* (1) a cart-track to join the Kodur range boundary with the cart-track from Thummalabylu (6 miles), (2) formation of a cart-track from Arimanipenta to Bodeddulahavi (8 miles), (3) extending Kondur-Marlabylu bridle-path (2½ miles), in *West Cuddapah* (1) conversion of bridlepath from Palakonda to Sandramanipenta into a cart-track (½ mile), (2) construction of a road from Ganganapalle to Poluthula (1½ miles), (3) construction of Korthimadugu-Ankamadugu road (1½ miles), (4) construction of the remaining portion of Kondagorlapenta cart-track (3 miles), (5) construction of cart-track from Mallelamma Devalam to Nandalur Railway station (1½ miles), (6) diversion of Korthimadugu road (1½ miles), in *Chingleput* construction of three culverts in Guindy Park. In *Chittoor* (1) Nagapatla-Pulibone road (3¼ miles), (2) Pulithula Chatram road (½ mile), (3) road in coupe No. IX of Kalroadpalle (¾ mile), (4) Nagapatla-Bhakarapet road (3½ miles).

36. *Tramways*.—The laying of temporary tram lines in connexion with the transport of fuel in Sriharikota fuel and Tammenapattam casuarina coupes was carried out at a cost of Rs. 19-9-0 over a distance of three and two miles from the coupes to the canal. The use of the lines and trucks was granted to the contractors as usual. Two thousand one hundred and forty-one tons were transported over the lines against 4,105 tons in the previous year.

Rupees 42-6-0 was also spent in sorting and enumeration of tram materials with a view to reconcile discrepancies in the accounts and to dispose of unserviceable materials.

37. The total expenditure on new works amounted to Rs. 48,650 and on repairs *Southern* to Rs. 24,661 as compared with Rs. 59,470 and 16,910 in the previous year. The *Circle* bulk of the expenditure on new works was incurred by the Forest Engineer who spent Rs. 17,425 on the completion of the Alangayam-Komattiyeri road (Gillman road), 13.77 miles, Rs. 17,324 on part construction of the Amerdi-Nadanur road, 11.30 miles, and Rs. 10,697 on repairs and improvements to the Gillman road. In addition a sum of Rs. 511 was spent by him on the investigation of the Komattiyeri-Patrakad trace, 10.75 miles, and Rs. 1,792 on the construction of buildings in connexion with the road works.

The chief new construction works carried out by District Forest Officers were:—

North Vellore.—Completion of Thottalam-Naickeneri and the Pinnathurai-Amerdi roads. Cost Rs. 1,647.

Trichinopoly.—Completion of the Kalpatti-Pillayarnattam road.

Madura.—(a) Road up the Sathiar valley in the Sirumalais, 3½ miles, at a cost of Rs. 3,438, (b) the Sirumalai-Nattam-Dindigul road, 2 miles, at a cost of Rs. 972. These two works are still in progress.

The extension of Satyamangalam depot building. *South Coimbatore*—Completion of the subordinates' line at Kallapuram; part construction of the overseer's and sub-overseer's quarters at Sethumadai under the supervision of the Forest Engineer.

(c) *Miscellaneous works.*

Northern Circle.

45. The expenditure under this head was Rs. 2,191 against Rs. 3,421 in the previous year. The new works were—the sinking of one well in each of *Ganjām* and *Kurnool East*; one well in *Ganjām* was reconstructed, one step well in *Kurnool East* and a spring well in *Kurnool South* were converted into draw wells for the use of subordinates.

Central Circle.

46. Three new wells were sunk and 15 existing wells were repaired or deepened.

In *South Cuddapah*, construction of a trial well at Kodivengammabhavi was given up as it was found not necessary. In *Nellore*, a sum of Rs. 148 was spent on experimental boring at Potlur, and about Rs. 200 still remained to be paid to the Agricultural department. The result was not successful. Improvements to ponds in grazing blocks were carried out.

Southern Circle.

47. Well-boring operations were carried out at five places on the Javadis. A protected draw well at Muthanur on the Yelagiris is under construction. In *Madura* water-pipes were laid in the Bryant Park at Kodaikanal and two new wells were dug.

Western Circle.

48. The total expenditure was Rs. 3,823 against Rs. 1,481 in the previous year and the chief works carried out were sinking wells in *Mangalore North* and *South*, *Kollegal*, *The Nilgiris*, *North* and *South Coimbatore* and opening a canal in the Beypore depot in *South Malabar*.

Telephone.—The condition of the telephone line in *South Coimbatore* is reported by the District Forest Officer to be unsatisfactory owing to the fact that he has no powers of supervision over the linesman. Part of the line was out of order the whole of the year.

3. PROTECTION OF FORESTS.

(a) *General protection.*

Northern Circle.

49. The following statement shows the number and classification of forest offences reported during the year as compared with those of the previous year and the average of the three years ending with 1917-18:—

Cases.	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total.		Average for three years ending with 1917-18.
	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	
Cases taken to court.	11	11	509	542	96	102	77	102	698	757	637
Cases compounded.	2	7	1,837	1,855	426	552	315	198	2,580	2,612	2,650
Cases undetected.	284	272	123	105	3	..	..	2	415	379	395
Total ..	297	290	2,474	2,502	525	654	392	302	3,693	3,748	3,682

The total number of offences increased by 1.6 per cent over that of the previous year and by 1.7 per cent over the average of the three preceding years. Compared with the offences of the previous year, the offences under *injury by fire* and *other offences* decreased by 2.3 and 23 per cent respectively while those under *unauthorized felling* increased by 1.1 and *unauthorized grazing* by 24.5 per cents. The decrease under *injury by fire* was due to a fall in cases of incendiarism which were treated as undetected offences while that under *other offences* which occurred chiefly in *Vizagapatam* and *Gōdāvari Upper* is attributed to better and closer supervision in the former and to the efforts taken in the latter in explaining to the hill tribes to avoid *podu* cultivation close to the boundaries of forests. The increase under *unauthorized felling* was chiefly in the *Gōdāvaris* due to vigilant and effective supervision, in *Kistna* to the effect of patrol by beat cum gang system and in *Kurnool West* to poor people resorting to forests for illicit removal of timber and fuel having no means of

living owing to failure of rains. The effect of patrol systems in *Kistna* and *Kurnool East* and the drought and consequent want of fodder in unreserved lands in *Kurnool South* and *West* chiefly accounted for the increase under *unauthorized grazing*.

Of the cases disposed of by the Courts, 89.7 per cent ended in conviction against 82.6 in the previous year. The punishments inflicted by the Magistrates are reported to be generally satisfactory except in the *Gōdāvari Upper* and *Kurnool West*.

Compounded offences.—The number of cases compounded and the amount of fees realized were 2,037 and Rs. 18,299 respectively against 2,150 and Rs. 24,548 in the previous year. The decrease in the amount of fees realized was due to the moderation of fees in *Ganjām* owing to famine condition, and to a decrease in the number of cases compounded in *Vizagapatam* and *Kurnool East* coupled with the fact that heavier fees were levied for the offences in unreserved lands in the former district during 1917-18. The rules for compounding grazing offences were generally observed.

Undetected offences.—The number of undetected offences decreased from 415 last year to 379 during the year. About 72 per cent of these cases were fire occurrences which are always difficult to trace.

Holding adjacent villagers responsible for commission of offences in particular forests.—The notifications of warning to villagers regarding their responsibility were as usual published in *Vizagapatam*, *Gōdāvari Upper* and the *Kurnools*. No action was taken in *Ganjām*, *Gōdāvari Lower* and *Kistna*, but in the second division the *Koyas* responsible for thefts of timber from two of the reserved forests had their rewards for fire protection reduced or cut off.

50. *Rewards.*—In *Vizagapatam*, a sum of Rs. 35 was granted to subordinates for detecting a case of goat browsing in which 232 goats were involved. In *Kurnool East*, rewards aggregating Rs. 12-8-0 were granted to subordinates and two *Chenchus* in a grazing offence. Rupees 6 was given as rewards to subordinates in *Kurnool West* in a forest offence.

51. The following statement shows the number of offences detected during the year compared with the previous year:—

Central Circle.

Cases.	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total.	
	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.
1. Cases taken into court.	4	4	1,243	1,452	910	1,216	111	86	2,268	2,758
2. Cases compounded.	3	5	3,490	3,121	2,424	2,323	205	187	6,122	5,635
3. Cases undetected.	203	97	94	135	32	28	16	8	345	268
Total ..	210	106	4,827	4,708	3,366	3,567	332	281	8,735	8,662

52. There was a slight decrease under all heads except unauthorized grazing. The increase under unauthorized grazing was chiefly contributed by *Nellore* and was due to better protection and vigilant patrol by kanchadars and section officers.

Two thousand three hundred and four cases were taken into court and 2,132 ended in conviction, 172 were acquitted and the percentage of failure slightly increased from 7 to 7.47 per cent nearly. It is noteworthy that none of the cases taken into court in *South Cuddapah* ended in acquittal. The percentage of failures in *West Cuddapah* is double that of the previous year and the District Forest Officer explains this as having been "due to dismissed subordinates appearing as prosecution witnesses and being gained over and also to some of the cases not having been properly worked up."

Four thousand six hundred fifty-one cases were compounded for Rs. 63,759 against 5,715 cases for Rs. 64,019 in the previous year.

Rupees 2,486 were levied as fines on kanchadars for neglecting protection of kanchas.

The punishments awarded by the magistrates are reported to be generally adequate in all districts except Chittoor, in which district, the inadequacy of the penalties appears to be very marked and the District Forest Officer, in support of this, points out that the number of cases taken to court increased from 88 to 172 in 1917-18 and to 335 in 1918-19 and the number of cases in which compounding

fees were paid dropped from 1,167 to 1,119 in 1917-18 and to 1,042 in 1918-19, but the percentage of acquittals has not risen. The Collector of that district remarks as follows:—

"I issued the following circular to magistrates last year in my character of District Magistrate:—

"Extracts from the Forest Administration of the district are forwarded to sub-divisional magistrates and sub-magistrates. In determining the punishment in cases of conviction under the Forest Act, a magistrate must consider not only the damage done to the forest but the bad example given to others.

"The persons convicted are often very poor and unable to pay a substantial fine. Such persons may be sentenced to short terms of imprisonment without fine.

"I think on the whole forest cases were dealt with with more discrimination in 1918-19 than in 1917-18. The District Forest Officer attributes the increase in the number of cases that went into court to the leniency of magistrates. But on his own figures the real cause would seem to be the increasing severity of the compounding fees imposed which rose from Rs. 2-13-0 per accused to Rs. 4-1-0 per accused."

Holding adjacent villagers responsible for commission of offences in particular forests.—Notices warning the villagers of their responsibility and of the punitive measures which would be taken in case of commission of offences in the adjoining forests were published in Guntūr. As a result of a large fire which burnt the whole area (5,920 acres) of Gundu reserve of Bellary district, it was proposed to close the reserve to grazing but the Board suggested enhancement of grazing fees by 50 per cent; the matter is under correspondence with the Chief Conservator. In Chittoor district the closure to grazing of the Urukonda reserve of Madanapalle range for two or three years on account of numerous illicit fellings and of Nagapatla reserve of the Chamala range, Pulikonda reserve of Madanapalle range and Airala A reserve of Chittoor range, during 1919-20 on account of the failure of the adjoining villagers to render help in extinguishing fire has been recommended and final orders are awaited. In Nellore district, complete arrangements are in force under the kancha system for holding adjacent villagers responsible for commission of offences. Kanchadars who are for the most part villagers themselves are under an agreement to protect the kanchas entrusted to their care and are subject to penalties of fine, suspension, or cancellation of lease, etc., for violating kancha rules.

Rewards.—In Anantapur district a sum of Rs. 50 was granted as reward to forest subordinates for good work in connexion with a goat browsing case, in North Cuddapah, Rs. 45 was given to the Range Officer, Badvel, and two police constables who rendered help in the successful detection of a case of illicit removal of timber. In West Cuddapah, rewards to the extent of Rs. 100 were granted to forest subordinates, village officers, police sub-inspectors and some outsiders for successful detection of organized illicit removals of timber. In Chittoor, small rewards amounting to Rs. 29-5-0 were given for successful detection of cases of illicit shooting, grazing and felling. In Nellore, a list of kanchadars who really deserve reward for good protection is being prepared; the preparation of this list is one of the chief difficulties in working the kancha system. As the number of kanchas increases, the list gets unwieldy and it is difficult to check the proper grant of rewards. A ranger has since been posted for the inspection of kanchas and enforcement of the rules.

53. *The rules for the guidance of Forest officers in compounding forest offences* in G.O. No. 1990, dated 13th June 1910, and the rules prohibiting District Forest Officers passing orders to confiscate the seized property when compounding an offence were generally observed throughout the circle.

Southern Circle.

54. The following statement shows the number of offences of the year compared with the previous year:—

Cases.	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total cases.	
	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.
Cases taken into court ..	11	8	2,552	2,390	499	571	52	83	3,115	3,052
Cases compounded ..	1	3	5,963	5,856	1,552	1,570	117	178	7,838	7,107
Cases undetected ..	587	369	147	81	24	44	4	5	752	499
Total ..	599	380	8,663	7,827	2,075	2,185	173	266	11,515	10,658

The fall in the number of offences is principally due to the disafforestation of isolated reserves and placing "Class V" reserves under panchayat management. In North Vellore, the fall is attributed to a less number of offences of unauthorized felling of agricultural implements owing to the unfavourable weather which interfered with the agricultural operations. In South Arcot, there was a considerable fall due to the disafforestation of certain areas and to the concentration of the establishment on the forests which the department is to retain the supervision of. On the other hand there was a large increase in North Salem and this is attributed to the exceptionally bad season which drove many people to steal in the forests to eke out their livelihood and to the increased vigilance of the protective staff.

The slight increase under 'Unauthorized grazing' was generally due to the enhancement of grazing fees which tempted some people to evade taking out permits and that under 'other offences' consists of small increases in almost all the districts and does not call for any special remarks.

Out of the total of 10,658 cases, 2,856 relate to unreserved lands of which great majority are, as usual, unauthorized felling cases. The figure does not include cases in unreserves in Tinnevely which have not been reported.

Cases brought to trial.

Year.	Convictions.	Acquittals.	Percentage of failure.
1917-18	2,945	133	4.32
1918-19	3,062	123	3.85

As compared with the previous year, there was an increase in the number of cases brought to trial. This was chiefly due to cases having been taken to court for non-payment of compensation fees. It is also attributed to light punishments inflicted by certain magistrates in West Vellore and North and South Salem and consequently the accused prefer trial by magistracy to payment of compensation fees. The District Magistrate of North Arcot has looked into this matter. In other cases it is not stated whether attention has been drawn to the need for enhanced sentences. It is satisfactory to note that there has been a reduction in the percentage of failure:—

Cases compounded.

Year.	Number of cases.	Amount. Rs.
1917-18	6,883	54,349
1918-19	5,939	49,032

In fixing the amount of compensation, attention was generally paid to the orders contained in G.O. No. 1990, Revenue, dated 13th June 1910.

Important cases.

55. *South Vellore.*—Two accused were sentenced to rigorous imprisonment for three months for stealing sandalwood. A case of systematic illicit grazing of plains cattle on the Javadi plateau exclusively reserved for Malayalis was detected and the accused was fined Rs. 100. A case of mischief by fire on sandal growing on patta land is pending trial.

West Vellore.—The sandalwood theft case referred to in last year's report ended in conviction and two of the accused were fined Rs. 10 each. A case of illicit felling of a sandalwood tree 40" in girth in Tenmalai Javadis was detected. Of the two accused concerned in the case, one was sentenced to three months' rigorous imprisonment and the other absconded. A case of smuggling of sandalwood by a merchant of Ambūr was also detected. The accused was convicted and sentenced to undergo rigorous imprisonment for six months.

Trichinopoly.—Two cases of smuggling of sandalwood were detected and both of them ended in conviction. In one of these cases over 3 cwt. of sandalwood was seized.

56. *Rewards.*—Small rewards aggregating Rs. 147 were given for successful detection of goat-browsing cases in South and West Vellore and South Arcot districts and a case of sandalwood smuggling in Trichinopoly district.

Satisfactory progress could not be made by the Forest Engineer on the Amerdi-Nadanur Ghaut road as coolies imported from the plains ran away on account of an outbreak of influenza and every endeavour made to bring them back ended without success; moreover the rates provided in the sanctioned estimate were found low and a revised estimate for Rs. 1,75,400 was prepared and has since been sanctioned by Government—the work is now being pushed on with.

An estimate for Rs. 1,33,700 for the Komattiyeri-Patrakad road has been sanctioned in G.O. No. 1215, Revenue (Special), dated 20th June 1919. Arrangements are being made to put the work in hand. The Forest Engineer has also prepared the plans and estimates amounting to Rs. 2,68,900 for the Paramanandal Melpat Ghaut road and preliminary estimates for the investigation of Komattiyeri-Kuttathur road and Nadanur-Mandaparai bridle-path.

Western
Circle.

38. The expenditure on new works amounted to Rs. 17,282 and on repairs to Rs. 27,498 against Rs. 17,927 and 21,664 respectively in 1917-18. Sixty-one miles of roads and bridle-paths were constructed, but it is impossible to ascertain from the District Forest Officer's reports what proportion of this length was completed. The more important new works of the year were:—*North Mangalore*—Commencement of the construction of Kursegudde-Raghithlu road and the Nujinane road extension. *Mangalore, South*—Construction of Coupe No. II road of Jalsur East reserve, an approach road to Parappa reserve, completion of an approach road to Kollamogaru rest-house and cart-track for the extraction of fuel from Coupe No. III of Kalingimale, altogether 4 miles and 5 furlongs of new road, were constructed. *South Malabar*—Completion of the construction of the Nellikutha-Palat road and of the bridle-path from Neelikal to the foot of the hills. Construction of a bridle-path from Poochipara to Shola. *Nilgiris*—Construction of the College main road and aligning the road trace of the College lower road. *Kollegal*—Two miles of bridle-path from Hosur to Cowdalli. *North Coimbatore*—Metalling 2 miles of Hassaaur-Bailur road and 2 miles each on Barghur and Kadambur Ghaut roads. *South Coimbatore*—Extension of Aliar cart-track for a distance of 1 mile and 2 furlongs and construction of Anaipadi bridge.

39. *Tramway*.—A pakka bridge was constructed over the Anaipadi stream. The following is taken from the District Forest Officer's report:—

"The tramming was done solely by Government bulls. The outturn of work during the year under report was 8,941, 21/84 ton miles only against 9,584, 61/80 ton miles in the previous year. Hence the Tramway account shows a net loss in this year of Rs. 8,306-4-6 against a profit of Rs. 6,234-5-2 in the previous year. The above figures cannot be taken for purposes of comparison. The distances over which tramming has to be done would appear to have been over-estimated in the past. Again it would appear that quite fantastic figures had been adopted for some years past for the supposed cost of carting if we had no tram line which make the tram line appear to be more advantageous than it is. The figure taken as the imaginary cost of carting one ton mile has in the past been Rs. 1-12-0. The actual cost of carting one ton mile between Sethumadai and Pollachi is As. 4-3. This year the writer has attempted to arrive at a more accurate statement of facts. The working charges increased from Rs. 1-4-5 per ton mile to Rs. 1-9-11 per ton mile. The increase in working expenses is due to (1) debiting to this year value of tramway materials purchased in the previous year, (2) construction of a pakka bridge at Anaipadi, (3) high cost at which provisions had to be purchased for Government bulls.

"The tram line itself is in a deplorable state but the writer has no reason to suppose that it is worse than it has been during the previous 30 odd years of its existence. The gradients are excessive, 1 in 12 being common and the radii of the curves are so short as to make it a matter of the greatest surprise that derailments are not more frequent than they are. Many of the worst curves are without check rails. Steps are being taken to rectify the omission."

In any case, the figures mean little or nothing in the absence of a capital account. No business firm would charge against the working expenses of any one year the cost of building a bridge or purchase of material.

40. *Work of the Forest Engineer*.—An estimate was prepared by Mr. F. J. Marshall and submitted to Government for constructing a steam-tramway from Anamalai to the Tekkadi leased forests. The estimated cost was about 6 lakhs. The estimate was returned for revision at current market rates and was pending at the end of the year.

(b) *Buildings*.

41. Rupees 5,375 were spent on new works and Rs. 18,832 on repairs and maintenance as against Rs. 8,388 and Rs. 14,831 respectively in 1917-18. Quarters for a deputy ranger at Osorobandho in *Ganjām* were built. Quarters for a deputy ranger at Chintala and the range office and out-houses to the range quarters at Cherlopulli in *Kurnool East* and the combined range office and quarters at Racherla in *Kurnool South* were in progress. The office for the range officer of Lakkavaram at Chintur in *Gōdāvari Upper* was commenced.

Northern
Circle.

42. During the year, the total expenditure on new buildings and on repairs amounted to Rs. 17,273 and Rs. 16,170 respectively against Rs. 13,425 and Rs. 12,336 in the previous year. The following work was done in *Bellary*—Construction of a latrine at the District Forest office. *Guntūr*—Completion of the inspection shed at Venkatayapalem, construction of quarters for the deputy ranger at Srigiripad and part construction of subordinates' lines at Srigiripad. *North Cuddapah*—Completion of rest-house and out-houses at Vathamadugu and Kothabhavi in Lankamalais. *South Cuddapah*—Construction of subordinates' quarters at Papanasanam, of a rest-house and out-houses at Bodeddulabhavi, of a Horne-typed thatched shed at Thummalabula, of an inspection shed at Kutalamarri, part construction of a rest-house with out-houses at Kodivengammabhavi, of a pakka rest-house and out-houses at Thummalabula, and conversion of the Kodur range office roof into a gabled roof. *West Cuddapah*—Completion of inspection shed at Polathula, of a combined range office and quarters at Sanipaya, part construction of subordinates' quarters at Sanipaya, of a rest-house with out-houses at Gadikota and of a kitchen and servants' quarters at Polathula. *Nellore*—Completion of out-house and latrine to the Kanigiri range quarters. *Chingleput*—Construction of two lodges for gate-keeper at Velacheri and Taramani gates in Guindy Park reserved forest. *Chittoor*—Completion of Nallagutta hill bungalow, of subordinates' quarters at Mamandur, part construction of a combined range office and quarters for Mamandur range.

Central
Circle.

43. During the year the total expenditure on new buildings and on repairs amounted to Rs. 36,235 and Rs. 13,406 respectively against Rs. 29,732 and Rs. 9,867 in the previous year. The more important works done during the year were:—

Southern
Circle.

* *South Vellore*.—Completion of the subordinates' quarters at Thongamalai, construction of a rest-house at Bhimarapatti and the commencement of the subordinates' lines at Bargur and of a rest-house at Komattiyeri.

West Vellore.—Completion of the rest-house at Pudur and deputy ranger's quarters at Kuttathur and extension of sandalwood godown at Tiruppattur and part construction of deputy ranger's quarters at Nellivasal.

South Arcot.—Construction of a rest-house at Lalapet.

South Salem.—Construction of a subordinate's quarters at Kottapatti and completion of the rest-house at Mayambady.

Madura.—As in the previous year very good progress was made and over Rs. 11,000 were spent: the rest-house at Kallathu, the range office at Ayyalur and the subordinates' line at Andipatti and an inspection shed at Tope in the Karandamalais were completed.

44. The expenditure on new buildings amounted to Rs. 16,003 and on repairs and maintenance to Rs. 10,543. The figures for the previous year were Rs. 15,259 and Rs. 9,725 respectively. The principal new works of the year were:—*Mangalore North*—Construction of range officer's quarters at Coondapoor with out-houses and a guard's shed. *Mangalore South*—Rest and out-houses at Parappa, deputy ranger's quarters at Kandatka, and subordinates' lines at Kollamogaru. *North Malabar*—Construction of a rest-house at Golar (incomplete) and subordinates' lines at Makki and Vageri. *Nilgiris*—Subordinates' lines at Masnigudi. *Kollegal*—Subordinates' lines at Lingamankarai and completion of out-house to Ponnaichi rest-house. *North Coimbatore*—

Western
Circle.

Western
Circle.

57. The offences reported during the year are compared with those of the previous year and with the average of the three preceding years in the following statement:—

Class.	Injury to forest by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total cases.		Average for three years ending 1917-1918.
	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	
(a) Cases taken into court.	18	14	260	282	126	121	66	104	470	521	548
(b) Cases compounded.	63	53	1,430	1,444	436	636	202	237	2,241	2,370	2,513
(c) Cases undetected.	400	186	39	7	1	6	2	2	442	201	434
Total ..	481	253	1,729	1,733	623	763	270	343	2,153	3,092	3,495

The total number of offences decreased by about 2 per cent as compared with the previous year and by 12 per cent as compared with the average of the three preceding years. The decrease is chiefly under 'injury to forest by fire', in *North Coimbatore*. In this division serious fires appear to occur only every alternate year, and the past year was a good one. There was a very large increase in felling and grazing offences in *Kollegal* attributed to better protection, but as this is given as a reason for decrease in other divisions the true reason is open to doubt.

The number of offences prosecuted during the year was 521 and there were 167 cases pending from the previous year. Out of the total of 688 cases taken to court, 570 were disposed of and 118 were pending disposal at the close of the year. There were 519 convictions and 51 acquittals, the percentages of convictions and acquittals being the same as those of the previous year, viz., 91 and 9, respectively. The punishments inflicted by the Magistrates are reported to be generally satisfactory except in *Mangalore North* and the *Nilgiris*.

Compounded offences.—The number of cases compounded and the amount of fees realized were 1,914 and Rs. 25,604 respectively against 1,979 and Rs. 30,016 in the previous year. The average compounding fee was slightly higher than in the previous year owing to the imposition of heavier compounding fees for grazing in *North Coimbatore* concurrently with the increase in the grazing fees. There were 251 cases withdrawn during the year against 217 in the previous year. The rules for compounding grazing offences were observed generally.

Undetected offences.—The number of undetected cases compared with those of the previous year decreased by 55 per cent mainly under 'Injury to forest by fire.'

Holding adjacent villagers responsible for commission of offences in particular forests.—The notification warning the villagers on the subject was as usual published in all the divisions except in the two *Malabar* divisions where this system is not required.

58. **Rewards.**—Rewards amounting to Rs. 167 were granted to subordinates and others for helping in the detection of offences. The chief amounts were granted in *North Mangalore* for sandalwood cases. The *Nilgiri Garde Association* paid Rupees 88-4-0 to subordinates for detecting cases of poaching. In *North Malabar* small rewards were paid to Kurubers for successful protection from fire. There were no offences of any special importance during the year.

(b) Protection from fire.

Northern
Circle.

59. **Special protection.**—In spite of the season having been very dry and unfavourable, the results were fairly satisfactory. There was no change in the system of protection. The assistance of the *Khonds* in *Ganjām* and the *Koyas* and *Reddis* in the *Gōdāvaris* was, as usual, enlisted in fire-protection operations. They were granted rewards on the results of protection in addition to the payment of wages for their labour. The area over which protection was attempted was 2,373 square miles against 2,360 in the previous year. The increase was in *Kurnool West* where additional areas in two of the ranges were brought under rigid protection. The area burnt was

about 401 square miles resulting in 83 per cent of success against 86 in the previous year and 90 in 1916-17. About 39 per cent of the area burnt was in *Gōdāvari Upper* and 56 in the *Kurnools*. In *Gōdāvari Upper* the absence of hot weather rains led to increased burning. A better final report in *Kurnool West* raised the figures, while this was partly balanced by the drought in *Kurnool East* which caused a scarcity of grass. In *Kurnool South*, a large extent was burnt in *Sirvel* range with the connivance of subordinates to cover up the extensive illicit fellings of timber and in *Gundlakamma* range where most of the fires were caused by a gang of untractable *Chenchus* of the *West* who committed also several dacoities.

The cost per square mile successfully protected was Rs. 21-15-5 against Rs. 23-6-9 in the previous year.

60. **General protection.**—The area attempted to be protected was 2,189 square miles against 2,293 in the previous year. The percentage of failure fell from 9.1 to 4.9.

61. The number and origin of fires are given in Appendix A. The number of fires rose from 342 to 349, while the area burnt decreased by about 4 per cent.

62. **Special protection.**—There was no change in the system of fire protection. The area of forest tracts protected is shown in Form No. 72. The area attempted to be protected was 2,275 square miles against 2,346 square miles in the previous year and the area burnt was 81 square miles against 276 square miles in the previous year. In *Bellary*, all the felled coupes and the plantations of *Adōni* range were fire-protected as usual. The fire-protection operations prescribed for *Harpanahalli* range, namely, scraping grass around coupes, were not carried out as the operations were found to be very costly. Two big fires occurred in unprotected areas in *Bellary* and *Somapuram* reserves burning an area of 950 and 1,036 acres respectively. Four fires occurred in *Bandri* reserve—two in unprotected areas burning 1,250 acres and two in protected areas burning 1,280 acres against 9,291 acres attempted to be protected during the year. The whole of *Gundu* reserve was burnt owing to incendiary fires and steps are being taken to enhance the grazing fees. There were on the whole comparatively fewer fires during the year. In *Anantapur*, there were 32 fires in all burning 10.39 square miles against 95 fires of 48.18 square miles and fires were not heavy anywhere which is mainly due to absence of inflammable material on the ground, the available grass having been cut and removed. Help was generally rendered by villagers adjoining reserves and none of the reserves were closed in the year as a punitive measure. In *Guntūr*, no areas were specially fire-protected during the year. Ten fires covering an extent of 113 acres were reported during the year and all these were due to the carelessness of way farers. The closure of parcels 32 and 33 of *Gangalagunta* reserve for two months in 1917-18 as punishment seems to have had a salutary effect on the villages adjacent to forests. In *North Cuddapah*, the smaller area burnt during the year is said to be due to the timely fire-tracing operations and to the constant and vigilant patrol of the subordinates. There were two cases of malicious firing and both were taken to court; one ended in conviction and the other is pending disposal. In *West Cuddapah*, the decrease in the area burnt is ascribed to the continuance of enhanced grazing fees ordered in B.P. Rout. No. 1048, Forest, dated 8th August 1917, during 1918-19 also and to timely fire-tracing operations and to vigilant patrol. In *Nellore*, there were very few fires during the year owing to timely fire-tracing operations. The withdrawal of the permission to remove grass had the desired effect. In *Chittoor*, 59 fires occurred burning over 2,947.60 acres as against 134 fires of 15,955 acres in the previous year. It is difficult to correctly account for the decrease more especially as the season of 1918-19 was a very dry one; some good showers of rain in April and May undoubtedly helped by shortening the fire season considerably. The villagers adjoining *Nagapatla*, *Pulikonda* and *Airala A* reserves did not render sufficient help in putting out fires. Proposals have been submitted for enhancing the grazing fees for these reserved forests and orders are awaited.

63. **General protection.**—The percentage of failure fell from 9.29 to 2.03.

64. The number and origin of fires are given in Appendix A.

65. **Special protection.**—There was no change in the system of fire protection. The reward system gives good results and it was introduced in parts of *North Circle*. *Vellore* and *Trichinopoly* districts. The area attempted to be protected was 1,510

76. An analysis of cattle impounded is given in Appendix B. The increase in the number of cattle impounded was due chiefly to the increase in the number of offences under unauthorized grazing involving a greater number of cattle.

Southern
Circle.

77. About 76 per cent of the total areas of reserved forests and lands was opened to grazing of cattle but closed against goats. The incidence of grazing in the several districts of the circle is given below:—

District.	Number of cattle in cow units.	Area in acres.	Number of acres per cow unit.
North Vellore	44,238	238,080	5.38
South do.	59,701	230,187	3.85
West do.	53,883	203,410	3.78
South Arcot	51,326	123,419	2.46
North Salem	118,820	485,120	4.08
South do.	52,636	321,920	5.40
Trichinopoly	17,629	65,920	3.74
Madura	66,462	369,250	5.71
Tinnevely	21,469	51,200	2.39
Total	493,164	2,091,536	4.24

(1 buffalo = 2 cows = 4 sheep.)

The number of cattle grazed shows a reduction of 99,728 animals since last year. The incidence of grazing has fallen from 3.61 to 4.24 acres per cow unit. As the incidence of grazing was high in Trichinopoly, proposals for enhancement of grazing fees have been received and are under consideration. The high incidence in Tinnevely has not been explained. Steps are being taken to introduce the Hill Village System in North Vellore and South Salem. It is hoped that the gradual increase of grazing fees and the introduction of grazing schemes will reduce the incidence.

An analysis of the cattle impounded during the year with the average of three years is given in Appendix B. The increase was due to illicit grazing of foreign cattle in South Vellore, detection of cases of illicit grazing in closed areas in Trichinopoly and impounding of goats found browsing in Madura district.

Western
Circle.

78. 76.7 per cent of the total area of the reserved forest and lands were opened to all animals, 5.2 per cent to all animals except sheep; and 18 per cent closed to all animals for the whole year and 1 per cent for part of the year.

79. Incidence of grazing.—North Coimbatore is the only division which reports what the incidence is, viz., from 5 to 6 acres per cow unit. In other divisions the incidence has been restricted to the possibility except in two forests in South Mangalore.

80. Introduction of the Forest Village System.—The scheme was sanctioned for the Udamalpet range of the South Coimbatore, and for the Thadagam reserve and Mettupalaiyam range of Central Coimbatore. The schemes prepared for the Talamalalai range of North Coimbatore and Bolampatti range of Central Coimbatore await the Conservator's local inspection. The question of the introduction of the system in North and South Mangalore is pending consideration with the Collector. The number of cattle impounded was 11,484 against 7,551 in the previous year, and the average for the three years ending 1918-19 was 8,872. The increase occurred in Kollegal, North and Central Coimbatore.

(d) Protection against injuries from natural causes.

Northern
Circle.

81. Ganjam.—Creepers were cut by the staff over 12,951 acres. Some dead and dying trees were removed to prevent insect and fungus attack. Vizagapatam.—Creepers were cut in 200 acres of sal forest by paid coolies. Godavari Upper.—Nil. Godavari Lower.—Creepers were cut by the staff on 25,870 acres. Kistna.—Nil. Kurnool, East.—Some creeper cutting was done in Gudem range by the staff. Kurnool, South.—Nil. Kurnool, West.—Creepers were cut by the staff over 250 acres of teak plantations in Pecheruvu range.

Central
Circle.

82. Bellary.—In Adoni range, creeper cutting was done by the subordinates. Cuntur—the insect attack to casuarina growth in Nayanipalli plantation continued owing to the unhealthy growth of the trees due to the poor soil and lower level of

water strata. No damage was done to tree growth in the other ranges by natural causes. North Cuddapah—there have been sporadic attacks by caterpillars which defoliated *Anogeissus latifolia* trees in Nallamalais and in part of Chennupalli and Kalasapad reserves. These disappeared soon after there were some good showers; but in parts of Kalasapad reserve where there had not been good showers, the attack was rather severe and many trees were rendered leafless. No special steps were taken to eradicate the pest. South Cuddapah—a pest is reported to have been found causing damage to Thumba trees (*Shorea Tumbuggaia*) near Papanasanam and Mogilipenta. West Cuddapah—the usual creepers and soft wood species in the worked coupes were removed at the time of standard marking. Nellore—no special steps were taken to remove *Loranthus* growing on some *Grewia* and other inferior species. A caterpillar attacking *Anogeissus latifolia* was observed in the Ayyavaripalle reserve and a special report with specimens was sent to the Zoologist, Imperial Forest Research Institute, Dehra Dun, and his opinion is awaited. Owing to financial stress, removal of prickly-pear from coupes under working was not undertaken though there is a provision for its removal in the working plans. Chingleput—climbers and creepers in the felled coupes have been cut. *Euphorbia* in all coupes under working were cut by contractors. Prickly-pear was to a certain extent removed from the felled portions of No. 2 coupes of the six special working circles and the work is in progress. Chittoor, the cutting of creepers and climbers was carried out in the Mamandur coupes under working. Eradication of lantana over an area of 100 acres was done in Horsleykonda reserve at a cost of Rs. 155-4-0.

Protection against injuries from natural causes.

83. Prickly-pear.—Some progress was made during the year in getting rid of Southern this pest. In West Vellore, it was cleared by subordinates wherever found. In South Arcot, Rs. 702 was spent in clearing an area of 637 acres in fuel forests. In South Salem, Rs. 2,903 was spent in clearing it in the Chitteri sandal working circle and four fuel coupes. In Madura, Rs. 1,029 was spent in removing the pest from 14 fuel coupes but it was found to be coming up again. It is difficult to see how any result can be arrived at as the fruit is eaten by men, monkeys, squirrels and birds and the seed scattered everywhere. It is extremely common outside the reserves.

Lantana.—In North Vellore lantana was uprooted in two plantations and in South Vellore the pest was uprooted and burnt wherever found. In West Vellore, Rs. 1,128 was spent in uprootal over an area of 1,019 acres and about half the area has been cleared up to now. The work could not be pushed on faster as the Malayalis do not like the task and coolies from the plains will not stay on the hills on account of malaria and the scarcity of water. In North Salem, 671 acres were cleared in the Thalli reserve. In Tinnevely small amounts were spent but the work was stopped as the cost was very high and as it was found that the Kattalamalai estate, a private property which was cleared of the pest repeatedly, was full of it.

Parasitic pests.—The teak leaf defoliators *Pyrausta macheralis* and *Hyblæa puera* were again at work in Banavaram and Palamady reserves but the damage was not extensive. In June last, another defoliator *Mylocerus subfasciatus* was at work on teak and red sanders in the Pichanur tope and on teak in the Palamady reserve.

Creeper cutting.—In Tinnevely Rs. 603 were spent in creeper cutting and girdling in 600 acres of the sandalwood area in Alagarkoil valley, Rs. 168 in coupes III to VI of Kalakad working circle and Rs. 102 in different localities in the Ambasamudram Range. In addition Rs. 151 were spent in destroying a shrub called "Pulathi" over an area of 69½ acres in Kayamoli reserve. Similar work was done in 10 acres without cost by subordinates. This work requires extension in other districts, *Pterolobium*, *Zizyphus oenopia* and some of the creeping *Acacias* make the forests almost impenetrable and prevent more valuable species growing.

Sambur (*Rusa*) do a lot of mischief in the teak coppice areas near Mundanthorai in the Tinnevely district.

Spike (Sandalwood).—This subject is treated in detail under research work. The area in which the disease is found is increasing in Trichinopoly district.

Western
Circle.

84. *Spike disease of sandal*.—The only work done was clearing lines 300 feet broad in Kollegal and North Coimbatore round areas infected by spike with a view to preventing the spread of the disease. The total length of lines cleared is considerable and though the Conservator has not yet had time to see any he understands that the clearing is seldom well done. The utility of the work on a large scale is therefore open to question and in future it will be carried out on a more experimental scale in a few easily accessible localities.

Lantana.—Eradication on a small scale was carried out in several divisions the total expenditure being Rs. 6,462.

Prickly-pear.—Rs. 17,904 was spent on eradicating or rather on vainly attempting to eradicate this pest. It was decided at the Conservators' Conference in June 1919 that no more money should be wasted on this Sisyphean task.

4. SYLVICULTURE.

(a) Natural reproduction.

Northern
Circle.

85. *Ganjām*.—The year was normal for regeneration, but on shallow soils the drought killed many *Shorea robusta* coppice shoots. *Pterocarpus santalinus* seeded profusely in the Napier's Park reserve. *Vizagapatam*.—A rather poor year, due to drought, but good in the moisture parts inland. *Dendrocalamus* seeded widely, mostly in Golconda range. *Gōdāvari Upper*.—Generally good. *Gōdāvari Lower*.—Good. *Kistna and Kurnool East*.—Poor. *Kurnool South*.—Bad. *Kurnool West*.—Good in closed areas on the Nallamalais. Particularly good in stone walled areas on the Yerramalais. Fair in open areas on the Nallamalais. Poor in open areas on the Yerramalais owing to heavy grazing.

Central
Circle.

86. *Bellary*.—In Adoni Range, natural reproduction of *Dalbergia latifolia* and *Cassia fistula* is good in Adoni East and West reserves, so also *Cassia fistula* in Isivi and Ganekal reserves. The regeneration of *Melia indica* in Sulikeri, Peddakadabur, Kuppagal and Tungabhadra reserves is good. *Acacia Sundra* is fair in Adoni West and Ganekal reserves. *Hardwickia binata* reproduced itself fairly well in Kuppagal reserve under parent trees. Although *Hardwickia binata* reproduced itself very freely during the rains and large areas are found covered with newly-germinated seedlings, yet very few survive the hot weather; consequently the absence of saplings and poles are very marked. The reproduction of sandal is very marked especially in Adoni East and West reserves. The reproduction of Babul in Daroji is good. *Anantapur*.—The sandalwood trees which had established themselves in the Penukonda, Gundumala and Yerracherla reserves are confined to favourable localities and natural reproduction is observed in all of them. The Collector observes "That the climate of the district, especially, its southern half which is in the Mysore plateau is congenial to sandal growth, and in my opinion, the district will bear wider experiments in sandalwood culture. I mentioned this to the Conservator during his recent visit to the district and he seemed to agree with me." I endorse this. I think there are many places in Bellary, Anantapur and Chittoor where sandal can be advantageously introduced.

Natural regeneration of *Acacia Sundra*, *Dolichandrone crista* and *Hardwickia binata* were observed in the reserves throughout the district. Coppice reproduction in the felled coupes of Illur reserve, continued to be satisfactory. The species coppiced was purely babul. *Guntūr*.—The regeneration of Yepi (*Hardwickia binata*) in the upland ranges was satisfactory as it seeded profusely. The reproduction of Billudu, *Anogeissus* and Nallaregu was fair in the Vinnukonda range while it was rather poor in the Sattenapalle range. The regeneration of coppice was fair in all the felled coupes. The reproduction of Mada (*Avicennia officinalis*) by seed and the regeneration of Thilla (*Eccacaria agallocha*) and Kalinga (*Sonneratia apetala*) by coppice were successful in the Bapatla range as in 1918. *North Cuddapah*.—Reproduction by coppice of *Anogeissus latifolia*, *Pterocarpus santalinus* and *Hardwickia binata* is generally good in all the felled coupes. The natural regeneration from seed of the principal species such as *Pterocarpus santalinus* and *Anogeissus latifolia* was fair in Nallamalais but was not so good in the Veligondas and Lankamalais. *South Cuddapah*.—Reproduction of Red Sanders, Billu and other important

species by seed was on the whole fair, taking into consideration the bad seed year and scanty south-west monsoon. Seedlings of Red sanders, Billu, Yelama, Yepi, Rosewood and Thamba in improvement felling series were tended during the year on a more extensive scale than in the previous years. A good percentage of tended seedlings died back in the hot weather but many of these again sprouted after the advent of the south-west monsoon. Reproduction by seed of sandalwood in the Kodur plantation and in the Seshachellam reserve adjoining Mogilipenta was good. Reproduction by coppice was as usual very good. *West Cuddapah*.—In all the ranges, the reproduction by coppice shoots of Red sanders, Neeruddi, Yelama and Billu was good while the reproduction by seed was checked by fire and failure of rain. In areas not affected by fire the reproduction by seed of Red sanders, Neeruddi and Billu was fair. In Idapulapaya Palmyra plantation the reproduction by seed was excellent. Damage by wild animals was slight and could not be prevented.

Nellore.—*Eugenia Jambolana*, *Memecylon angustifolium*, *Glycosmis pentaphylla*, *Pterospermum suberifolium*, *Mimusops hexandra*, and *Albizia amara*, threw out good coppice shoots in Sriharikota island. *Soymida febrifuga*, *Bauhinia racemosa* and *Grewia latifolia*, coppiced well on the main land. *Strychnos nux-vomica* seeded poorly during the year. *Chingleput*.—Coppice reproduction in all felled coupes was very good. In the plain forests of Chingleput and Sriperumbudur ranges reproduction by seed was satisfactory especially in the case of *Zizyphus xylopyra*, *Dodonaea viscosa* and *Buchanania latifolia*. In Sathiavedu range, regeneration of *Eugenia jambolana* especially in the valleys and *Shorea tumbuggaia*, *Dillenia pentagyna* and *Terminalia chebula* on the plateau of Kambakkam was excellent. *Chittoor*.—Reproduction from seed of the better species in the Mamandur timber working circles was not satisfactory. This was probably due to too dense a cover of grass and weeds. Experiments were made to find out whether the burning of grass, etc., helped the regeneration of *Pterocarpus santalinus*. The following species were observed to seed abundantly during the year. *Pterocarpus santalinus*, *Santalum album*, *Anogeissus latifolia*, *Terminalia tomentosa*, *Terminalia Arjuna*, *Cassia marginata*, *Chickrassia tabularis*, *Hardwickia binata* and *Chlorozylon swietenia*. Coppice reproduction was most encouraging in all the working circles of the Panapakam and Mungilpatti reserves recently inspected by the District Forest Officer.

87. *Sandal*.—The natural reproduction of sandal generally was not as good as in the previous year on account of failure of rains and prolonged hot weather. In *South Vellore* many seedlings are found on the Javadis and the species is spreading fast in Valasamalai. In the Palar river side plantations, in *North Vellore*, on the Pachamalais and Kollimalais in *Trichinopoly* and in the hill reserves of Kallakurchi range in *South Arcot* the spread is gradual. Regeneration was as usual good in the Kuttalam range and Alagarkoil valley in *Tinnevely*. The seedlings in the Unjalnachi reserve, Sirumalai Southern slopes and in Ulkombai in *Madura* continue to thrive.

In *North Vellore*, reproduction of teak and other timber species was not satisfactory on account of drought. *Albizia amara* and *Alatantia monophylla* seeded well during the year.

South Vellore.—The reproduction of *Hardwickia binata* in the Pavunjipattu reserve and satin-wood in Santavasal range was on the whole satisfactory. *Dalbergia latifolia* was found to come up well in parts of the outer slopes of the Javadis in burnt areas.

West Vellore.—Scattered seedlings of *Pterocarpus marsupium*, *Dalbergia latifolia*, *Anogeissus latifolia* and teak were again found where the species are fairly represented but all of them suffered as in the previous year from the prolonged hot weather. Coppice reproduction in the felled coupes was fair.

South Arcot.—Natural reproduction of *Albizia amara* was good throughout the district. Coppice reproduction was generally fair in all felled coupes closed to grazing. Satin-wood and *Eugenia Jambolana* were found to come up well in certain reserves.

North Salem.—The regeneration of *Hardwickia binata* along the banks of the Cauvery and Anabiddahalla was very satisfactory and encouraging.

square miles against 1,433 square miles in the previous year. During the year the Pachaimalais in *South Salem* were transferred from general to special protection and in *Matura*, the reserves of Palni range and Andipatti North and South blocks were brought under special protection. The area burnt during the year was 29.33 square miles against 42.13 square miles in the previous year and the percentage of area successfully protected during the year was 98.05 against 97.05 in the previous year. The cost per square mile of successfully-protected area fell from Rs. 13-1-10 in the previous year to Rs. 12-6-0 during the year under report. These results are, I think, satisfactory in view of the dryness of the season.

66. *General protection*.—The percentage of failure was only 1.15 per cent against 2.39 per cent in the previous year.

67. The number and origin of fires are given in Appendix A. There were 379 fires burning 38,506 acres in the reserved forests against 599 fires burning 68,280 acres in the previous year. It is satisfactory to note that in all the districts except *Tinnevely* the numbers of fires as well as the areas burnt were less than those of the previous year. There were 45 fires burning 12,973 acres in *Tinnevely* against 31 fires of 4,820 acres in the previous year. Extensive areas were burnt in grazing compartments which were in consequence closed to grazing. Only in one case were the culprits detected and they were sentenced to six months' rigorous imprisonment each. In July 1918 there was a large fire in the Chintamani and Vasudevanallur grazing compartments. Of the subordinates who were engaged in putting out the fire one guard was unfortunately burnt to death and another guard and two deputy rangers were badly burnt. I heard that the accident was due to counterfiring and the men were caught between the two fires. The widow of the guard was compensated.

Western
Circle.

68. *Special protection*.—The usual methods of fire protection were followed. The area over which protection was attempted was 1,049 square miles against 1,014 in the previous year. The increase was in *North Mangalore*, *Nilgiris Central* and *North Coimbatore*. There were 354 fires, the area burnt being about 21 square miles. The percentage of success was 97.99 compared with 95.16 in the previous year and 98.3 in 1916-17. Protection was very good in *South Coimbatore* where no fires occurred; heavy rain in March no doubt contributed to this result. Protection was good also in *North Mangalore*, *North Malabar*, *Nilgiris* and *Kollegal*. In *South Coimbatore* the assistance of hill tribes was as usual enlisted and a reward paid to them for successful protection. The cost of successful protection per square mile was Rs. 29-5-11 against Rs. 27-8-8 in the previous year, the rise being due to the increase in the price of food-stuffs.

69. *General protection*.—The area over which protection was attempted was 2,610 square miles against 2,605 in the previous year. The percentage of failure fell from 2.4 in the previous year to 1.6.

(c) *Protection from cattle.*

North
Circle.

70. The proportion of reserved forests and reserved lands open or closed to grazing was as follows:—

	1918-19.	1917-18.
Open to all animals except goats for the whole year	74.4	73.5
Closed to all animals for the whole year	19.3	26.3
Closed to all animals for part of the year	6.3	0.2

Goats with the exception of a few under the rights admitted at forest settlement, were excluded from forests. There was a decrease in the area closed to grazing for the whole year in *Godavari Lower* due to the incorrect figures furnished in the last year's return and in *Kurnool East* where all the forests were open to grazing for a period of four months on account of unfavourable season.

71. *Incidence of grazing*.—The incidence exceeds the possibility in several reserves. It remains to be seen whether the recent enhancement in the fees in the *Kurnools* will reduce it appreciatively.

72. *Introduction of the forest village system*.—The results of the enhancement of fees in the *Kurnools* during 1919-20 are awaited before taking steps to introduce the system in those divisions. The system is not suitable to the conditions of the other districts.

73. The number of cattle impounded was 25,145 as compared with 16,737 in the previous year and 22,379, the average of three years. Compared with the figures of the previous year, the increase was mainly in the *Kurnools* due to a large increase in the number of grazing offences.

74. The area closed and open to grazing is exhibited in Form 73. The total *Central* number of animals grazed on payment amounted to 583,511 cow units against *Circle.* 708,710 in the last year. The decrease was due to the enhancement of grazing fees in Anantapur district and to fewer foreign and local cattle resorting to the forests in consequence of the poor growth of grass owing to failure of monsoon in Guntur district.

As in previous years all reserves except Sriharikota reserve and casuarina plantations in Nellore district were worked under the kancha system during the year. Felled coupes were attached to the adjoining kanchas and were protected by the kanchadars. The unsold kanchas were protected by departmental staff. There were 365 kancha leases with an area of 281,221 acres open to grazing and 12,690 acres of closed area given to kanchadars for protection. Protection of kanchas in the Chingleput district was on the whole satisfactory. In Guntur district the kancha system was first introduced during the year and 2.67 square miles were placed under the system.

Semi-wild cattle.—The protection of the forests under closure in Sriharikota island of Nellore district remains a problem yet to be solved. The grazing fees were enhanced to one rupee per cow unit.

75. *Incidence of grazing*.—In *Bellary*, the question of judiciously enhancing the grazing fees with a view to limiting the number of cattle to the possibility of the reserve was dropped for the present by the Chief Conservator. It is proposed to take up the question of introducing the Forest village system in the district. In *Anantapur*, the incidence of grazing was one cow unit for 4.06 acres against one cow unit for 0.94 acre of the previous year. The Collector remarks on this as follows: "I found on examining the figures that 0.94 acre reported as the cow unit in the district last year was a mistake and that the real cow unit was 2.01 acres. The mistake arose by dividing the *closed* area by the number of cow units grazed instead of dividing the *open* area by the number of cow units grazed. But even after comparing the present year's incidence with the real one for last year, there has been a most satisfactory improvement in the grazing incidence as the result of enhancement of grazing fees. It is clear that useless cattle are not now taken to reserves to be grazed. I recently heard complaints on the Demakethapalle side of the Hindupur taluk, that owing to the enhancement of the fee on sheep from 1 anna 6 pies per head to 4 annas, many graziers had to sell away their sheep and have been deprived of their livelihood. The remedy for this evil, if it exists, is to disafforest portions of reserves too close to villages. The matter may be looked into." In *Guntur*, each cow unit got 4.02 acres against 3.42 acres of 1917-18 and 3.48 acres of 1916-17; this calculation of course includes steep hills and other inaccessible and ungrazable areas; it is therefore only a broad average obtained by dividing the whole acreage by the total number of cow units. In *North Cuddapah* the average incidence for the whole division is found to be 6.7 acres per cow unit. This is not excessive and the grazing possibility has not been exceeded. As a safeguard against excessive grazing, it has been ordered that all cattle living more than 5 miles from the reserved forests should be considered as foreign cattle and the grazing fees for such cattle should be Re. 1 per cow unit instead of the ordinary rate at 3 annas per cow. In *South Cuddapah*, the incidence of grazing is 7.5 acres per cow unit, the number of animals licensed being 30,948 cow units. In *West Cuddapah*, the incidence of grazing is 4.2 acres per cow unit against 5.9 acres in the previous year; in order to reduce the grazing incidence, the grazing fees for Sugali cattle and for cattle coming from villages beyond five miles from the reserve have been enhanced from 3 annas to Re. 1 and the closing of the plateau to grazing is under consideration. In *Chingleput*, the incidence of grazing was one cow unit for 2 acres generally except in Sriperumbudur and Sathiavedu ranges where the incidence was fixed at one cow unit for 4 acres and for one acre according to the nature of growth. In *Chittoor*, the grazing incidence is 3.7 acres per cow unit against 4 acres in the previous year.

South Salem.—The prolonged drought between July and October 1918 resulted in the seedlings of the year being killed off.

Trichinopoly.—The natural reproduction of *Dalbergia latifolia*, *Pterocarpus marsupium*, *Anogeissus latifolia* and *Albizia odoratissima* was fair on the Kollimalais.

Madura.—Coppice reproduction in the felled coupes was satisfactory.

Tinnevely.—The reproduction of *Balanocarpus utilis*, *Nephelium longana* and *Filicium decipiens* continued to be good but that of *Hardwickia binata* was again bad during the year. In some of the teak coppice areas the seedling regeneration was very good. 1918 was a good seed year for *Balanocarpus utilis* but it looks as if 1919 would be a bad one. 1918 was a bad year for *Gluta* but 1919 was good. It was found that *Acacia arabica* and *Acacia planifrons* subjected to coppicing and trimming of stumps produced no coppice shoots capable of living and more than 99 per cent of the regeneration was found to be natural. Wherever *Pterocarpus marsupium* grows regeneration has been found abundant.

BAMBOOS.

In *North Vellore*, *Dendrocalamus strictus* flowered in Shanankuppam and Thellai reserves. In *West Vellore* *Bambusa arundinacea* and *Dendrocalamus strictus* flowered over large areas on the Javadis. In *North Salem*, there was gregarious seeding of bamboos over a major portion of Denkanikota range—the flowering here first began in 1916—and along the outer slopes of the Shevaroyis. In *Trichinopoly*, *Bambusa arundinacea* flowered gregariously in two reserves—it flowered here before in 1898—and sporadically in the Namakkal range.

Western
Circle.

88. In *North* and *South Mangalore* the season is reported to have been a bad one for the seeding of *Hopèa*, in *South Coimbatore* the District Forest Officer reports having noticed *Pterocarpus marsupium* and *Dalbergia* seedlings in large numbers and in *South Malabar* natural reproduction of teak was plentiful in the clear felled plantations, and the seedlings were utilized for “supplying” vacancies. Practically nothing has been reported from other divisions regarding seeding of any timber trees. The District Forest Officer, Central Coimbatore, however reports that seedlings of *Pterocarpus marsupium* in the Chinnar forests are “splendid.”

(b) Artificial reproduction.

Northern
Circle.

89. *Regular plantations.*—No extensions were made.

90. *Cultural operations.*—Nothing worthy of special mention was undertaken during the year. Small areas artificially sown, in particular with *Cassia auriculata*, *Santalum album*, *Pterocarpus santalinus*, but results obtained were poor in all cases owing to the failure of the monsoon. However in *Gōdāvari Lower*, 50 acres ploughed and sown with *Cassia auriculata* are reported to be doing well, as are the sandalwood dibblings in the Kondapalli reserve in the *Kistna* district. Small dibblings of sandal and red sanders were successfully carried out in various places in *Ganjām* district. In *Ganjām*, an attempt was made to start the Taungya system 1.7 acres being cleared and sown with field crops and red sanders. So far it is successful. Famine prevented further operations.

The Vernacular Training School made numerous experiments. Details are given in Form 75.

Central
Circle.

91. Form No. 75 shows the area under artificial reproduction.

92. *Regular plantations.*—There were no new plantations added; but 203 acres in *Guntūr* were sold and 108 acres in *South Cuddapah* disafforested and these were excluded. In *Bellary*, no fresh planting was undertaken in the Moka plantation during the year. The crop which consists chiefly of casuarina, sissoc, *Albizia lebbek*, Tamarind, *Melia indica*, *Pithecotobium dulce* and *Pongamia glabra*, have attained to a height of from 15 to 50 feet and the girth ranges from $1\frac{1}{2}$ to $3\frac{1}{2}$ feet. Dead trees of casuarina and sissoc were felled and disposed of during the year. In *South Cuddapah* out of the 500 red sanders seedlings transplanted from a nursery two years back in the recleared area of the Kodur red Sanders plantation during 1916, only 110 plants were surviving and these have been watered by the plantation watchers for

the last two years. Kanuga, vepa, etc., seedlings planted up round the Balapalle and Mogilipenta bungalows are doing well.

Nellore.—Casuarina plantings were given up altogether and the existing plantations are being sold with the land piecemeal year after year.

93. *Cultural operations—Bellary.*—The experimental sowings of tangedu and *Hardwickia binata* over small plots were carried out. *Anantapur*—cultural operations for the spread of sandal were carried out over an area of 238 acres by dibbling seeds and freeing existing trees of creepers, etc., at a cost of Rs. 57-10-0 and except the area operated on in Amagondapalayam reserve they proved successful. The Collector remarks: “This strengthens my observation”. Tangedu seeds were sown in furrows two feet apart in three reserves covering an area of 167 acres. The sowing owing to unfavourable weather conditions, was conducted late in the year and the few that germinated have subsequently died out. It remains to be seen if further germination would take place this year after the rains. *Guntūr.*—Scarcity of rain was very great during the year and it accounted for the failure of almost all cultural operations. Six hundred acres of Muttayapalem and Kondavid reserves were sown with tangedu seeds but only 20 per cent of the seed germinated on the whole, while probably three-fourths of those which did germinate, succumbed later on for want of moisture. Two plots were selected in Bollandapalli reserve, and one in coupe 4 of Venkatayapalem reserve extension I for sowing sandalwood seeds; there was no germination in any of them owing to insufficient rain. One hundred seeds of vepa, dirsinam and babul and 2,500 palmyra seeds were dibbled in compartment II of Tekkallapad reserve free of cost by subordinates but the operation was unsuccessful for want of rain and also on account of the saline nature of the soil. *North Cuddapah.*—Four hundred palmyra seeds were sown in Rameswaram reserve of Vonipenta range and their germination was fairly successful; of the seedlings of 1917-18, about 50 per cent are thriving and are 2 to 3 feet high.

Tangedu sowing.—In Sidhout range, 26 acres were sown broadcast with seed at a cost of Rs. 62 near Kondur resthouse and the result was very encouraging, the seedlings are thriving well; in Vonipenta range over 50 acres in Kancherlamoram reserve and over 30 acres in Vedurur and Rameswaram reserves were sown broadcast and also in lines at a cost of Rs. 130 in all. The results were encouraging except in Vedurur and Rameswaram reserves where owing to the sandy nature of the soil the seeds did not germinate well. In Nallamalais and Veligondas of Porumamilla range about 56 acres were sown at a cost of Rs. 108-10-0. The regeneration was fair and the seedlings were reported to be thriving. In Badvel range seeds were sown broadcast in the Lankamalais and Veligondas, over 17 acres at a cost of Rs. 81-8-0, but the results were not encouraging. It is proposed to extend the experiment in contiguous areas in all ranges except Badvel for 1919-20. Seedlings of mango, Dirsinam and *Erithrina indica* in the rest-house compound of Brahmanapalle Malleinkonda and range quarters of Badvel range were thriving well. In Vonipenta range, seedlings of neem red sanders and sandalwood were doing well in the compounds of Bainapalle and Kothapalle rest-houses. In Porumamilla range some plants, namely, Yepi and Kanuga, were introduced in Venkatapuram tope and the seedlings were reported to be thriving. An experiment on concentrated regeneration of red sanders by dibbling in patches was tried in the Porumamilla range office compound but it proved unsuccessful; in its place *Albizia lebbek* was tried during the year and the result appeared to be promising. *South Cuddapah.*—In Chitvel range, tangedu sowings were carried on in five methods in five plots of one acre each. Though the germination was profuse in all the plots the seedlings were damaged by insects. The tangedu cultural operations in this district cannot be taken up on an extensive scale in the reserves. Most of the reserved forests are hilly. Sandalwood seeds were dibbled in coupe V of Thunukonda fuel working circle over an area of 2 acres in September 1913; 431 seedlings are now surviving. The same operation was carried out at Belamidipenta in Seshachellams of Kodur range; no seedlings sprouted. The seeds have been reported to have been eaten by rats. Eighteen seeds of sandalwood seeds were sown in the Seshachellam plateau of Rajampet range. The germination has not been satisfactory. In Salivendla reserve of Chitvel range sandalwood seeds were dibbled in an area of 3 acres. The seedlings that had come up were found to be $4\frac{1}{2}$ inches in height on an average. West

succeeded. In the Nilgiris the three experimental Eucalyptus plantations of 137 acres were maintained, the cost to the end of the year being Rs. 16,005. Four compartments (area not given) in Bandyshola Acacia Working Circle were planted but the District Forest Officer has not stated with what species. In Central Coimbatore Teak and Divi-Divi were planted in alternate lines in 43 acres of Chenat Nayar and adjoining forests and 75 per cent of the seedlings were thriving at the end of the year.

98. *Taungyas*.—In North Malabar which is the only division in which this method of re-generation is at all a regular institution, 20 acres were partly dibbled and partly planted with teak. The 13 acres in The Nilgiris (near Benne) sown in 1917 and reported last year to be a failure were re-sown in April—May and when seen by the Conservator in August appeared promising.

99. *Cultural operations*.—In North Mangalore the District Forest Officer reports that sowings of Hopea, Artocarpus, and Terminalia tomentosa and "other species" were carried out, but does not say what the other species were, nor does he give any details regarding locality or area. Two hundred and twenty-five acres were sown with sandal seed but nothing is stated as to the result. In South Mangalore a few thousand Hopea seedlings were planted in the rains of 1918, 50 per cent of them surviving the 1919 hot weather. In North Malabar 38 acres of jungle were cleared in patches of one acre in extent and sown with teak in the hot weather of 1919. Some sowing of sandal seed was done in Kollegal, the result being reported 'fairly satisfactory.'

In North Coimbatore 60 acres were dibbled with sandal seed near Dimbam. The Conservator has recently inspected the work; the results are distinctly promising, and with proper attention to the opening of the canopy to admit sufficient light to the seedlings, a work hitherto not undertaken, it should be possible to raise very valuable plantations in this locality which is as yet free from spike. In Central Coimbatore 41 acres were dibbled with sandal and the result is reported to be fair.

About 165 acres were sown with seed of araram (*Cassia auriculata*) in North Coimbatore, 10 acres in the Nilgiris and 529 acres in Central Coimbatore, but practically no germination resulted. In South Coimbatore under the prescriptions of the recently sanctioned working plan for the Tekkadi Leased and Mount Stuart forests, 25 acres were clear-felled and sown with teak seed with an espacement of 3' x 3'. Owing to the absence of the usual showers in April and May and possibly also to the use of bad seed, germination was not very satisfactory.

(c) *Operations for the improvement of the growing stock.*

100. Nothing was done.

101. *Timber improvement fellings*.—North Cuddapah, 437 acres, South Cuddapah, 1,657 acres, West Cuddapah, 1,699 acres, Chittoor, 281 acres were felled under this system.

Coppice felling.—Continued to be carried out in all the districts of the circle for supply of firewood.

Fencing of all felled coupes was as usual carried out by contractors. In Nellore and Chingleput felled coupes were fenced with trench and mound departmentally, the latter being planted with aloes where the outer coupe boundaries coincided with the reserve boundary itself.

Cutting of creepers and climbers.—Was carried out in all the districts except Anantapur and Guntur.

Stone walling.—Was done in Guntur, North Cuddapah, South Cuddapah, West Cuddapah and Chittoor districts.

102. The cutting of creepers affecting standards and other useful trees was, as usual, carried out by subordinates in most districts and felled coupes were fenced by the contractors. The matter of creeper-cutting has been referred to also under the heading 'protection against injuries from natural causes.' In the sandalwood area, tending and fencing operations prescribed in the working plans were carried out. The thinning of *Albizia amara* in the felled coupes of 1917-18 in the Sholavandan range prescribed in the Madura fuel working-plan was undertaken during the year; it is early yet to judge of results.

103. Light improvement fellings for Hopea and sandal were carried out over 664 acres in North Mangalore and over 4,740 acres in South Mangalore. Thinnings were carried out as usual in the Nilambur plantations, over a small area of teak plantations in North Malabar and the Nilgiris and in 14 acres of Eucalyptus high forest in the latter division. In South Malabar parasites (*Loranthus* sp.) were pruned in 822 acres of the Nilambur teak plantations, and climbers were cut in the plantations, marked for thinning and in those cleared of parasites. Improvement fellings were continued in the Mudumalai forest in the Nilgiris, 1,234 acres being worked over.

5. *EXPLOITATION.*

(a) *System of management.*

104. The various sylvicultural systems in force over the areas under sanctioned working plans as reported by District Forest Officers, are summarised below:—

Sylvicultural system.	Area in square miles.	Percentage.
(1) Method of clear-felling	20	00.73
(2) Selection fellings	277	10.12
(3) Simple coppice	336	12.27
(4) Coppice with standards	75	2.74
(5) Method of improvement felling	337	12.31
(6) Area for which working-plans have been prepared but not subjected to any definite system of working	1,693	61.83
Total	2,738	100.00

(i) *MAJOR FOREST PRODUCE*

(1) *Clear or regeneration fellings.*

105. Thirty-eight acres of compartment 9 of Kandikuppa plantation in Gōdāvari Lower, two coupes covering 554 acres in Kistna, and six miles of fire lines in Kurnool South were clear-felled.

(2) *Selection fellings.*

106. *Ganjām*.—Twenty sal trees of over 7½ feet in girth were extracted from Rambha reserved forest. Trees of 4½ feet in girth and upwards from unreserved lands and 634 trees from reserved forests were felled for supply of sleepers and building materials. *Gōdāvari Upper*.—Two thousand and seventy-seven logs which yielded about 35 thousands of cubic feet were felled from the unreserved lands in Bhadrachalam, Nugur and Cherla ranges. *Kurnool South*.—Three hundred mature palmyra trees were removed in Otk and Giddalore ranges.

(3) *Simple coppice.*

107. Twenty-six coupes with an area of 1,090 acres were worked in *Ganjām*, 20 coupes comprising 3,314 acres in *Gōdāvari Lower*; and fifteen coupes of 10,868 acres in *Kistna*.

(4) *Coppice with standards.*

108. Fifteen fuel coupes with an extent of 398 acres in *Vizagapatam*, two (189 acres) in *Kistna*, one coupe of 50 acres in *Kurnool East*, ten coupes (1,664 acres) in *Kurnool South* and three (332 acres) in *Kurnool West* were felled.

(5) *Improvement fellings.*

109. *Ganjām*.—Two hundred and twenty-six dead sal trees were removed. *Vizagapatam*.—The windfallen and top-broken sal trees in Donabai, Burnia extension and Samarelli forests were extracted. *Gōdāvari Lower*.—Compartment 10 of Kandikuppa plantation was thinned. Deadwood which yielded 9,558 cubic feet of fuel and 600 head-loads of brushwood were collected from compartments 10 to 14 of the same plantation. *Kurnool South*.—Over-mature trees were felled in five coupes covering 6,914 acres.

(6) *Unregulated fellings.*

110. These fellings were confined to the unreserved lands in all districts including the Rampa forests in *Gōdāvari Lower* and to the removal of palmyra trees in *Kurnool West*.

Northern
Circle.
Central
Circle.

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Cuddapah.—Tangedu seeds have been sown and are thriving well in parts. **Nellore.**—Sandal seeds were dibbled in small selected areas of all ranges and the percentage of success is about 40 per cent in all except Udayagiri and Nellore ranges. There are about half a dozen seedlings 3 to 4 feet in height under *Mimosa* *Angustifolia* in Sriharikota. Tangedu seeds were sown in an area of 584 acres in the closed areas of different reserves of the Kāvali and Nellore ranges at a cost of Rs. 1,200. The germination is good in most of the areas. Seed sown on slopes was washed away and in a few places the seed has died for want of moisture. Seeds sown on (1) red soils formed by the disintegration of laterite, (2) on clayey loamy soils and (3) on areas the grass and growth on which were cut and burnt germinated profusely and are doing well, while those sown in sandy and saline soils and on grassy plots failed utterly. **Chingleput.**—Sandal seeds were sown on Kambakkam and Nagalapuram hills in 1,370 pits but on account of drought all but 59 died. These are now in a healthy condition and average about 6 inches in height. Last year's seedlings on Kambakkam hills, about 200 in number, and in Guindy Park reserve about 500 in number are in good condition with an average height of 15 inches. At the instance of the Conservator, seeds of *Pterocarpus marsupium* and *Santalum*, *Anogeissus latifolia* and *Albizia amara* were dibbled in the felled coupes and in the hill areas. In most cases the seeds did not even germinate, and in some cases the seedlings did not thrive on account of the failure of monsoon. According to the provisions of the working plan seedlings of indigenous timber species such as *Melinis indica*, *Bassia latifolia*, *Eugenia jambolana*, *Albizia lebbek* and *Tamarindus indica* were planted in the five special working circles over 242 acres. About 25 per cent of them are successful. This kind of operation was also conducted in the compounds of bungalows at Kadapperi, Avadi and Thiruporur under Board's orders. Sowings and dibblings of avaram were done in 180 acres of Sriperumbudūr range, 23 acres of Sathavedu range and 5 acres of shrotriyam Pulikutti village of Saidapet taluk. The operation was a distinct success in all the reserves. **Chittoor.**—One hundred and fourteen acres in four ranges were sown with *Cassia auriculata* seeds after ploughing. The result was very gratifying in 26 acres of Panapakkam reserve, and fairly satisfactory in 50 acres (Nagapatla reserve), in the remaining 39 acres it was a failure due probably to bad season. Red sanders seeds were dibbled over an area of 40 acres in the Chittoor reserve and sandal seeds over an area of 529 acres in all the ranges. The seeds were dibbled in previously felled coupes which are fenced and closed to grazing. The practice adopted was to sow three seeds close together in thumb-holes at intervals of about 20 feet under shelter of bushy growth. The results, however, were not at all satisfactory owing to drought.

Southern
Circle.

94. **Regular plantations—North Vellore.**—Blank areas aggregating 17 acres were planted up with rosewood and *Hardwickia binata* in the Kilminnai, Virinjipuram and Tiruvallam working circles under the provisions of the working plan, red sanders and *Hardwickia* were dibbled on mounds in 26 acres of Chenur working circle, but there was no germination owing to drought.

South Vellore.—During the year the Amerdi plantation was transferred to this division from North Vellore. An area of 10 acres cleared last year was planted in groups with teak, sissoo, red sanders and rosewood. The results were unsatisfactory owing partly to the unfavourable season and partly to planting having been done too late. Sissoo did best. For planting during the current year, an area of 21 acres has been selected and cleared of growth. Pits for planting have been dug. Weeding and replacing of casualties were carried out in the older plantations.

Madura.—No addition was made during the year. In the two small teak plantations of Velankombai and Vannathiparai the growth of teak was excellent. As it was found that thinning was necessary selected trees were marked and sold. It is proposed to extend the Vannathiparai plantation and an estimate for planting 50 acres has recently been sanctioned. Blue gum trees in Gundashola continue to do well. In the pine plantations, *Pinus insignis* thrives very well and the growth of *Pinus attenuata* and *Pinus maritima* is fair. Steps are being taken to plant 100 acres in Gundar catchment area with *Acacia decurrens*.

Tinnevely.—Rs. 325 was spent in the Kodamadi teak plantation. Two and a half acres were added during the year. The plantation is doing well. One lakh

twenty-one thousand palmyra nuts were dibbled in blank areas in compartments of the Teri reserve at a cost of Rs. 254 and 75 per cent of them are reported to have germinated. This reserve originally about 20 square miles of drifting sand is of special interest to a Forest officer.

95. **Taungya—South Vellore.**—An attempt was made at raising teak along with an agricultural crop over an area of 10 acres in the Amerdi plantation. The pitting and planting work was done by the department and tending of the plants and keeping the area free from weeds were entrusted to a cultivator in return for the right to grow field crops. It is found that bisons damage the plants to a considerable extent.

South Arcot.—In addition to the two acres already existing in the Pakkam reserve another plot of two acres were planted up with teak. One thousand six hundred and five seedlings are reported to have been existing in the two bits at the end of the year, so the result is not very promising.

96. **Cultural operations—South and West Vellore.**—The cultural operations prescribed in the working plan were carried out and sandal seeds were extensively dibbled in the special tending areas of coupes I to III of the several felling series. Sowings were carried out amidst bushes having no sandalwood. The system of inducing the reproduction by scratching the soil under the healthy sandal trees and fencing round them was continued but results are not very evident. The past sowings in the special tending areas in South Vellore in coupe I of Komattiyeri in particular, were more satisfactory and the seedlings are well established. Steps were taken in South Vellore to induce natural regeneration from root suckers in the special tending areas in each coupe and the result has been very satisfactory so far; it remains to be seen if the suckers will form trees.

South Arcot.—Fifteen acres sown broadcast with teak in Pakkam reserve in 1917 proved a complete failure. The seeds of teak, sandal and red sanders sown broadcast during this year over a total area of 95 acres have given poor results owing to the want of rain. One hundred and eighty-two measures of avaram seed (*Cassia auriculata*) were sown as an experiment in ploughed furrows but the seedlings died in the hot weather.

North Salem.—Fifty-one measures of sandal were sown in blanks of coupes I in the felling series of Denkanikota and Anchetti ranges. The result was fair in the Denkanikota range but a failure elsewhere.

South Salem.—Sandal seeds were sown in blanks in coupes I and II of compartments 1 and 2 of the Chitteris working circle in accordance with the provisions of the working plan. Forty per cent of the seed sown is reported to have germinated. A considerable quantity of the sandal and other timber species and also of *Cassia auriculata* was put out elsewhere but though the germination was generally fair the seedlings except some *Cassia* did not survive the hot weather.

Trichinopoly.—The operations carried out during the year with sandal and red sanders proved a failure on account of the paucity of rains.

Tinnevely.—Seven hundred and seventy-one measures of seed of *Balanocarpus utilis* were dibbled in four places in the Ambasamudram range. The dibbling in some cases has been quite successful and it is proposed to extend the successful patches during the current year. To prevent destruction by pig, the seeds were coated with red lead, this had an excellent effect and is one reason for getting much better results during the year. Forty-two and a half bags of *Acacia planifrons* pods were collected and sown by subordinates in the Tinnevely range. *Hopea parviflora* and *Gluta* put out at Kannikatti in the previous years are healthy but the growth is very slow.

97. **Regular plantations.**—During the year, 71 acres of mature teak plantations and 90 acres of natural forests were clear-felled in South Malabar and partly planted with teak at a cost of Rs. 6,402. Planting in the 70 acres of mature plantation and 46½ acres of natural forests clear-felled in 1917-18, was completed during the year. In the latter area the sowing of *Terminalia tomentosa*, *Terminalia paniculata* and *Bombax malabaricum* seeds in 1918 failed and the sown area was planted with seedlings of the same species. The result was a practical failure, as regards *Bombax* only about 120 out of 2,600 seedlings surviving. Of the other species 50 per cent

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111. The total extent under working plans was 911 square miles and the various sylvicultural systems in force are shown below :—

Sylvicultural system.	Area in square miles.	Percentage of total area under each sylvicultural system.
(1) Method of clear felling by compartment	5	0.55
(2) Simple coppice	1	0.11
(3) Coppice with standards	133	14.60
(4) Improvement fellings	287	31.50
(5) Area closed to felling or worked under no definite sylvicultural system	485	53.24
Total	911	100.00

(1) Clear or regeneration fellings and (2) Simple coppice.

112. One hundred and twenty-three acres in Adoni range and Daroji coupe of Bellary district and 50 acres of Coupe VI of Tadipalli reserve of Guntūr district were clear felled. One coupe in Chamula range of Chittoor district and two coupes in Anantapur district were worked under simple coppice system.

(3) Selection fellings.

113. Fifty-six palmyra trees in compartment 2 (106 acres) of Takkellapad reserve of Guntūr district and all the bamboo blocks in West Cuddapah district were worked under this head.

(4) & (5) Improvement and coppice with standard fellings.

114. Improvement fellings—Anantapur.—The working plan provided for improvement fellings by the removal of deadwood and felling of useless species, but the prescriptions have not been carried out for some years and the sanction of the Board was obtained for the deletion of these prescriptions in Board's Proceedings Forest Mis. No. 116, dated 14th February 1919. North Cuddapah.—273 acres of Lankamalais and 164 acres of Nallamalais of Vonipenta range were worked under the method of improvement fellings. Fifteen coupes covering an area of 1,657 acres in South Cuddapah, 14 coupes covering an area of 1,693 acres in West Cuddapah division and 3 coupes of 281 acres in Chittoor district were worked under this system.

Coppice under standard system.—The following coupes were worked under coppice with standards, 24 coupes of 2,365 acres in Bellary, 19 coupes of 1,594 acres in Guntūr, 14 coupes of 1,253 acres in North Cuddapah, 7 coupes of 755 acres in West Cuddapah, 49 coupes of 4,121 acres and an area of 82 acres of casuarina coupes in Nellore, 15 coupes of 315 acres in Chingleput and 12 coupes in Chittoor district.

(6) Unregulated fellings.

115. No unregulated fellings were allowed. North and West Cuddapah.—When timber was allowed to be removed by free grantees a plot was selected and trees required to be felled were marked and hammer-marked under the principles of improvement fellings.

116. The total area of forests under working plans was 2,809 square miles. The various sylvicultural systems in force are shown in the following table :—

Sylvicultural system.	Area in square miles.	Per cent.
Simple coppice	334	11.89
Selection felling	399	14.21
Improvement felling	354	12.60
Coppice with standards	1,246	44.36
Pastoral methods	106	3.77
Forests for which working plans have been prepared but not subjected to any definite working.	370	13.17
Total	2,809	100.00

Southern
Circle.

(1) Simple coppice.

117. Under this system a coupe of 123 acres in North Vellore, 12 fuel coupes of 490 acres in South Vellore, 273 acres in North Salem and 6 fuel coupes in South Salem were worked. For most of these the system prescribed is coppice with standard, but on account of want of trees fit for standards simple coppicing was done. In Madura, simple coppice system was enforced in Sholavandan, Natham and Ayyalur ranges as per prescriptions of the revised working plan and also in Kodaikanal and Palni ranges.

The standing growth on the Kappalur reserve in South Vellore was clear felled with a view to its disafforestation.

(2) Selection fellings.

118. All the bamboo areas were felled under this system. One thousand seven hundred and thirteen selected sandalwood trees dead and dying on the Pachamalais and Kollimalais in Trichinopoly district were felled under the system. This would come more appropriately into the next paragraph.

(3) Improvement fellings.

119. Four coupes in North Vellore with an area of 152 acres and all sandal coupes in South and West Vellore and North and South Salem were worked under the system. Under the five years' scheme an area of 50 acres in Takarai Hill timber working circle was worked under the system in South Arcot district.

(4) Coppice with standards.

120. The following coupes were worked under this system :—

20 fuel coupes of 1,820 acres in North Vellore.
23 fuel coupes of 946 acres in South Vellore.
5 fuel coupes of 353 acres in West Vellore.
18 fuel coupes of 1,094 acres in South Arcot.
8 coupes of 1,424 acres in North Salem.
3 fuel coupes of 373 acres in South Salem.
9 fuel coupes of 516 acres in Trichinopoly.
49 fuel coupes of 3,046 acres in Madura.
and 16 ghaut forest coupes, 1 plain forest coupe and 7 tank-beds in Tinnevely.

(5) Unregulated fellings.

121. Unregulated fellings under the permit system were confined to unreserves under the management of the Revenue Department.

122. The total area of forests under working plans is 1,854 square miles. The several sylvicultural systems in force in this area are

Sylvicultural system.	Area in square miles.	Percentage of total area under each sylvicultural system.
Method of clear fellings by compartments	10	.54
Selection method	267	14.40
Simple coppice	73	3.94
Coppice with standards	200	10.79
Method of improvement fellings	140	7.55
Unregulated fellings	...	...
Forests for which working plans have been prepared but not subjected to any definite system of working.	1,164	62.78
Total	1,854	100.00

(1) Clear fellings.

123. In South Malabar 100 acres of natural forest and 71 acres of teak plantation were clear felled for replanting with teak.

(2) Selection fellings.

124. These fellings were carried out over an area of about 2,305 acres in North Mangalore, South Mangalore, North Malabar and South Coimbatore.

(3) Simple coppice.

125. 49.21 acres of Eucalyptus and Acacia plantations in the Nilgiris were felled for the supply of firewood.

(4) Coppice with standards.

126. Five thousand and eight acres were felled in the four *Coimbatore* divisions and the two *Mangalore* divisions.

(5) Improvement fellings.

127. Were conducted over 1,523 acres in *North* and *South Mangalore* and the *Nilgiris*.

(6) Unregulated fellings.

128. Were almost entirely confined to waste lands under the management of the Revenue Department.

(ii) MINOR FOREST PRODUCE.

(1) Bamboos.

Northern Circle.

129. The right to extract bamboos was generally leased out. The removals from the Rampa forests in *Gōdāvari Lower* and from the reserved forests of Bhadrachalam and Nugur taluks were regulated by the permit system. In parts of *Kurnool East* and in *Kurnool West*, the *Chenchus* were employed by the department in felling bamboos and preparing splits and the right to purchase the outturn at fixed rates was leased out.

(2) Miscellaneous produce.

130. In *Ganjām*, *Khonds* were allowed to remove minor produce from reserved forests free in return for the services rendered by them in general and fire protections. Permits were issued for collection of produce from Rampa forests and Yellavaram and Polavaram agencies in *Gōdāvari Lower*. The system of departmental collection which was introduced in *Gōdāvari Upper* having resulted in a loss was abolished. In *Kurnool East*, minor produce was collected departmentally by *Chenchu* labour. The important products elsewhere were, as usual, leased out.

Tan stuffs.—The collection of tanning materials was completely under the control of the Munitions Board. The department got credit for Rs. 21,621 based on the average receipts from the sales of such stuffs during the five years preceding the war. This arrangement resulted in a loss of about one and a quarter of lakhs. Bark and Sumac of *Anogeissus latifolia* were collected as requisitioned by the Controller of Tanning Stuffs. The bark of boles and twigs was collected on a large scale especially in the *Kurnools* departmentally and through contractors to comply with the special demand of the Controller for supply of about 2,000 candies. As the extraction was undertaken as a war measure without any previously laid out system, there were indiscriminate fellings throughout the forests which resulted in considerable damage.

(3) Extraction of fodder.

131. The removal of fodder and thatch grass in *Coringa* and *Kandikuppa* forests in *Gōdāvari Lower* and from closed areas in *Kistna* and of fodder leaves from the mangrove forests in the latter division was leased out. One hundred and fifty-two cart loads of fodder grass from the reserved forests in *Kurnool South* and 128 in *Kurnool West* were removed on permits on payment. There was no demand for cut fodder in *Gōdāvari Upper*.

Free removal of fodder grass.—The concession of free removal of grass from reserved forests was allowed in *Vizagapatam* and in the *Kurnools*. It was availed of on a large scale in the *Kurnools* owing to scarcity of fodder outside the forests. There was no necessity for allowing the concession in the other districts.

(4) Hay-making.

132. The Military Grass Farms Department manufactured hay in *Kistna* and the *Kurnools*, paying a royalty of Rs. 2 per ton. The outturn was 4,627 tons.

(5) Grazing.

133. Grazing was, as usual, regulated by issue of permits. The revenue derived from grazing was Rs. 1,14,071.

(1) Miscellaneous produce.

Central Circle.

134. Minor produce was leased out to contractors as usual in all the districts except in the Sriharikota range of *Nellore* district, where the produce (*Nux-vomica*,

rattans, soap-nuts, tamarind and sarasaparilla) continued to be collected and sold departmentally. The increased seigniorage rate of Rs. 2 for manure leaf reduced the demand to a certain extent in *Anantapur* and *West Cuddapah* districts. Permits continued to be issued for stone, earth and road materials.

(2) Extraction of fodder.

135. Fodder grass was extracted by the Military Grass Farms Department in *Bellary*, *Anantapur*, *Guntūr*, *North* and *South Cuddapah* and *Chittoor* at Rs. 2 per ton removed. The fodder grass in the babul areas of *Guntūr* taluk was leased out to contractors and an amount of Rs. 4,111 was realised against Rs. 4,970 in the previous year. In *Bellary* Mr. Howes removed 1,041 tons against 800 tons in the previous year. In *Nellore* and *Chingleput* lessees of kanchas were given the privilege of removing fodder grass from the closed portions of their kanchas in return for the protection of the latter blocks and they were much benefited by the concession.

(3) Free-removal of grass.

136. The free removal of grass was allowed as usual in all districts except *Chingleput*, but the free removal was restricted in the three *Cuddapah* divisions to head loads only on account of hay required for supply to the military department. In *North Cuddapah* the concession was withdrawn in *Veligondas* of *Badvel* range as a punishment of large smuggling of timber.

(4) Hay-making.

137. No departmental hay operations were undertaken during the year except in *Guntūr* where about 124 tons of hay collected departmentally was supplied to the military and about Rs. 248 realized as a royalty at Rs. 2 per ton. The balance of hay (viz., 705 tons 1,115 lbs.) collected departmentally and remaining unremoved during the previous year was supplied to the military and 338 tons 646 lbs. of rejected hay was sold locally for Rs. 477.

(5) Grazing.

138. The revenue realised during the year was Rs. 3,47,929 against Rs. 3,46,692 in the previous year.

The increase was due to larger areas of kanchas sold and higher rates realized in *Chingleput* and to enhancement of grazing fees 3 to 8 annas a cow unit in *Anantapur*.

In *Nellore* the kancha system which was extended throughout the district the Sriharikota reserve and casuarina plantation on the coast has taken a firm root and is appreciated by the villagers. The Extra Assistant Conservator and the District Forest Officer toured in the district and conducted the kancha sales early in March 1919. The system has worked satisfactorily during the year. Mr. Sathe wrote an interesting memorandum on the kancha system at the request of the Board of Revenue. Now that the system is established fairly well and some kanchadars have formed themselves into informal village panchayats, it is probably advisable to encourage such panchayats by leasing the kanchas to them at a fixed rate for a definite period say two or three years instead of putting them to auction and raising unhealthy competition. Some kanchadars stated that if they were given long leases at the minimum rates, they would undertake to remove prickly-pear and improve the water-supply in grazing grounds.

(1) Miscellaneous produce.

139. Minor produce was as a rule leased out. With a view to reduce the possibility of illicit fellings, departmental collection of minor produce was continued in *Synagunta* and *Moidana* reserves in *North Vellore*. The produce collected including that of the previous year was sold for Rs. 2,921. Deducting Rs. 163 the cost of collection, the net profit was Rs. 2,758. In the same district removal of manure leaves on permits was prohibited during the year.

(2) Tan stuffs.

140. The right of collection of the barks of *Cassia auriculata* and *fistula*, and myrabolams was leased out separately and the revenue realised was credited to the Military Department. As a war measure the following quantities of tan stuffs and

bees wax were also collected and supplied under instructions from the Controller of Tan Stuffs. (The cost of collection was met from funds provided by the Military Department.)

					TONS.	QRS.	LB.
<i>North Vellore—</i>							
Anogeissus bark	...	...	...	...	9	23	19
Do. leaves (dry)	...	...	...	...	0	58	6
Bees Wax	...	...	...	...	0	4	6
<i>South Vellore—</i>							
Anogeissus bark	...	...	...	...	75	3	21
Do. leaves (roay)	...	...	...	...	1	21	2
Do. leaves (green)	...	...	...	...	9	17	25
Mixed leaves	...	...	...	...	1	21	13½
Zizyphus xylopyra fruits	...	...	...	...	13	67	22
Bark of Phyllanthus polyphyllus	...	...	...	...	0	3	14
Carissa spinarum leaves	...	...	...	...	0	13	4
<i>West Vellore—</i>							
Anogeissus bark	...	...	...	...	94	33	0
Do. leaves	...	...	...	...	1	61	0
Bees wax	...	...	...	...	0	17	0
<i>Madura—</i>							
Anogeissus bark and leaves	...	...	...	...	16	58	11

In addition, seeds of *Cassia auriculata* were collected departmentally and supplied to different provinces and the other circles.

(3) *Extraction of fodder.*

141. Free removal of grass was allowed in *North* and *South Vellore* and *South Arcot*. In *South Vellore* free removal of thatch grass was largely availed of but the free cutting and removal of fodder grass permitted under the special orders of the Collector on account of fodder famine was not availed of to any appreciable extent.

In *South Arcot* the concession was availed of only in the Kallakurichi range. Owing to drought and fodder scarcity free cutting and removal of grass were permitted from certain closed coupes in *North* and *South Salem* districts. In *Madura* the removal of Hariali grass from Bryant Park reserve in Kodaikanal range was allowed as usual, on permits.

(4) *Hay-making.*

142. In *North Vellore*, grass was leased out to the Military Department on payment of a royalty of Rs. 2 per ton of hay removed. A sum of Rs. 247 only was realized against Rs. 971 in the previous year. The fall was due to poor growth of grass. Four hundred and sixty-nine tons of hay were collected departmentally in Mordana reserve and supplied to the Military Department. The revenue realized was Rs. 19,717 and the total cost of the operation was Rs. 11,082.

In *South Salem*, hay operations were started in the Papireddipatti range for supply to the army but they were stopped on account of drought in the district. The quantity manufactured about 24 tons was sold to the villagers at cost price.

(5) *Grazing.*

143. The revenue derived from grazing was Rs. 2,10,887 against Rs. 1,94,541 in the previous year. The increase was due to the enhancement of grazing fees in *West Vellore* and *North* and *South Salem* districts. The collection of panchayat assessments of 1919-20 in advance and transfer of four reserves from *South Salem* division accounted for the increase in *Trichinopoly* district. On the other hand there was a considerable fall in *South Arcot* due to the disafforestation of several 'provisional' class IV reserves. It is proposed to sell the growth in these areas and then disafforest them for cultivation.

(1) *Bamboos.*

144. Forty-nine thousand two hundred and fifty-three acres of bamboo coupes were leased out *North* and *South Mangalore* and *North*, *South* and *Central Coimbatore*. Removals on permits were allowed in the two Mangalore divisions, *South Malabar*, *Nilgiris* and *Kollegal* to meet local demands. Bamboos were also extracted departmentally in *North Mangalore* and *South Malabar* for floating timber.

(2) *Miscellaneous produce.*

145. Minor produce of importance was as usual leased out except in the Mudumalai range of the Nilgiris where the collection is made departmentally, and

Tunacadavu range of South Coimbatore division where the collection was given up on account of the danger of fire. Removal of stone, metal and gravel was allowed free in the Nilgiris and on permits in *South Coimbatore*. In *North Mangalore*, catechu was manufactured departmentally. Collection of honey and wax and the bark of *Anogeissus latifolia*, *Phyllanthus emblica* and *Elaeodendron glaucum* in *North Coimbatore* and of bark of *Anogeissus latifolia* in *Central Coimbatore* were undertaken departmentally.

(3) *Extraction of fodder grass.*

146. Removal of fodder grass was allowed on permits in the two Mangalore divisions, the Nilgiris, Kollegal and North and South Coimbatore divisions. In a few cases in *Central Coimbatore* and the Nilgiris the right of removal was sold.

(4) *Hay-making.*

147. Hay-making operations on a large scale were undertaken in both the Mangalore divisions to meet military requirements and 1,145 tons of hay were despatched to the Bangalore Grass Farm.

(5) *Grazing.*

148. Grazing was as usual controlled by permits.

(b) *Agency of exploitation.*

(i) DEPARTMENTAL AGENCY.

149. *Major produce.*—10.7 per cent of the total outturn was exploited by this agency. The important works were:—the selection fellings and the supply of sleepers and building materials in *Gunjām*, extraction of dead sal trees in *Visagapatam*, felling of trees from the unreserved lands of four ranges and the supply of fuel to the Public Works Department for the consumption of steam launches in *Gōdāvari Upper*, clear felling and thinning in *Kandikuppa casuarina* plantation in *Gōdāvari Lower*, removal of dead trees from the forests in *Kurnool East*, felling timber and fuel from the disafforested area in *Siddapuram* and in *Velgode* reserved forest, experimental fellings in connexion with the supply of fuel to the Kurnool Town in *Kurnool West*, and the collection and disposal of *Anogeissus* timber and fuel in the *Kurnools* felled for extraction of bark.

150. *Minor produce.*—The particulars are mentioned in paragraphs 128 and 129 supra.

151. *Disposal of produce at the edge of the forests.*—The outturn of fuel in *Kandikuppa* plantation in *Gōdāvari Lower* was sold in the plantation. Timber collected in *Kurnool East* was disposed of from depots opened in or near the forests. Timber and fuel felled in *Kurnool West* was sold by auction according to demand.

(ii) BY PURCHASERS.

152. *Major produce.*—All the fellings referred to in paragraphs 106 and 107 and the extraction of overmature trees from coupes in *Kurnool South*, were carried out through the agency of contractors.

153. *Minor produce.*—The extraction of bamboos and collection of minor produce as detailed in paragraphs 128 to 132 supra.

(iii) & (iv) BY RIGHT HOLDERS, AND UNDER PRIVILEGES AND FREE GRANT.

154. The following statement shows the quantity and estimated value of produce removed by right holders and free grantees:—

Agency.	Timber.		Fuel.		Bamboos.	Grazing.	Minor produce.	Total.
	In thousands of cubic feet.	Value.	In thousands of cubic feet.	Value.	Value.	Value.	Value.	Value.
Right holders	3	290	154	2,900	54	1,138	23,571	27,963
Free grantees	33	2,168	..	..	334	13,647	559	17,608
Total	36	3,458	154	2,900	388	14,785	24,130	45,571

The rights under forest settlement were enjoyed chiefly in *Ganjām* and *Kurnool West*. The value of produce enjoyed was Rs. 27,963 against Rs. 36,766 in the previous year. The hill tribes in *Ganjām*, *Vizagapatam* and the *Gōdāvaris* availed themselves of the privileges of free grazing and removal of forest produce. Free grazing was permitted in the forests of the *Kurnools* owing to scarcity of fodder.

The estimated value of free grants made during the year was Rs. 17,608 against Rs. 24,926 in the previous year. The free grants were mostly for rebuilding houses destroyed by fire.

(i) DEPARTMENTAL AGENCY.

Central
Circle.

155. Except the collection of tangedu seed, *Anogeissus* bark, *Zizyphus Xylopyra* fruit and bees' wax, no other departmental collection was undertaken except in *Chingleput* where the unfelled areas in certain plains coupes were worked departmentally in order to avoid deviations from the working plans, and in *Nellore* district where the collection of minor forest produce was done departmentally through the agency of the Government Yanadis. The decrease under timber was due to a smaller quantity of timber felled for departmental buildings and the increase under fuel was due in *Nellore* to the quantity obtained in *Sriharikota* coupe which the contractor left after the contract was cancelled, and also to the clearing of growth in several reserves for the formation of inspection lines and boundaries and in *Chingleput* to the unfelled portions of coupes having been worked departmentally in the plain areas of *Chingleput* range in order to avoid deviating from the prescriptions of the working plan. The increase under bamboos was due to extraction on a larger scale for departmental buildings and for construction of hay ricks; the decrease under minor produce was due mainly to the stopping of departmental hay operations in all districts. The large decrease in *Nellore* was also due to the failure of crops owing to a storm and to the realization of about Rs. 3,000 (sale proceeds of nux vomica seeds) after the close of the forest year.

(ii) BY PURCHASERS.

156. *Timber*.—The decrease was due to fewer darkhast applications received during the year in *Bellary*, *Guntur* and *Chingleput*; in *Chittoor* to the retention in timber coupes of all species capable of producing good timber; and in *South Cuddapah* to the non-working of some coupes by the contractors.

Fuel.—The decrease was contributed by the following districts:—

Bellary.—Due to the decrease in the number of fuel coupes sold consequent on the handing over of the leased forests to the Sandur State; *Guntur*.—to the fact that 21 coupes could not be sold for want of demand; *South Cuddapah*.—to the cause already stated under timber; *Nellore*.—to the slow progress of exploitation in the *Sriharikota* coupe owing to the cancellation of the contract of the previous contractor to the want of waggon supply, and to the prohibitive cost of transport by boats and carts.

Chingleput.—Due to less quantity of withered and wind fallen trees from porambokes.

Bamboos.—The decrease was more a matter of adjustment of lease amounts than an actual deficit.

Minor produce including grazing.—The decrease was chiefly due to the crediting of the revenue from lease of tanning barks to the Military department and to the exclusion of revenue derived from mica from forests.

(iii) RIGHTS AND PRIVILEGES.

157. Free removal of grass appears in paragraph 136 supra.

In *Anantapur* 42 cubic feet of timber was admitted at the time of settlement of *Dokkalakonda* reserve to be removed for the purpose of making a ladder for a temple and this was granted during the year. In *North Cuddapah* the concession of free grazing of 45 cows, 190 buffaloes and 850 sheep of *Zangalapalli* and *Velugupalli* villages over an area of 810 acres in the *Lanakamalai* reserve was continued during the year. Under B.P. Forest Mis. No. 744, dated 1st December 1914, the villagers of *Chennupalli* and *Gopavarampalli* of *Porumamilla* range were allowed to graze 150 cows at one anna each. The Collector, taking into consideration

the poverty of Muhammadan wood-cutters of *Sidhout* range of *North Cuddapah*, allowed them the privilege of grazing their bulls (24) in the reserve on payment of half the seigniorage rates, i.e., As. 1-6 per head. In *South Cuddapah* free grazing of 691 cows and bulls was allowed to the ryots of *Settigunta* and its hamlets according to the terms of the forest settlement. In *West Cuddapah* the privilege of grazing of 328 cattle was allowed in *Sidhout-Palakondas* at As. 1-6 per head as per B.P. Forest No. 376, dated 22nd June 1895.

(iv) FREE GRANTS.

158. The statement appended below shows the details of free grants which were made chiefly for rebuilding houses destroyed by fire. In *Nellore* grants were made for building huts for criminal settlement. Road materials were removed in *West Cuddapah* and *Chittoor* by public bodies for public works.

	Timber.		Fuel.		Bamboos.		Grass and grazing.	Other minor produce.	Total value.
	Cubic feet (in thousands).	Value.	Cubic feet.	Value.	Number.	Value.	Value.	Value.	
Right-holders	..	Rs. 10	..	..	..	Rs. 78	Rs. 130	Rs. 140	Rs. 140
Free grantees	34	6,405	..	..	4,520	78	185	455	7,123
Grants at reduced rates.	..	..	..	..	..	..	43	..	43
Total ..	34	6,415	..	..	4,520	78	358	455	7,308

* Forty-two cubic feet.

(i) DEPARTMENTAL AGENCY.

159. The work done by departmental agency was chiefly confined to the extraction of sandalwood and the collection of tan stuffs and hay for military purposes. In addition timber required by the Remount Depot at *Hosur* was felled and supplied.

(ii) BY PURCHASERS.

160. There has been an increase in the removal of bamboos and minor produce and decrease in that of timber and fuel.

Timber (—36,000 cubic feet).—This is always a variable head depending chiefly on the revenue derived from the value of trees on darkhast lands.

Fuel (—2,225,000 cubic feet).—The outturn of fuel removed by purchasers during the previous year was exceptionally high on account of sale of growth in reserves to be disafforested in *South Arcot* and *Trichinopoly*. The decrease in these two districts alone amounts to 2,391,047 cubic feet. Fewer coupes were sold in *West Vellore*, *Trichinopoly* and *Madura* for want of demand. This head also depends on the revenue from sale of withered and windfallen trees on poramboke and waste lands—a variable item.

I think the figure is however only of value for purposes of comparison as it is obtained in the two instances given largely by converting rupees into cubic feet.

Bamboos (+ Rs. 17,085).—The increase was due to larger areas leased in accordance with the revised scheme in *South Salem* and *Trichinopoly* and to keen competition among the contractors.

Grazing and minor produce (+ Rs. 39,891).—The increase was chiefly due to the enhancement of grazing fees. It was also due to advance collection of minor produce lease amounts of 1919-20 in *Trichinopoly* district and credit in the accounts of 1918-19.

(iii) RIGHTS AND PRIVILEGES.

161. In *North Vellore* grazing at the ordinary rate of 3 annas per cow unit was continued to the Malayalis in anticipation of the introduction of the forest village system. A scheme for its introduction in *Thellai* reserve has been submitted. In the *Javadis* of *South* and *West Vellore* the system of allowing free grazing and giving fire rewards to the Malayalis in return for the protection of forests assigned to them

for grazing was continued and has been working satisfactorily. The rights admitted at settlement in the Palamalai extension, V. Kanapadi reserves and to the villagers near the Gundur and Ariyurshola reserves in *Trichinopoly* are reported to have been enjoyed but no details are furnished.

(iv) FREE GRANTS.

162. The estimated value of free grants was Rs. 10,079 against Rs. 4,884 in the previous year.

The following abstract shows the quantity and the estimated value of produce removed by right-holders and free grantees:—

	Timber.		Fuel.		Bamboos.	Grass and grazing.	Other minor produce.	Total value.
	1,000 c.ft.	Value.	1,000 c.ft.	Value.	Value.	Value.	Value.	
Right-holders	..	Rs.	..	Rs.	Rs.	Rs.	Rs.	Rs.
Free-grantees	..	Rs.	..	Rs.	Rs.	Rs.	Rs.	Rs.
Total	49	5,781	4	430	246	3,402	1,148	11,005

The grants were chiefly made for rebuilding houses destroyed by fire. In *West Vellore* a small grant of timber was sanctioned for the construction of the Dharma-raja temple at Nellivoy on the Jaradis as an encouragement to the Malayalis. The increase in the value of free grants was due chiefly to the free removal of a larger quantity of fodder grass from *North Vellore* and to larger numbers of grants made in the *South Arcot* and *South Salem* districts and to the transfer to this (the correct head) of the value of free grazing on the Amptill Downs reserve and of quarrying in *Madura* district.

(i) DEPARTMENTAL AGENCY.

Western
Circle.

163. *Major produce.*—Timber was for the most part extracted departmentally, as was also fuel in certain cases. The extraction of sandalwood was entirely departmental. The more important operations were the selection fellings in *North Malabar* where the timber is sold at forest depots, the clear fellings and thinnings of the plantations in *South Malabar* where the timber is floated to the coast and sold at Beypore, the selection fellings in *South Coimbatore* where the timber is extracted by tramway and road and sold at Pollachi, the selection fellings in *South Mangalore* where the timber is sold at stump sites, the improvement fellings in the Mudumalai forests of The Nilgiris, the fuel fellings under simple coppice in the eucalyptus plantations of The Nilgiris, the coppice with standard fuel fellings in *North* and *South Mangalore* and the extraction of sandalwood in *North Coimbatore* and *Kollegal*, the wood being roughly cleaned in the forest and carted to Satyamangalam where it is finally cleaned, classified and sold by auction.

Minor produce.—The chief departmental operations were the supply of hay from *North* and *South Mangalore* to the Military Grass Farm at Bangalore, and that of tanning barks from *North* and *Central Coimbatore*.

(ii) BY PURCHASERS.

164. *Major produce.*—Fuel coupes were as a rule sold standing, the total area sold being 4,922 acres in *North* and *South Mangalore* and four divisions of *Coimbatore*.

Minor produce.—Bamboo coupes were sold standing and other minor produce was for the most part leased out.

165. *Disposal of produce at the edge of the forests.*—*Mangalore North*—373 tons of fuel obtained from improvement fellings were sold at the edge of the forests. *South Mangalore*—6,107 c. ft. of timber and 750 tons of fuel collected departmentally were sold in the coupes. *North Coimbatore*—Agricultural implements were retailed in the forest depots. *Central Coimbatore*. Small fuel in head loads was retailed in the coupes by contractors.

(iii) & (iv) BY RIGHT-HOLDERS AND UNDER PRIVILEGES AND FREE GRANTS.

166. Produce is removed by right-holders only in the two *Mangalore* divisions. Free grants were made chiefly for the reconstruction of houses burnt by fire and for the quarrying of metal and gravel by the Local Fund and Public Works Departments. Free grazing valued at Rs. 1,110 was as usual granted to the Todas and Chettis in the *Nilgiris*.

(c) Outturn and sources of produce.

167. The subjoined table compares the outturn of produce collected by different agencies with that of the previous year:—

Northern
Circle.

Agency of exploitation.	Timber in thousands of cubic feet.		Fuel in thousands of cubic feet.		Bamboos in value.		Minor produce (including grass and grazing). Gross value in rupees.	
	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.
Government	77	169	126	347	Rs. 9,723	Rs. 22,792	Rs. 18,487	Rs. 43,154
Purchasers	867	534	3,201	3,087	1,34,373	86,936	3,85,777	3,90,417
Right-holders	76	3	581	164	705	64	24,775	24,709
Free grantees	42	33	..	..	1,570	334	15,250	14,108
Total	1,062	739	3,908	4,588	1,46,371	1,10,126	4,44,289	4,75,386

168. *Government agency—Major produce.*—The increase under timber was chiefly due to fellings in *Ganjām* for supply of sleepers and building materials and to the exploitation of increased area of unreserved lands in *Gōdāvari Upper*, while that under fuel was due to sale of top portions of timber felled in *Ganjām*, partly to the incorrect figures furnished in the last year's return and partly to the experimental fellings in *Coringa* extension in *Gōdāvari Lower*, to the clearance of areas disafforested for cultivation and to the collection of *Anogeissus* fuel left after extraction of bark in *Kurnool West*.

Minor produce.—The increase under bamboos was due to increased area from which bamboos were extracted by *Chenchu* labour in *Kurnool West* and to a large collection in *Ganjām* and in the *Gōdāvaris* for construction of and repairs to buildings. The increase under other produce was chiefly due to the collection of tangedu seeds and *Anogeissus* bark and Sumac in the *Kurnools*.

169. *By purchasers—Major produce.*—The outturn is unreliable as in several cases lease amounts are converted into outturn in proportion to the seigniorage and the accounts maintained by contractors are defective. The decrease under timber was chiefly in *Ganjām* due to departmental fellings in unreserved lands instead of through contractors as in the previous year, in *Vizagapatam* to fewer applications for darkhast lands, in *Gōdāvari Upper* to smaller demand for building materials by other departments, in *Gōdāvari Lower* to lack of demand for timber in *Rampa* forests, in *Kurnool East* to a large number of palmyra trees removed last year from disafforested areas and in *Kurnool South* to non-exploitation of timber coupes to facilitate the manufacture of hay by the Military Department. The increase under fuel was mainly in *Gōdāvari Lower* where coupes were opened in *Coringa* extension.

Minor produce—Bamboos.—The decrease was generally due to low prices offered for bamboo coupes owing to dullness of market, to want of demand in *Gōdāvari Lower* for sugarcane cultivation and construction of buildings and to the temporary reduction of seigniorage on removals from *Rampa* forests and to non-leasing of bamboos in *Kurnool South* in favour of hay operations. The increase under other produce which amounts to about Rs. 5,000 calls for no special explanation.

170. *By right-holders.*—The decrease in the quantity of timber and fuel was in *Ganjām* due to non-grant of concessions to *Khonds*.

171. *By free grantees.*—Being fluctuating, calls for no special explanation.

Bamboos, + Rs. 11,809; *minor produce* + Rs. 9,187.—The increases were mainly in *Kurnool West* owing to the larger outturn of bamboos by the *Chenchu* labour and to the abnormally heavy crop of tamarind and the consequent large supply to the Military Department.

(ii) *By purchasers.*

Timber,—Rs. 37,095.—Due chiefly to the departmental felling of sal areas instead of by contractors to meet the demand for sleepers and building materials, to lack of demand for timber from unreserved lands and Rampa forests in *Godavari Lower* for want of transport facilities and to the non-leasing of coupes in *Kurnool South*, the object being to facilitate the collection of hay by the Military Department.

Fuel,—Rs. 14,501.—The decrease was chiefly in *Kistna* due to poor price realized for coupes and to non-sale of some of the coupes for want of demand and in *Kurnool South* for the reason given against '*Timber*' supra.

Bamboos,—Rs. 52,826.—The stoppage of fellings in *Kurnool South* to set free labour for the hay operations, the slack demand in *Godavari Upper*, the absence of demand for bamboos for buildings or sugarcane cultivation owing to famine, and the reduction of seigniorage on removals from the Rampa forests in *Godavari Lower* and the departmental extraction by *Chenchu* labour in *Kurnool West* chiefly accounted for the decrease.

Grazing and fodder grass, + Rs. 5,307.—Due to the increased number of cattle licensed to grazing in *Kistna* and *Kurnool West and South* and to the enhancement of fees for Lambadi cattle in the last division.

Minor produce,—Rs. 1,14,181.—The decrease was chiefly due to the assumption of complete control over the tan-stuffs by the Munitions Board, the Forest Department receiving only the payment of an amount equal to the average receipts by the lease of such materials during the quinquennium before the war.

(iii) *Miscellaneous (including confiscated drift and waif wood).*

+ Rs. 2,880. Calls for no special remarks; the receipts are of fluctuating nature.

EXPENDITURE.

A. *Conservancy and works.*

+ Rs. 16,997. The exploitation of timber in *Ganjām* for supply of sleepers and building materials mainly accounted for the increase.

B. *Establishments.*

The increase which amounted to Rs. 41,754 was chiefly due to the grant of war allowance.

176. The subjoined statement compares the results of the year with those of the previous year and with the previous quinquennial average :—

	1918-19.	1917-18.	Average of the previous five years.
Revenue	Rs. 10,81,869	Rs. 14,20,770	Rs. 12,50,988
Expenditure.			
A.—Conservancy and Works including refunds.	2,07,092	3,20,693	2,52,959
B.—Establishments	4,82,457	3,59,254	3,87,035
Total of A and B ..	6,39,549	7,09,947	6,39,995
Net results .. +	4,42,320	7,19,823	6,10,993

There is a surplus of Rs. 4,42,320 in favour of the year against that of Rs. 7,10,823 obtained in the previous year and of Rs. 6,10,993, the quinquennial average.

(1) The decrease in surplus in the year is due to a decrease of Rs. 3,22,804 under II (e) *Minor forest produce* owing to crediting the lease amounts of *cassia auriculata* and *cassia fistula* barks and other tanning materials to the Military

Department and also to a decrease of Rs. 8,613 under II (a) *timber* and of Rs. 8,514 under V (b) *Miscellaneous* which are variable heads.

(2) During the year the revenue decreased by Rs. 3,38,901 and the expenditure by Rs. 70,398.

(3) Of the receipts 23 per cent were realized from major produce, 52 per cent from grass and grazing, 36 per cent from minor produce and 9 per cent from miscellaneous items.

(4) Of the expenditure 1.47 per cent was directed towards exploitation, 36.35 to the upkeep and improvement of the forests and 62.18 per cent to miscellaneous items. The outstanding revenue at the close of the year was Rs. 6,23,069 of which Rs. 14,492 fell due within the year. The estimated value of timber and other produce at sale depots at the close of the year was Rs. 6,081 against Rs. 403 at the beginning of the year. The important variations between the actuals of the year and those of the previous year are explained below :—

RECEIPTS.

(i) *By departmental agency.*

The increase under minor forest produce is due to adjustment by the Military Department of value for the balance of hay collected in the previous year, despatched during the year.

	Rs.
Timber	425
Fuel	181
Bamboos	11
Sandalwood	76
Minor forest produce	8,032

(ii) *By purchasers.*

	Rs.	
Timber	8,613	Timber, — Rs. 8,613.—This is a fluctuating item, the chief source to it being the value of trees on unreserved lands assigned on darkhast.
Fuel	1,594	
Bamboos	1,746	
Grazing	1,237	
Minor forest produce	8,30,997	

Fuel,—Rs. 1,594.—Due to low prices realized by the sale of coupes owing to the control exercised on railway transport.

Bamboos, + Rs. 1,746.—Due to better prices realized for bamboo coupes in Chittoor district.

Grazing, + Rs. 1,237.—Due to larger areas of kanchas sold and higher rates realized in Chingleput and to enhancement of grazing fees from 3 to 8 annas a cow unit in Anantapur district.

Minor forest produce,—Rs. 3,30,997.—The decrease is due to the same cause explained for the decrease in the surplus of receipts during the year—vide paragraph 175 (1) supra.

(iii) *Miscellaneous (including confiscated and drift and waif wood).*

— Rs. 9,043 due to there having been no sales of disafforested blocks as there was in the previous year in Bellary district and to smaller number of forest offences compounded and consequent short collection of compounding fees in Anantapur North and South Cuddapah districts.

EXPENDITURE.

A. *Conservancy and Works.*

— Rs. 1,13,601 due to the hay operations conducted by the department in the previous year having been stopped during the year.

B. *Establishment.*

+ Rs. 43,203 due (1) to payment of privilege leave and furlough allowances to Mr. H. B. Bryant, Conservator of Forests, during his stay of about four months in India, plus salary to the acting officers in his place, (2) to sanction and payment of local or war allowances to subordinates on Rs. 50 and below and (3) to additional

Central
Circle.

172. The total outturn of produce collected by different agencies compared with the previous year is appended below :—

Agency of exploitation.	Timber including sandalwood in thousands of cubic feet.		Fuel in thousands of cubic feet.		Bamboos in number.		Minor produce (including grass and grazing). Gross value in rupees.	
	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.
By Government Agency ..	15	12	56	62	11,175	23,090	Rs. 1,23,895	Rs. 53,850
By purchasers (including confiscation) ..	873	712	7,662	6,512	12,679,487	1,428,616	9,46,945	7,97,939
By right-holders ..	..	..	..	..	..	..	..	..
By free-grantees ..	40	34	..	..	12,760	4,520	741	150
Total ..	934	768	7,708	6,594	2,706,422	1,453,232	10,73,724	8,52,559

* Forty-two cubic feet.

† Correct figure furnished by the District Forest Officers.

The variations have already been explained in paragraphs 154 and 155 supra. The rates of grazing fees levied in different districts are given in Form No. 74. The number of animals licensed to grazing on payment was 729,797 against 916,360 in the previous year.

Southern
Circle.

173. The total outturn is given in the following statement :—

Agency of exploitation.	Timber including sandalwood in thousands of cubic feet.		Fuel in thousands of cubic feet.		Bamboos in value.		Minor produce including grass and grazing value.	
	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.
By Government Agency ..	23	32	40	43	Rs. 532	Rs. 711	Rs. 20,009	Rs. 21,286
By purchasers ..	758	762	5,626	3,401	1,14,876	1,31,626	4,38,310	4,77,837
By right-holders ..	..	..	..	..	..	..	..	..
By free-grantees ..	24	49	3	4	290	246	8 55	928
Total ..	825	823	5,669	3,448	1,15,497	1,32,582	4,68,580	5,03,471

The variations have already been explained. The rates of grazing fees levied in the several districts are shown in Form No. 74. The actual number of animals licensed on payment was 554,994 against 670,190 in the previous year.

Western
Circle.

174. The subjoined table compares the outturn of produce through all agencies with that of the previous year :—

Agency of exploitation.	Timber including sandalwood in thousands of cubic feet.		Fuel in thousands of cubic feet.		Bamboos in value.		Minor produce including grass and grazing in rupees.	
	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.
By Government agency ..	517	675	549	316	Rs. 10,142	Rs. 14,833	Rs. 39,581	Rs. 47,957
By purchasers ..	883	889	4,903	4,311	36,634	33,657	1,67,317	2,09,977
By right-holders ..	27	19	..	..	..	..	..	..
By free-grantees ..	13	9	..	..	8	38	1,438	3,607
Total ..	1,420	1,592	5,762	5,427	46,784	48,428	2,08,556	2,60,251

By Departmental Agency—Major produce.—The increase under the head of timber was chiefly due to departmental fellings in North and South Malabar. The selection felling in the former division and the clear felling for planting in the latter having been done departmentally during the year under report, while similar fellings in the previous years were done by contractors who purchased the timber standing.

Minor produce.—The increase under bamboos was due to departmental timber operations in South Malabar, the bamboos being required for floating. The increase under minor produce was due to increased supplies to the Farms Department and Controller of Tan Staffs, 1,145 tons of hay being supplied from North and South Mangalore and 30,576 lb. of barks from North Coimbatore, 2,800 lb. from Central Coimbatore and 345 lb. from Kollegal.

By purchasers.—The increase under minor produce is due to higher prices, to the leasing out of the right to collect Cassia fistula and Phyllanthus emblica barks, to the increased demand for tanning stuffs and to the higher grazing fees imposed in North Coimbatore.

CHAPTER III.—FINANCIAL RESULTS.

175. The financial results of the year are compared with those of the last year and the average of the preceding five years in the following abstract :—

Northern
Circle.

	1918-19.	1917-18.	Average of the previous quinquennium.
Revenue ..	Rs. 6,95,155	Rs. 8,29,435	Rs. 7,93,978
Expenditure ..	7,797	2,354	9,378
Refunds ..	2,50,831	2,33,834	2,92,076
A. Conservancy and Works ..	4,18,105	3,76,351	3,81,997
B. Establishments ..	..	..	..
Total expenditure ..	6,76,643	6,12,539	6,83,951
Surplus ..	18,512	2,16,896	1,09,127

NOTE.—The above figures exclude the actuals belonging to Gajgonda and Hill Madgole.

As compared with the previous year, there was a heavy decrease in receipts and a considerable increase in expenditure. The surplus fell by about 2 lakhs. The chief cause for this position was the European war. The control of tanning stuffs by the Munitions Board, the stoppage of several of the remunerative works in the Kurnool to facilitate the collection of hay by the Military Department, and the restrictions on transport by railway which considerably affected the demand and prices for forest produce mainly contributed to the decrease in revenue. Thirty-three per cent of the revenue was derived from major produce, 41 per cent from minor produce, 17 per cent from grass and grazing and 9 per cent from miscellaneous sources. Of the expenditure 17 per cent was incurred on the exploitation of forests, 27 per cent on the upkeep and improvement and 56 per cent on miscellaneous items. The revenue outstanding at the close of the year was Rs. 1,18,249 against Rs. 1,34,807 at its commencement; of the former, Rs. 12,593 fell due within the year which was less than half of the amount similarly due at the end of the previous year. The estimated value of the produce in the sale depots at the end of the year was Rs. 25,957 against Rs. 11,083 at its beginning; most of the stock consisted of the unsold sleepers in Ganjam.

The important variations between the actuals of the year and those of the previous year are explained below.

RECEIPTS.

(i) By departmental agency.

Timber, + Rs. 52,147.—The increase occurred chiefly in Ganjam due to the supply of sleepers to the Indian Munitions Board and Messrs. Bird & Co., Calcutta, and building timber to the Public Works Department, in Godavari Upper to the extraction and sale of timber from unreserved lands and in Kurnool South to the sale of the last year's stock of timber.

Fuel, + Rs. 2,993.—Due chiefly to the sale of top portions of trees felled in Ganjam for supply of sleepers and building materials, fuel felled in a tank in Kurnool East for providing labour to the Chenush and Anogeissus trees felled for extraction of bark in Kurnool West.

establishment of 6 rangers for West Cuddapah district, 32 guards for Guntūr, 4 foresters for South Cuddapah and 3 foresters and 24 guards for Chingleput district sanctioned in the temporary scale during the year.

Southern Circle.

177. The financial position of the year under report is compared with that of the previous year and the average of the preceding five years in the following abstract:—

	1918-19.	1917-18.	Average of the preceding five years.
Revenue	Rs. 14,22,218	Rs. 15,93,840	Rs. 13,37,365
A.—Conservancy and Works (including refunds) ..	3,13,979	2,87,255	2,50,845
B.—Establishment	4,32,134	4,24,100	3,91,628
Total expenditure ..	7,46,113	7,11,355	6,42,373
Net surplus ..	6,76,105	8,81,985	6,94,992

The gross receipts of the year were less than those of the previous year by Rs. 2,71,122 and the expenditure exceeded that of the previous year by Rs. 34,758. The net surplus fell short of that of the previous year by Rs. 3,05,880 and that of the preceding quinquennium by Rs. 18,887. The previous year's revenue was a record one due partly to the capital value of reserved forests sold in *South Arcot* and partly to the sale of a very large quantity of sandalwood from trees blown down by the cyclone in the Javadis. There were no such extraordinary items during the year under report.

Towards receipts, major produce contributed 53.1 per cent, minor produce 40.9 per cent, and miscellaneous sources 6 per cent. 7.4 per cent of the expenditure was on exploitation, 43.1 per cent on the upkeep and improvement of the forests and 49.5 per cent on miscellaneous items. The proportion of net to gross revenue fell from 57.9 per cent to 47.5 per cent. The outstanding revenue at the close of the year was Rs. 4,23,309, of which Rs. 38,271 fell due within the year. The estimated value of timber and other produce at the sale depots at the close of the year was Rs. 1,12,737 against Rs. 1,68,982 at the beginning of the year.

RECEIPTS.

The important variations between the actuals of the year under report and those of the previous year are explained below:—

(i) By departmental agency.

Sandalwood, — Rs. 1,19,798.—In the previous year sales were abnormal on account of the removals necessitated by the cyclone of 1916.

Minor produce, + Rs. 12,517.—Due to the supply of hay departmentally to the Military Department from *North Vellore* division.

(ii) By purchasers.

	Rs.
Fuel	1,83,299
Bamboos	26,718
Grazing	16,346

These variations are due to causes referred to in paragraph 159 supra.

Minor produce, — Rs. 21,839.—Due to the credit of revenue from leases of tanning barks to the Military Department which gave credit to this department only for the amount of the average of the five years previous to war.

(iii) Miscellaneous (including confiscated drift and waifwood).

— Rs. 3,967 due to a less number of offences compounded.

EXPENDITURE.

A. Conservancy and Works.

The expenditure during the year under report exceeded that of the previous year by Rs. 26,724. The increase was chiefly under I (d) due to the purchase of patta sandalwood trees on the Tiruppattur Javadis, under I (e) due to hay-making operations in the *North Vellore* and *South Salem* divisions, under VII (b) due to heavy expenditure on buildings in *South* and *West Vellore* and *South Arcot* districts and under VIII (g) due to tending, etc., operations carried out in *North Salem* in accordance with the prescriptions of the Hosur sandalwood working plan, clearance of prickly-pear in *South Salem* and *Madura*, and payment of war allowance to reserve watchers.

B. Establishment.

The expenditure on establishment increased by Rs. 8,034 when compared with the previous year. There was an increase of Rs. 32,137 under I (e), due to payment of war allowance. This was partly counterbalanced by savings under Salaries and II. Travelling allowances due to the abolition of the working-plans establishment and the posting of a Provincial officer to the charge of *North Salem* division.

178. The financial results of the year are compared with those of the previous year and the average of the preceding five years in the following abstract:—

Western Circle.

	1918-19.	1917-18.	Average of the preceding five years.
Revenue	Rs. 17,17,267	Rs. 14,89,495	Rs. 10,57,403
Expenditure—			
Refunds	3,894	5,792	4,942
A.—Conservancy and Works ..	6,47,341	4,84,234	4,62,566
B.—Establishment	4,18,655	3,90,641	3,80,072
Total expenditure ..	10,69,690	8,80,567	8,47,680
Surplus ..	6,47,677	6,88,928	2,09,723

There was an increase in the surplus during the year under report of Rs. 58,749. Of the total receipts 69 per cent was realized from major produce, 10 per cent from minor produce, 8 per cent from grass and grazing and 13 per cent from miscellaneous sources. Of the expenditure, 50.8 per cent was devoted to the exploitation of the forests, 25.5 per cent for their upkeep and improvement and 23.7 per cent to miscellaneous items. The revenue outstanding at the end of the year was Rs. 4,35,744, of which Rs. 70,777 fell due within the year. The estimated value of the produce in sale depots was Rs. 1,38,893 against Rs. 5,83,388.

The important variations between the actuals of the year under report and of the preceding year are explained below:—

RECEIPTS.

(i) By departmental agency.

Bamboos, + Rs. 4,520.—The increase was in *South Malabar* due to the sale of a larger number of bamboos used for floating.

Sandalwood, + Rs. 2,13,674.—This is due to the fact that in the previous year very little sandalwood was sold.

Grass and other minor produce, + Rs. 36,237.—Due to the realization of the sale-proceeds of hay supplied to the Farms Department in the previous year.

(ii) By purchasers.

Timber, — Rs. 15,970.—The decrease was in *North Malabar* and was due to the fact that timber was extracted departmentally, while in 1917-18 it had been sold standing.

Bamboos, — Rs. 4,119.—Due to the sale of a smaller number of coupes in *Central Coimbatore*.

Grazing, + Rs. 59,981.—The increase was in the four divisions of Coimbatore due to the enhanced rates of grazing fees.

Minor produce,—Rs. 5,947.—Due to the realization from Avaram, Konnai, etc., barks having been credited to the account of Central War Controller instead of to 'Forests.'

(iii) *Miscellaneous*.

— Rs. 34,330.—Due to the realization of a smaller amount by sale of elephants.

EXPENDITURE.

A. *Conservancy and works*.

+ 1,63,107.—The chief causes which contributed to the increase were: the increased felling of timber and bamboos, hay operations on a larger scale for supply to the Farms Department, the purchase of a greater number of bullocks and buffaloes, the capture of more elephants and the increased cost of maintenance of live-stock owing to the rise in cost of grain, the purchase of tramway materials, formation of new plantations, heavier cost of maintenance of young plantations, extensive sowing operations; clearing of prickly-pear over a larger area, and generally the rise in wages.

B. *Establishment*.

+ Rs. 28,014.—The increase was due to the increase in the rate of war allowance paid to subordinates.

CHAPTER IV.—RESEARCH AND EXPERIMENTS.

Northern
Circles.

179. *Experiments—Ganjām*.—Two experiments near Tarasingi were made to see whether cut back sal switch growth in bamboo areas can hold its own against cut back bamboos. Several experiments in the seasoning of timbers in various ways are now being made. *Gōdāvari Lower*.—The attempt to kill *Zizyphus Oenophia* and other creeper by painting the cut stumps with lime paste again proved a failure. *Kurnool West*.—Attempts to inoculate *Butea frondosa* trees with lac were continued. A few trees were successfully inoculated.

RESEARCH.

Central
Circles.

180. No research work was undertaken. The necessity for the establishment of a research institute appears to have been recognized and an Imperial officer (Mr. D. T. Barry) has been appointed during the year.

181. *Experiments—Bellary—Tangedu*.—Experimental plots were sown with tangedu seed in different localities during the year with a view to determine the best method of cultivation and the soil best suited for its growth.

(1) One acre in Jagikalkutta reserved forest and 10 acres in Sogi reserved forest were ploughed and seeds sown broadcast. The operation was successful and it has been proposed to extend operations during the current year in adjoining areas.

(2) The operation of last year in Bandri reserved forest was continued this year and 4 acres in plots of one acre each were sown under the following methods:—

Plot A.—Seed sown broadcast and then ploughed over once.

Plot B.—Area first ploughed, then seed sown broadcast and then ploughed again.

Plot C.—Ploughing in squares and seeds dibbled in at the corners of the squares.

Plot D.—Areas fully ploughed and then seeds dibbled in furrows two feet apart. The germination was more successful where the soil was sandy and soft than in stony soil.

(3) Ten acres of land in Kakkuppi extension reserve were ploughed and seed sown broadcast and then ploughed over again. The operation was found to be a complete success and it is proposed to extend it in 1919-20.

(4) In Dharmapuri reserve seven acres of land were ploughed and sown broadcast with tangedu seeds. About 70 per cent of the seedlings have survived.

(5) The area of two acres sown in Banavasi reserve in October 1917 with tangedu is reported to be a success and about 75 per cent of the seedlings survive.—another 2 acres in the same reserve was similarly treated in September 1918 and is reported to be also successful.

(6) In Kuppagal reserve two acres of land were ploughed and weeded and tangedu seeds sown broadcast and also dibbled in furrows four feet apart. Although the seeds germinated they died off during the hot weather. It is now proposed to start a demonstration area in Anantapur under a special staff to ascertain the best and cheapest way to raise tangedu from such. The tangedu sowing operation of the previous year in Bellary range proved a failure. *Hardwickia binata* seeds were sown under the following methods in an area of 21 square chains in seven plots in Bandri reserved forest.

Plot 1.—Ordinary seed dibbled three feet apart.

Plot 2.—Ordinary seed dibbled in pits three feet apart.

Plot 3.—Seeds soaked in water for 48 hours and dibbled three feet apart.

Plot 4.—Seeds soaked in water for 48 hours and dibbled in pits three feet apart.

Plot 5.—Seeds specially prepared in a pit; that is seeds packed in alternate layers with manure in a pit covered up with earth and water for about two weeks, dibbled three feet apart.

Plot 6.—Seeds soaked in pits three feet apart.

Plot 7.—This was divided up into three plots namely (1) seedlings reared in baskets from ordinary seeds, (2) seedlings reared from seed soaked in water for 48 hours and (3) seedlings reared from seed specially prepared. The plots 1, 3, 5 and 7 were found to be a total failure; in 2, 4 and 6 seedlings in about 45 per cent of the pits were found but subsequently they also died off for want of rain.

The experimental operation of *Hardwickia binata* of last year were unsuccessful in Hospet, Harpanahalli and Adoni ranges.

Sandal.—The sowing of sandal seeds along the vanka in Bandri coupes III and IV was a failure and the experimental sowing of sandal in one acre plot in Somalapuram reserve met the same fate for want of rain.

Anantapur.—Tangedu seeds were sown in furrows two feet apart in three reserves covering an area of 167 acres. The sowing owing to unfavourable weather conditions was conducted late in the year and the few that germinated have subsequently died. It remains to be seen whether further germination will take place this year after rain.

North Cuddapah.—Redsanders. A sample plot of two acres had been laid out in Pitchireddibhavi coupe 2, to ascertain the best way of getting regeneration of red sanders and also how to help the established seedlings. The results are being watched.

Sandalwood.—The older saplings of sandal near Vaneswaram stream are thriving well. Close to this area and in selected localities in the Nallamalais and in Lankamalais of Vonipenta and Porumamilla ranges sandal seeds were sown in June 1919 and the germination is fair throughout.

South Cuddapah.—In the experimental plots laid out in Kodur red sanders plantation in the Ballapalle range by the Imperial Sylviculturist proved a failure in spite of every attempt made to keep the seedlings free from the weeds. The cause of failure was due to want of sufficient moisture in the soil.

An experimental plot of $2\frac{1}{2}$ acres in extent was taken in Kodivengammabhavi coupe No. 1 of north series of Kodur range and several experiments made in five parts of the plot by sowing red sanders. Though all apparently died in April and May it was observed that some were reviving after the rains.

An experiment was made to study the growth of red sanders in an area of 1 acre in Coupe No. 1 of Gadela improvement felling series. There were 124 seedlings and 158 coppice shoots. In April and May 1919 it was observed that 118 seedlings had apparently died and all coppice except four were thriving. After the first break of the monsoon in the latter part of June 1919, 67 seedlings were found living and all the coppice surviving. It is thus seen that most of the seedlings that died back in the hot weather sprouted again after the first few showers.

Tending seedlings in the improvement coupes with the object of increasing the stock of valuable species is of utmost importance, though it may appear expensive to start with.

With the object of finding out the girth and height increment in Rajampet range sample plots of 1 acre each were opened in 5 coupes in October 1918 and their measurements were recorded at the same time. Measurements will be recorded again in the 5th year as per provisions of the working-plan.

West Cuddapah.—Tangedu seeds were sown in all ranges; it is partially successful in three ranges and failed in others owing to prolonged hot weather and want of timely rain.

Sandal seeds were sown in selected plots immune from fire in all ranges but the operation was not successful except in one range.

In Konarazupalle a 30 feet square plot was selected for carrying out experiments on the Shumac of *Anogeissus latifolia*, and the results will be carefully watched, leaves plucked periodically and results recorded.

Nellore.—The caterpillar that was attacking *Anogeissus* was collected in various stages and sent to Entomologist, Dehra Dun, for identification and under his instructions the experiments are continued. In Udayagiri and Rapur ranges experiments were conducted for preparing Shumac and the results are awaited.

In *Chinglepet*, fruits of samples of *Zizyphus xylopyra* were sent to Messrs. Chambers & Co., and Messrs. Best & Co., to be tested. No report has been received from the former. The fruits sent to the latter were reported to be too green to be of use.

In *Chittoor*, girth measurements of red sanders in the sample plot started by the Madras Forest College in Chittoor Reserved Forest were taken and recorded. The results of the experimental burning of 2 acres in the Inuparallamitta felling series of 1917-18 have not yet been recorded.

RESEARCH AND EXPERIMENTS.

Sandal.

*Southern
Circle.*

182. *The effect of girdling*.—The experiments still continue in *West Vellore*, but seem to show that girdling does little except cause a slight discoloration in the immediate neighbourhood of the place girdled.

Is sandal an obligate root parasite?

Experiments continue in both *South* and *West Vellore* districts at Komattiyeri and Melpat both with grown trees and with seedlings; the chief difference being that at Melpat the healthiest trees found were selected, whereas those at Komattiyeri were certainly no more robust than their neighbours. In both localities, a trench is dug till it reaches the subsoil and kept absolutely clear of all vegetation. Inspection is made quarterly by the District Forest Officer and I saw those near Komattiyeri myself in March 1919. There is no difference between the trenched trees there and their neighbours. In the case of the seedlings plots at Komattiyeri, a plot 10 feet in diameter was trenched to the subsoil; all vegetation was removed before the seed was sown, and the plots are kept scrupulously clean. The only conclusion so far is, that if the sandal is an obligate parasite, many of the plants must "take in one another's washing". The fact that sandal is usually a root parasite and is the better for such parasitism is not disputed. I should add, that these seedlings are occasionally watered. There are 13 plants from the seed sown in August 1916 of which, 4 are particularly strong, the tallest being 7' 10" in height, and 3½" in girth at the base. In the case of 7 plots sown on 19th July 1917 the seedlings in one plot have died out. The other 6 plots contain 18 plants, the tallest of which is 5' 1" high most being between 2 and 3 feet in height. *Jatropha curcas* seems to make a particularly good host—the plant mentioned as being 9 feet high in the last report is now 13' 1" high and others sown at the same time (19th July 1917) are 9' 9", 7' 5" and 5' 10" in height.

The Andiappanur experiments (West Vellore).

The roots of the four sandal trees under treatment (roots exposed, rootlets cut and sulphuric acid poured in to auger holes) have shown no signs of spike, nor for that matter do they show any appreciable signs of having suffered from the treatment.

Production of root suckers.

Trenching in sandal areas has been continued in *South* and started in *West Vellore* districts. It certainly gives some results and it remains to be seen whether the shoots will form satisfactory trees, or, remain stunted as is common with the tamarind.

Spike disease.

The attempt to stop the spread of 'spike' at Nellivasal, in *West Vellore* by removal of all growth has not been completely successful as ten spiked trees have been found in July 1919, just outside the area dealt with. The process of removing *Zizyphus ænopia*, *Scutia*, *Dodonaea* and *Cipadessa fruticosa* and the sandal is being repeated.

The report of the officer on special duty investigating the spike disease of sandal has been sent separately to the Chief Conservator of Forests.

The experiment in sowing seed from spiked trees was a failure as very few seed germinated and what did grow were eaten by cattle.

Trees suffering from 'Lanky spike' or 'lanky degeneration' seem to revert to normal after a time, no tree under observation has yet done otherwise.

The disease seems to have got into the Kollimalai hills in *Trichinopoly* very badly, a report received on 8th September showing 4,000 trees attacked at Puliyan-sholai alone.

Bamboos.

Experiments on a small area are being carried out in *South Vellore* with *Dendrocalamus strictus* to ascertain—

- (1) the length of life of the culms,
- (2) whether any external features can be relied on to determine the age of a culm,
- (3) what rotation will give most culms,
- (4) how to thin a clump to facilitate working,
- (5) whether the time of felling affects the growth of further culms.

Results can only be expected after a series of years.

The experiments in *South Salem* with *Bambusa arundinacea* have died a natural death as the bamboos have flowered. This flowering by the way is more or less universal in the Shevaroy and in the Denkanikota range (*North Salem*) near Aiyur.

Thinning of Teak and Albizzia Amara Coppice.

In the case of *Albizzia amara* it seems to make no difference whether the trees are cut flush with the ground or 8" above it, or whether the stumps are trimmed or left rough. As regards the reduction of the number of shoots on a stool it would appear to be appreciated as *Madura* reports that thieves single out the stems from thinned stumps for special attention. I saw most of these experiments, which are in *Madura* district in August 1919.

As regards the thinnings in teak coppice at Mundanthorai no information has again been furnished and there has been a change of officers in the district charge lately.

Hardwickia Binata.

Pruning continues to give satisfactory results in *North Vellore*.

Mahogany.

Most of the mahogany trees in the Marudain tope in South Arcot district have been stolen—the ranger has since been invalided. It is perhaps worth noting that the trees just below the 'Thirtheadoddi' in the Alagar Hill reserve in Madura district put out about 1892, are reproducing themselves. The largest trees here were 6' 5½" and 5¼" in girth at breast height with clear boles of 18' and upwards in length.

Regeneration in Evergreen Forests.

Timmevelly continued to work at *Balanocarpus utilis*, *Hopea parviflora*, *Filicium* and *Gluta* but has not reported results. My personal inspection in March gave me the impression that he was inclined to keep too heavy cover overhead in order to keep down weeds. The coating of the seed of *Balanocarpus* with red lead has apparently disgusted the pigs and the seedlings are now much more numerous.

Inquiries about Tanning Materials.

West Vellore sent specimens of leaves of *Phyllanthus polyphyllus* and *P. emblica* and fruits of the latter to the Controller of Tan. Stuffs, Madras, but has not heard of the results.

Western
Circle.

183. The more important experiments and research work carried out during the year have been—

(1) *Sylviculture.*

(a) *Sowing.*—In North Mangalore seed of *Hopea parviflora*, *Terminalia tomentosa*, *Artocarpus hirsuta*, *Lagerstræmia lanceolata*, *Dalbergia*—probably *Sisoides*—*Xylia xylocarpa* and *Terminalia paniculata* were sown broadcast in small experimental gardens. It is not stated whether the sowing was done under shade or in the open or whether the soil was prepared in any way. No result has been reported. In South Malabar seed of *Terminalia tomentosa*, *Lagerstræmia flos-reginae* and *Adina cordifolia* was sown broadcast in a nursery. In North Coimbatore unsuccessful attempts were made to raise *Pterocarpus santalinus*; the seeds germinated, but the young plants died in the hot weather. In the same division an attempt was made to enlarge a 'shola' which had suffered from fire by sowing along its outskirts, species usually found in such forest. The Conservator has recently inspected this work. The results are poor as shola species will not as a rule grow on the bare hill sides outside the sholas, but a certain number of seedlings of *Eugenia* sp., *Machilus* sp. and of an unknown species have germinated. In Central and South Coimbatore seed of *Eucalyptus tetracarpis*—which species is said to grow well on the plains of Nellore was sown both in nurseries and in the forest. No germination has taken place. In South Coimbatore also seed of *Dalbergia latifolia*, *Pterocarpus marsupium* *Bauhinia* sp., *Acacia* sp., *Tamarindus indicus*, and *Albizia amara* were sown in various plots. Plots of pure teak raised from seed in previous years in this division were tended. In various divisions seeds of *Cassia auriculata* were sown, but very little success was obtained.

(b) *Natural regeneration.*—In South Malabar a plot of *Xylia xylocarpa* was thinned and weeded in varying degrees of intensity in order to discover the requirements of this valuable species in the matter of reproducing itself naturally.

(2) *Spike disease.*

The only work done was that referred to in paragraph 84.

(3) *Utilization.*

Experimental seasoning of the timber of the following species was commenced in South Mangalore, North Malabar and Nilgiris—*Hopea parviflora* and *Wightiana*, *Eugenia gardneri*, *Hardwickia pinnata*, *Alstonia scholaris*, *Ficus asperrima*, *Vateria indica* and *Eucalyptus globulus*. From North Malabar, South Mangalore and Kollegal experimental supplies of *Grewia tiliaefolia* timber, *Besha* reeds (for tent poles), *Hopea* and *Cassia fistula* bark (for tanning) and oil from *Chloroxylon Swietenia* were sent to various firms and officials.

In Central Coimbatore 26 trees of *Zizyphus jujuba* were inoculated in October 1918 with lac; in December the result was good on 12 trees, passable on 5, and poor on 8.

As will be seen, experimental work is meagre. This is due partly to the absence hitherto of any settled policy and partly to the fact that District Forest Officers have, as a rule, too much other work to do to be able to devote the attention necessary for systematic work on experiments. An instance of the lack of system in the past is the case of Mahogany which has been experimented with in a spasmodic manner for upwards of 44 years, but presumably no conclusion has yet been arrived at, and certainly although *Swietenia macrophylla* grows well in certain localities (e.g., Chenat Nair forest in Central Coimbatore) no attempt has been made to cultivate it on any scale. It is hoped that with the appointment of a local Sylviculturist matters will improve in future.

CHAPTER V—ADMINISTRATION.

184. *Circle charge.*—Mr. H. A. Latham continued in charge of the Circle for the first half of the year. Mr. S. Cox succeeded him and remained up to the 31st May 1919, when he assumed the office of the Chief Conservator of Forests sanctioned for the Madras Presidency. From 1st June 1919, the charge was held by Mr. C. M. Hodgson.

185. *District and Range charges.*—There were no changes during the year.

186. *Establishments.*—The sanction of the Secretary of State for India was received during the year for the reorganization of the executive and protective staffs of the department.

Work and services.

187. *Controlling staff.*—The paucity of Imperial officers, due to deputation to Military service, made it necessary to place important divisions under Provincial officers. The work of all Imperial and most Provincial officers was satisfactory. Messrs. H. J. McLaughlin and A. Raju Nayaker deserve special mention for good work.

188. *Executive staff—Rangers.*—The Rangers on the whole are reported to have worked satisfactorily. Special mention has been made of some of the Rangers for good work; of whom, the most outstanding are T. E. Varada Achari and C. S. King in connexion with the timber operations in Ganjam, P. Ramani Menon for the management of the Vernacular Training school and S. Ramaswami Ayyar and K. V. Subba Rao for successfully conducting the prosecution of the proprietor of an estate in Gōdāvari Lower for demolishing cairns on the boundary of a forest.

Punishments.—Two of the four Rangers who were under suspension during the previous year were reinstated and the other two were dismissed. The services of one Ranger in Kurnool East were dispensed with, but he was reinstated on appeal and transferred to the Central Circle.

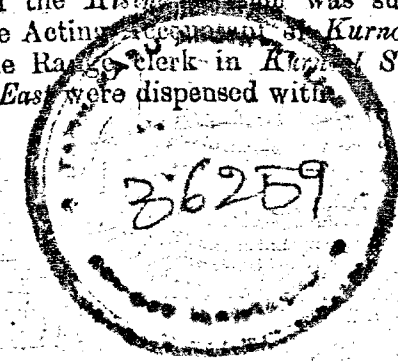
Deputy Rangers.—These have worked fairly well.

Punishments.—One Deputy Ranger was dismissed, one reduced and two were suspended.

189. *Protective establishment.*—The work and conduct of the staff except in Ganjam and Vizagapatam where it is reported to have been satisfactory and fair respectively, continued to be unsatisfactory.

Punishments, Foresters.—Two were dismissed, six suspended and six reduced. *Guards.*—Dismissals 6, removals from service 21, suspensions 34 and reductions 7. One Guard in Kistna was prosecuted for receiving illegal gratifications in connexion with a case of seizure and impounding of cattle, but was acquitted.

190. *Ministerial establishment, Divisional and Range offices.*—The work of the establishment was generally satisfactory. The general standard is low in Kurnool East and South divisions. Complaints are general regarding the difficulty of recruiting suitable candidates for junior clerkships owing to low pay and want of prospects. Favourable mention has been made of the head clerks of Ganjam and Gōdāvari Lower divisions. The head clerk of the Kistna division was suspended; one clerk in Vizagapatam was reduced; the Acting Assistant Commissioner, Kurnool South was dismissed for gross neglect of duty; one Range clerk in Kurnool South was dismissed and the services of one in Kurnool East were dispensed with.



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191. *Health of the establishment and casualties.*—The health of the establishment was as usual bad except in *Kistna* and *Kurnool West*; in the latter division it was not so bad as in the last year. Influenza caused 37 deaths. Fifteen subordinates died of malarial fever, six of cholera and two of other causes.

192. *Relations between Revenue and Forest officials.*—The relations continued to be cordial. None of the Forest officers except the Range officers in *Gōdāvari Upper* and *Kurnool South* attended the jamabandi of Revenue Divisional officers. It was not in practice in *Gōdāvari Lower*, *Kistna* and *Vizagapatam*. In *Ganjām*, the District Forest Officer was engaged in the preparation of working plan and the Rangers were not directed to attend as there were no important questions for decision. The non-attendance in the other divisions has not been explained, but there were no complaints or matters of importance to deal with.

193. *Service books.*—Maintained and verified up to date in *Vizagapatam*, and to the end of the calendar year in *Gōdāvari Upper* and of the financial year in the remaining districts.

194. *Tours of the Forest Member.*—The Forest Member visited *Kistna* and the *Kurnools*.

195. *Conservator's inspection.*—All the District Forest offices except the *Gōdāvari* and *Kistna* were inspected with satisfactory results except as regards *Kurnool South* which was in bad order. The forests of *Ganjām*, *Gōdāvari Lower* and the *Kurnools* were also inspected and notes of inspections recorded except for *Ganjām*. The number of days spent in camp was 207.

196. *Touring of District Forest Officers.*—All District Forest Officers except the District Forest Officers of *Kurnool, East* and *South*, spent more than the minimum period on tour. The short touring in *Kurnool East*, was due to the charge having been held by the District Forest Officer, *Kurnool West*, for about five months, while that in *Kurnool South*, is attributed partly to the ill-health of the District Forest Officer and partly to his long stay at headquarters necessitated by the changes in the office establishment.

197. *Audit of accounts of the District Forest offices.*—The accounts of all the offices except *Ganjām* and *Gōdāvari Upper* were audited by the Local Fund Audit staff. The general results are reported to be satisfactory.

198. *Inspection of range offices.*—All the range offices except one in *Kurnool East* and all sale depots were inspected with generally satisfactory results.

199. *The Imperial Forest Research Institute and College.*—One probationer returned to the circle after passing the course, but was subsequently transferred to the Andamans. Two nominees to the Provincial service were deputed to undergo training.

200. *The Madras Forest College.*—Four students of the 1917-19 course secured the higher standard and two the lower standard certificates. One of the five students deputed for 1918-20 course was sent back as he was unable to follow the course. Five deputy rangers were selected for the 1919-21 course.

201. *The Vernacular Training School.*—The 1919 session of the school was held in *Ganjām*. The school started with thirty students (3 foresters and 27 guards) deputed from all the divisions. The conduct and health of the students with a few exceptions was satisfactory. One guard died of cholera and another of influenza. The results of the session reflect great credit on the District Forest Officer and P. Ramunni Menon, the senior instructor.

Central
Circle.

202. *Circle charge.*—Mr. H. B. Bryant was in charge of the circle from 1st July 1918 to 2nd January 1919, Mr. H. P. A. Wood from 3rd January 1919 to 17th June 1919 and Mr. A. B. Jackson from 18th June 1919.

203. *District and Range charges.*—No change occurred in the number of district charges of the circle. Consequent on the handing over of the Sandur leased forests to the Sandur Darbar from 1st July 1918, the amalgamation of the Hospet range partly with Bellary and partly with Kudligi ranges which was under consideration was given effect to from 1st August 1919. A third range, i.e., Sriperumbudur range, was formed in *Chingleput* district with effect from 1st November 1918.

204. *Work of superior officers.*—The remarks of the Collector are given below :—

Mr. J. I. Smith (Bellary).—I have no remarks to offer.

Mr. T. Raghavayya (Anantapur).—Mr. Myer's work continued to be good.

Mr. S. M. V. M. Oosman Sahib (Guntūr).—I assumed charge of the district on the 5th February 1919. The periods during which M.R.Ry. V. Raman Menon and Mr. D. L. Sathe worked under me are too short to express an opinion about their work.

Mr. J. R. Krishnama (Nellore).—Mr. V. N. Seshagiri Rao, the Extra Assistant Conservator, who was posted to this district continued to assist the District Forest Officer, in conducting the kancha sales and popularising the system and in helping the officer in his office and out-door work.

Mr. A. Mc. Tampar (Chingleput).—Mr. S. V. Deva Dasan was in charge of the district up to 14th May 1919 and Mr. M. C. Chandu from 21st May 1919. The former possessed considerable local knowledge and influence which he utilized to advantage in his work. He was particularly interested in the kancha system, and has contributed materially towards its prospects of development. As Mr. Chandu has not been long enough in the year under review, I refrain from making any remark regarding his work.

Mr. H. G. Gharpurey, Collector of Cuddapah—North Cuddapah.—It is satisfactory to note that the forests of this division have begun to be worked at a profit. Mr. Sundaram Ayyar takes keen interest in his work and his hope that they will continue to be worked so is probably well justified. South Cuddapah.—Mr. Master with his abundance of enthusiasm and energy is doing his best for the forest under his charge. West Cuddapah.—The report discloses progressive administration. Mr. Hanumantha Rao is a tactful and experienced officer and possesses the knack of taking work from his subordinates without unnecessary friction.

205. *Conservator's remarks.*—Having joined the circle only at the very end of the year I am unable to say much personally about the work of the superior officers. That it has however been good is evident from the great quantities of hay and other products supplied for war purposes. This put a great strain on all officers concerned and in all cases the work was carried out with zeal and efficiency.

206. *Executive staff.*—The conduct and work of rangers is reported to be satisfactory on the whole with a few exceptions. As regards deputy rangers their work is reported to be fairly satisfactory by all District Forest Officers except Guntūr and Nellore. The District Forest Officer, Guntūr, states that the deputy rangers show to a marked degree a lack of sense of duty and responsibility and that many of them start with a casual and temporary interest in their work and appear to have no other ambition than just to exist and to be allowed to continue on their present pay and the District Forest Officer, Nellore, is of opinion that the deputy rangers now joining the department are of an indifferent sort. It is to be feared that these criticisms are to a certain extent justified. The class of men recruited recently does not appear to be so good as it was some years back. It is to be hoped it will improve again with the advent of the reorganization scheme.

207. *Protective staff.*—The work and conduct of the protective staff was no better than in previous years. Here again, it is hoped a change for the better may result from the introduction of the reorganization scheme.

Foresters.—Two were dismissed, twelve suspended, two removed from service, seven reduced, twelve awarded black marks, one fined and four reverted.

Forest Guards.—Six dismissed, 48 suspended, 84 removed from service, thirteen reduced, 42 awarded black marks, one fined.

Tannadars.—Two suspended, one removed from service and three fined.

Watchers.—Seven suspended, 85 removed from service and two fined.

208. *Ministerial establishment.*—The work is reported to be satisfactory on the whole in all districts except Anantapur where the District Forest Officer complains the staff is below the average and unsatisfactory owing to frequent changes and to incompetent men being foisted to the Forest Branch. The Collector of the district demurs to this view and attributes it to the general inefficiency of the clerical staff.

of the district which does not attract clever men from outside on account of its distance from Madras, its backwardness and its reputation as part of the Ceded Districts. The District Forest Officers of *Chittoor and South Cuddapah* strongly represent that on account of the short-handedness of the range clerical staff, work falls in arrears and attempts by the range officers to prevent such a state of affairs if ever done with any measure of success is done only at the expense of their duties in the field, a state of things which is to be greatly deprecated. If the Range and District Forest offices are to attract proper and efficient men it is high time that a satisfactory scheme is evolved for the reorganization of the clerical establishment of the Forest Department giving scope even to the Range clerks to rise to the highest posts when found efficient.

209. *Health of establishment and casualties.*—The health of the establishment suffered much on account of influenza. Two rangers, two foresters, eleven forest guards, nine watchers, two clerks, two permit-issuing officers and one tannadar have died of this epidemic. In *North Cuddapah*, two forest guards and one watcher succumbed to cholera. In Mamandur one forester died of cholera. The health of the establishment is reported to be indifferent in the three Cuddapah divisions on account of malaria, which tended to hamper the progress of work.

210. *Relations between Revenue and Forest officers*—continued to be cordial. In *North Cuddapah*, however, it is reported that the village officers at times did not co-operate with the forest subordinates, and they were reported to the Collector.

211. *Service books* were maintained and verified in all districts.

212. *Forest Commissioner's tour.*—The Forest Commissioner visited Madanapalle Range forests and Chittoor reserves in July 1918 and Chamala forests in March 1919; he also inspected the Palakondas and Gandikota of the West Cuddapah division and remarked on the damage done to the forests by fire and timber thieves and advised the closure of reserves to grazing for fire burnt areas.

213. *Conservator's inspection.*—All the district offices except *Guntur, Bellary and Anantapur* were inspected before 30th June 1919. The last two have been inspected in July and August 1919 respectively. The forests of the Vinukonda, Rajampet, Mamandur and Sriharikota ranges and Duggarazupatam casuarina plantations have been inspected and inspection notes were submitted except for the last two.

214. *Touring of District Forest Officers.*—All the District Forest Officers spent more than the prescribed minimum period in camp except the District Forest Officers, Anantapur, Guntur and Chingleput; in regard to Anantapur and Chingleput, the short touring was due to the illness of officers in charge and that in Guntur to change of officers.

215. *Inspection of Range offices.*—All Range offices were inspected except Palnad of Guntur, Sriharikota and Nellore ranges of Nellore district and Sathiavedu of Chingleput district.

216. *Audit of accounts of District Forest offices.*—The accounts of all offices except Bellary were audited by the Assistant Inspector of Local Fund Accounts and the general result was satisfactory.

217. *Imperial Forest College course, Dehra Dun.*—No probationer was deputed from this circle during the year.

218. *The Madras Forest College, Coimbatore.*—Seven deputy rangers and one acting ranger were deputed during the year; one of the deputy rangers was sent back being declared unfit to cope with the college course. Three deputy rangers returned with higher standard certificates and one with lower standard certificate.

219. *Vernacular Training School.*—The school was held this year in the *Chingleput district*. It opened with thirty students (eight foresters and twenty-two forest guards) but only twenty-eight actually underwent training, one left the school on account of domestic trouble and the other fell ill of eye complaint. The school was under the chief instructor of the previous year M.R.Ry. A. Ranganayakulu Nayudu and his assistant M.R.Ry. S. Chidambara Ayyar. The District Forest Officer states that the training given was in his opinion thorough and practical and the students were on the whole of an average class.

220. The headquarters of the Direction office was removed from Trichinopoly to Salem on 3rd December 1918. *Southern Circle.*

Circle charge.—The following officers were in charge of the circle during the year under report:—

Mr. P. M. Lushington	from 1st July 1918 to 9th October 1918.
" H. F. A. Wood	" 10th October 1918 to 30th December 1918.
" H. A. Latham	" 31st December 1918 to 16th May 1919.
" A. B. Jackson	" 17th May 1919 to 16th June 1919.
" H. A. Latham	" 17th June 1919 to end of the year.

221. *Divisional charges.*—Proposals for the redistribution of the present two Salem divisions, the *South Arcot* and *Trichinopoly* divisions are awaiting the sanction of Government. It has since been found that some slight alterations to the proposals already submitted may be needed. In connexion with this redistribution proposals for the transfer of headquarters of one district from Cuddalore to Salem is awaiting Government sanction and a rented building has already been found for it. Certain reserves of *South Arcot* district were transferred to the control of the Collector of Tanjore in B.P. Forest Mis. No. 875, dated 22nd December 1916, but the transfer was only given effect to from 1st December 1918. The special working plan party was dispensed with from October 1918, no officer being available.

222. *Range charges.*—In *South Arcot* district, the Tirukkōyilūr range was amalgamated with Tindivanam and was named Gingee range from August 1918.

223. *Work of superior officers.*—The work of the district officers has been satisfactory. Mr. K. R. Venkataramana Ayyar has kept to his traditional keenness and has done very good work in connexion with sandalwood and bamboos.

Mr. Barry in Tinnevely has also been doing useful work in connexion with the regeneration of *Balanocarpus utilis*, *Hopea parviflora*, *Gluta* and *Filicium*.

The work of Mr. Hearsey, Extra Assistant Conservator of Forests, in the investigation of spike disease in sandal has not been satisfactory due in part to ill-health and in part to slackness.

224. *Executive staff.*—The work and conduct of the Executive establishment was on the whole satisfactory.

Two rangers and six deputy rangers were suspended. The services of four deputy rangers were dispensed with, and one was dismissed. Many of the latter class find their work uncongenial and one fears at times unhealthy.

225. *Protective staff.*—The work and conduct of the protective staff cannot, on the whole, be called satisfactory. The reorganization scheme, sanctioned recently, may improve matters though I fear in view of the recent increase in prices and wages, we must not expect too much.

There were 168 removals or dismissals, 155 suspensions, 5 reductions, 17 termination of services, and 9 resignations.

226. *Ministerial establishment.*—The work of ministerial establishment is said to be satisfactory except in four districts, North Vellore, West Vellore, North Salem and South Salem (Junior section). The difficulty seems to be due to want of prospects; for instance, in the Circle office there have been no permanent promotions since 1911. Range clerks are not on the Collectors' establishment lists, and though they start on Rs. 20, it can hardly be expected that they shall continue keen for the period of thirty years which must elapse before they earn their pension; moreover the work is intricate and takes time to learn.

227. *Health of the establishment.*—The health of the establishment was fair except in specially feverish localities, in West Vellore, North and South Salem, and Trichinopoly. Influenza however took a heavy toll.

228. *Casualties.*—One ranger, two deputy rangers, one forester, one range clerk, three guards, two watchers and one tannadar died of influenza. One guard died of snake bite; one deputy ranger, one forester, three guards and three watchers died of malaria; one guard and two peons died of cholera; one guard and one watcher died of Javadi fever; six guards and two watchers died of other causes.

229. *Relation between Revenue and Forest officers* continued to be cordial throughout the circle.

230. *Service books* were maintained and verified in all the districts.

231. *Conservator's inspection.*—All the District Forest offices were inspected during the year. The forests of Shevaroy's and Pallipatti reserves of South Salem district were inspected by Messrs. Lushington and Wood respectively. Short notes on the latter were submitted to the Board.

The Javadis in South Vellore were also visited.

232. *Touring of District Forest Officers.*—All the District Forest Officers except South Vellore, West Vellore, North Salem and Tinnevely spent more than the prescribed minimum period in camp. The short touring is satisfactorily explained and is due to ill-health and the holding of two district charges by one officer.

233. *Inspection of Range offices and sale depots.*—All the Range offices except one in Tinnevely and all sale depots were inspected during the year by the respective District Forest Officers.

234. *Audit of accounts of the District Forest offices.*—The accounts of all District Forest offices except South Arcot and Madura were audited by the Assistant Inspector of Local Fund Accounts, the general result being 'satisfactory.' In South Arcot, the Assistant Accountant-General and Examiner of Local Fund Accounts is reported to have made test audit in April 1919 and no remarks were made by him.

235. *Imperial Forest College, Dehra Dun.*—No one was deputed.

236. *Madras Forest College, Coimbatore.*—Of the seven deputy rangers deputed for training, one obtained honours certificate, four higher standard and two lower standard. Six were deputed for 1919-21 course.

237. *Vernacular Training School.*—The school was located in Tinnevely division and did good work under the Instructor Mr. B. R. Salisbury and his assistant Mr. A. P. Mekoy. There were thirty students, sixteen of whom obtained first class certificates and fourteen lower. The cost worked out to just over Rs. 225 per head. The report on the working of the school will be sent separately.

238. Mr. C. D. McCarthy held charge of the circle till 11th May 1919 when he availed himself of two years' combined leave. Mr. H. Tireman, Acting Conservator of Forests, was in charge for the rest of the year.

District and Range charges.—There were no alterations during the year.

239. *Superior officers.*—The Conservator has not yet visited all the divisions of the circle and prefers not to make any remarks—which in the circumstances could not fail to be invidious—on the work of the superior officers.

240. *Executive establishment.*—The work of the rangers with a few exceptions is generally well reported on. Rangers Swamikutty, Nicholas and Myers are specially mentioned for good work by their respective District Forest Officers. One ranger retired from service, one ranger was temporarily reduced, and one probationary ranger resigned. The work of deputy rangers was on the whole fairly satisfactory. The services of eight were dispensed with and three resigned.

241. *Protective staff.*—The work and conduct of the staff with a few exceptions were not satisfactory.

Punishments—Foresters.—The services of four were dispensed with, six were reduced, eight were suspended and one reverted. *Forest guards.*—The services of 28 were dispensed with, eight were reduced, twelve dismissed and 29 suspended.

Ministerial establishment—Circle office.—The work of the Conservator's office establishment was with the exception of that of one member satisfactory.

Divisional and Range offices.—The work of the establishment of the Divisional offices was generally satisfactory except in the case of North Malabar where three clerks were severely punished for bringing false charges against the head clerk. The head clerks of Mangalore North and South Coimbatore are specially mentioned for their good work.

Western
Circle.

Range offices.—The work of the Range office establishment is reported to be fair. Two additional range clerks were sanctioned—one for Muttupalaiyam and the other for Tunacadavu ranges in Central and South Coimbatore divisions respectively.

242. *Health of the establishment and casualties.*—In common with the rest of the world the establishment suffered severely from influenza—three deputy rangers, two foresters, and 58 other ranks including permanent coolies dying of this disease. Malaria was as usual a scourge and must continue to be so until effective measures are taken to house the establishment in healthy situations. In former days—presumably in the sacred cause of economy—forest buildings were as a rule constructed as near as possible to swamps or streams in order to avoid the necessity of digging wells. A typical instance is the Telkadi leased forests in which although forest work has been in progress for upwards of half a century there is not a single well. As the only water in the dry weather is that contained in the stagnant pools of a dried up river, it is scarcely to be wondered at that the place is terribly unhealthy. It would be interesting—if it were possible—to contrast the saving effected by not digging wells with the salary which Government has paid to men too sick to do any work and has consequently lost. The District Forest Officer is now digging wells in sites located by a 'diviner', good quarters are shortly to be built for the subordinates and coolies and it is hoped that matters will considerably improve at an early date. The Conservator is alive to the necessity for action in this important matter but progress must necessarily be slow and considerable outlay will be necessary.

Casualties.—One ranger, three clerks and two forest guards retired; two deputy rangers were invalided; and three deputy rangers, seven foresters and nineteen forest guards died. Several subordinates suffered much from fever and other ailments and a large number of subordinates have had to be granted sick leave.

243. *Relations between Revenue and Forest officers.*—The relations continued to be cordial and no complaints of any importance were brought to the notice of the Jama-bandi officers.

244. *Service books.*—These were maintained for all subordinates on the permanent establishment and verified up to the close of financial year.

245. *The Inspector-General.*—Mr. G. S. Hart, C.I.B., Inspector-General of Forests, visited South Malabar and the Nilgiris inspecting the teak plantations at Nilambur and the eucalyptus plantations and Mudumalai forest in the latter division.

246. *Tours of Forest Member.*—The Hon'ble Mr. M. E. Couchman, Forest Commissioner, visited South Malabar, Kollegal and North Coimbatore divisions. He inspected the young teak plantations in South Malabar and the burnt areas in North Coimbatore.

247. *Conservator's inspections.*—All the District Forest offices except North Malabar were inspected. The Conservator inspected some of the forests in Mangalore North, South Malabar, Central Coimbatore and South Coimbatore. The total number of days spent in camp was 157.

248. *Touring of District Forest Officers.*—All the District Forest Officers except those of South Malabar and Nilgiris spent more than the prescribed period in camp.

249. *Audit of the accounts of the District Forest offices.*—The accounts of all the District Forest offices except North and South Mangalore were audited by the Local Fund Audit Department during the year. The results are reported to be satisfactory.

250. *Inspection of Range offices.*—All Range offices except three, one in the Nilgiris, one in North Coimbatore and one in South Coimbatore, were inspected during the year and the results are reported to be fairly satisfactory, except in South Mangalore. With the exception of those in North Mangalore all the sale depots and forest tram line depots were inspected and they were reported to be in good order.

251. *Madras Forest College.*—One deputy ranger passed the college course with honours, two others with higher standard certificates and one with lower standard certificate.

Six deputy rangers were deputed to the college for 1918-20 course.

252. *Imperial Forest Research Institute and College.*—One probationer for the Provincial Forest Service was deputed to the college after probationary training in South Coimbatore.

The senior Provincial class of the college under Mr. R. Bourne, Imperial Instructor, toured in South Malabar and Nilgiris districts.

253. *The Vernacular Training School.*—Of the 24 students that remained at the close of 1918 session in the Nilgiris, thirteen secured first-class and eleven second class certificates. This year's session was held from 15th January to 10th June 1919 in South Mangalore division and subordinates from Mangalore North were also deputed for training. The number deputed from both the divisions was twenty, of whom one did not join and his services were subsequently dispensed with. Out of the remaining nineteen students, seven secured first class certificates and the rest second class.

CHAPTER VI.—GENERAL.

Northern
Circle.

254. *Realization of revenue from the usufruct of toddy-yielding trees, etc.*—The revenue realized from this source was Rs. 33,665 against Rs. 33,642 in the previous year.

255. *Supply of forest produce to meet the wants of people.*—Coupes in several places were opened in all divisions except Godavari Upper and sold to contractors from whom people obtained their requirements of fuel and bamboos without complaints. In Godavari Upper, the supply from unreserved lands was adequate for the local demand. The removal of fuel from the Mangrove forest of Kandikuppa and Coringa in Godavari Lower by fishermen at fixed rates was, as usual, continued. Owing to distress, the fishermen were exempted from paying fees, and the hillmen in Rampa were allowed to remove bamboos on payment of half the seigniorage rate for a period of three months. In Kurnool East and West, small timber, building materials, agricultural implements and bamboos were collected departmentally by employing Chenchu labour, and were sold to the public; the arrangements for the supply in the latter division are reported to be inadequate and steps have since been taken to ensure the continuous supply of small timber and fuel to the bordering villages.

FOREST COMMITTEE'S RECOMMENDATIONS.

256. (a) *The formation and working of panchayats, Kistna.*—Four reserved forests covering an area of 5,589 acres were managed by panchayats. They were inspected by the District Forest Officer during the year and found to have been managed satisfactorily. Kurnool East—Yerragondapalem reserved forest (9,054 acres) was managed by panchayat which is reported to have worked well. Kurnool South—The management of Yadavada reserved forest (1,142 acres) by panchayat was sanctioned during the year, but was not brought into force until the close of the year. Kurnool West—The sanction for the panchayat management of Gandlakonda reserved forest (4,476 acres) was not given effect to pending the revision of grazing fees.

(b) *Opening of small coupes for rural supply wherever an effective demand exists or can be stimulated into existence.*—In Godavari Upper, the necessity for opening such coupes does not exist, the supply from unreserved lands being enough. In Kurnool South, the opening of coupes is said to be impossible owing to the remoteness of the forests from the centres of demand. In Kurnool West, nothing was done. In Kistna, one small fuel coupe in Jaggayyapeta forest was opened and leased to meet the requirements of Panchamas. An attempt to open two fuel coupes of fifty acres each in Kurnool East failed for want of demand. There was no demand for such coupes in the other divisions as the coupes sold to contractors and unreserved lands met the local demand.

(c) *Measures adopted for improving the water-supply in Government grazing grounds and the facilities for grazing and pasturage.*—No special measures are required in Ganjam, Vizagapatam and Godavari Upper, where there is ample supply of water near grazing grounds. Two tanks in each of Godavari Lower and Kurnool East and one in Kurnool South were repaired at a cost of Rs. 330, Rs. 587 and

Rs. 250, respectively. Troughs were also constructed in Kurnool East at a cost of Rs. 60 for watering cattle. One well was sunk at a cost of Rs. 323. Nothing was done in Kistna and Kurnool West owing to financial stress.

(d) *System of patrol by a gang of subordinates.*—The system of patrol under one patrol officer over several beats was in force in Vizagapatam and in the Kurnools and is reported to have worked satisfactorily except in Kurnool West and in one of the ranges of Kurnool East. The failure in Kurnool West and East was due partly to the insufficiency of the staff and partly to the large extent of areas allotted to each gang. The system was not introduced in Ganjam, and in the Godavaris. The beat cum gang system which was adopted in Kistna worked fairly well.

RULES UNDER THE FOREST ACT.

257. (a) *Timber transit rules.*—The rules in all divisions are reported to have worked satisfactorily.

(b) *Rules under section 26 of the Forest Act.*—The rules are reported to have worked satisfactorily with no abuse of the privileges. In Ganjam, the free removal of reserved and classified trees under two feet in girth from unreserved lands was allowed as a famine relief measure and the concession was appreciated. The unreserved lands to the extent of 427 square miles in Godavari Upper and nine square miles in Kistna were under the control of the Forest Department.

(c) *Other rules.*—The rules under the Forest Act for the management of the estates in Vizagapatam and Kistna and the rules for the transport of timber on the river Godavari, etc., and for the collection and disposal of drift timber in the Godavaris are reported to have worked well.

258. *Hill tribes—Ganjam.*—The Khonds were, as usual, engaged in the general and fire protection of forests and in return allowed free grazing and removal of dry fuel and minor produce for their domestic consumption. Some of the Khonds were also given presents in the shape of rice, cloth, cheroots, etc., in recognition of their good services. The hill tribes in Vizagapatam availed themselves of the privileges conferred on them without complaints. In the case of a few hill villages, the privileges had to be suspended owing to the apathy of the people in the matter of protection of forests from thefts of timber and fire. The Godavaris—The Koyas and Reddis in the Upper division were engaged in clearing fire lines and protecting forest from fire and paid wages for the labour and rewards on the results of protection. The same tribes in the Lower division were, as usual, employed on the general and fire protection of forests and on the construction of roads and buildings and the demarcation of forests. They were granted rewards for successful protection of forests from fire and allowed also concessions to graze their cattle free and remove free forest produce for their consumption. Chenchus of Kurnool.—In the East division, the Chenchus were employed mostly on exploitation and protection of forests. With some exceptions, they are reported to have behaved fairly well. The amount of wages earned by them during the year was Rs. 20,417. In the South division they were regularly employed by the department as fire patrols. Some were also engaged by the lessees in extracting bamboos. It is reported that a gang of Chenchus from some of the refractory gudams in the East and West divisions committed several dacoities and robberies in the South division and caused several fires which burnt a vast extent of forests in one of the ranges. In the West division, the Chenchus are a source of trouble, worry and anxiety, and a special commission has since inspected the worst gudams with a view to improving matters.

259. *Cultivation in reserved forests.*—The District Forest Officer, Ganjam, has not dealt with the results of the dry cultivation by the Khonds to whom lands in Kriamba reserved forest were assigned last year. In Kurnool East, the Chenchus continued to cultivate 67 acres free of assessment and 115 acres on an annual assessment of two annas per acre assigned in the previous year. Twenty-five acres were assigned during the year for cultivation by the Chenchus of Tokapenta. The cultivation of 38 acres by Sugalis and 12 acres by the police talaiyaris was continued. Twelve acres were also granted during the year for cultivation by the police talaiyaris. The assignees are to render service in extinguishing fires and preventing the commission of offences. In Kurnool West, 18 acres of land in Pecheruvu and 37 acres in Bairuti ranges were

cultivated and sown with horsegram by employing *Chenchu* labour; the harvest in the former area is reported to be 539 Madras measures, while that in the latter has not been reported.

260. *Mining and quarrying.*—In *Kurnool West*, three licences for prospecting barytes—one in *Betamcherla* reserved forest and two in *Kolumulapalli* unreserved land—were granted during the year; 1,500 tons are reported to have been removed from the former area.

LIVE AND DEAD STOCK.

261. (a) *Elephants.*—The elephant in *Vizagapatam* was transferred to the Agency department. Six elephants were maintained for baggage. The condition and health of the two elephants in *Ganjām* is reported to be indifferent and of the others in *Gōdāvari Upper* and *Kurnool West* fairly good.

(b) *Other animals.*—Six pairs of buffaloes were purchased in *Ganjām* for dragging logs. The casualties of the year were: eight buffaloes in *Ganjām* were given as rewards to the *Khonds*, three died, one was killed by a tiger, two asses and one buffalo in *Kurnool East* were sold and one bullock in *Kurnool West* died. The balance of stock at the end of the year was 24.

(c) *Inventory of valuable stock.*—Stock registers were maintained and verified at inspections.

(d) The value of the live and dead stock at the close of the year was Rs. 12,954 and Rs. 3,81,599 respectively.

262. *Rain gauges.*—Readings were recorded in all the stations. For the sake of safety, some of the gauges in *Vizagapatam* and *Kistna* were removed and located at places which the subordinates could reach easily and inspect frequently.

263. *Suits.*—The civil suit against the Government which was pending last year in *Gōdāvari Lower* in connexion with the imposition of fine under the River Timber Transit rules was decided in favour of Government and the plaintiff has appealed; the appeal was pending. A civil suit for the possession of certain lands included in *Kovvada* and *Kopalli* reserved forests in *Gōdāvari Lower* preferred by the proprietor of *Gangole* estate was pending.

264. *Realization of revenue from the usufruct of toddy-yielding trees on Government wastes and poramboke lands.*—Rs. 82,606 were realized during the year against Rs. 91,976. The decrease was chiefly in *Bellary* and *Guntūr*.

RULES UNDER THE FOREST ACT.

265. *Timber Transit rules* are in force in *Guntūr*, the three divisions of *Cuddapah* and *Chittoor* and are reported to have worked satisfactorily. During the year these rules were extended to the whole of *West Cuddapah* and *Chittoor* districts and as a result of the same there was more effective check than in previous years. The offences committed under these rules in the *West Cuddapah* were thirty-eight against fifteen in the previous year and the increase was due to greater check exercised consequent on the better supervision of the controlling officers.

266. *Rules under section 26 of the Forest Act* are reported to have worked satisfactorily and no complaint or abuse has been brought to light.

In regard to *tangedu*, the District Forest Officer, *West Cuddapah*, states that the bark is growing in importance for tanning purposes and that contractors who lay out large amounts on leases do not obtain the full benefit from the shrubs in unreserved lands which are at present freely removed for manuring purposes and he recommends that this shrub should be declared a reserved tree and thereby protected. The Collector points out that only the leaves are to be removed for manuring purposes and he does not think that it is necessary to declare the shrub a reserved tree. This is true but the privilege of removing leaves is much abused and is a constant source of trouble to contractors.

267. *Inventory of valuable stock.*—The stock registers are reported to have been maintained and verified in all the districts. The confusion noted in the stock of articles in *Nellore* in the previous year's report were all set right during the year and steps have been taken to dispose of all the old and unserviceable stock.

268. *Rain-gauges.*—Were maintained in all districts except *Anantapur* and *Chingleput* and readings were recorded. Two rain-gauge stations were opened in *South Cuddapah*—one at *Kodivengammabhavi* of *Kodur Range* and the other at *Thummalabylu* in *Rajampet Range*.

269. *Cultivation in reserved forests with a view to afforestation.*—In *Guntūr* district 15,850 acres of *Bapatla Block III*, 130 acres of *Ipurpalem Reserve* and 178.71 acres of *Nizampatam coupes 5 and 6* were leased for cultivation for 15 years in accordance with Board's Proceedings Forest Mis. No. 214, dated 6th June 1913 for raising fuel plantations. In *West Cuddapah* district, the *Gandlur tope* given on 30 years' lease is being used by the lessees; besides, the several plots assigned to the *Police talayaris* are also properly kept, while in *Nellore* district a small portion of *Amauchherla* is given to *Ghat talayaris* and the department receives a small rent on it.

270. *Measures adopted to encourage the growth of manure leaf yielding plant.*—No special measures were adopted during the year. In spite of the enhancement of fees on manure leaves in the *West Cuddapah* division the drain on the forests has not been entirely put a stop to and this will not be done until the issue of permits is altogether stopped.

271. *Specimens.*—In *West Cuddapah* district specimens of the fruit of the two different species of *Terminalia Chebula* were collected for experimental purposes while in *South Cuddapah* district 2 lb. of *Red Sanders* seed were sent to the Imperial Sylviculturist for experiment; 2 long and 2 short *Red sanders* pannels and 2 long *Thamba* pannels were also supplied to the *Gass Forest Museum*.

All the products collected and supplied to the Controller of Munitions, *Tan Stuffs*, etc., are shown below:—

Description of produce.	Candies.	Lb.	Description of produce.	Candies.	Lb.
Hay	2,978	1,387	<i>Hardwickia binata</i> billets	1	110
<i>Anogeissus latifolia</i> bark ..	4,435	391	Leaves of <i>Carissa spina-</i>	..	378
Do. leaves	35	229	rum.		
Gotti fruits <i>Zizyphus xylopyra</i> .	45	149	<i>Tangedu</i> bark <i>Cassia</i>	1,028	341
Bees'-wax	3	99	<i>auriculata</i> .		
<i>Phyllanthus emblica</i>	1	354	Red-wood		1,120

272. *Suits.*—In *South Cuddapah* the High Court set aside the order passed by the District Judge, *Cuddapah*, in connexion with the suit against the first bidder of *Pamuluru Coupe II*. It is remanded for further enquiry and stands posted to 24th August 1919. In *West Cuddapah*, the question of raising the amount of award in the case of *Putlampalle shrotriyam* claimed by the *Shrotriyamdars* is still pending in the District Court. In *Nellore*, the suit filed by the *Shrotriyamdar* of *Turavaripalem* for the possession of compartment 29 of *Rapur Velingondas* was declared to have abated by the death of the plaintiff and the area was notified under Section 4 in Board's Proceedings Forest Mis. No. 105, dated 10th February 1919 and the settlement is in progress. The two claims relating to the *Udayagiri Velingondas* were withdrawn, as the available records are unfavourable to Government. In *Chittoor*, there were no civil suits in the year. There were 2 criminal cases against the forest subordinates and both of them were decided in favour of the department.

273. *Live Stock.*—There were three buffaloes in *Chittoor* district at the beginning of the year maintained for gardening purposes at *Horsleykonda* camp. One of these an old animal past work was killed by a tiger and the others are looked after by the local staff. There is no other live-stock maintained in the circle.

274. *Mining.*—In *Anantapur*, no new licences for prospecting for gold, etc., were given. Applications of Mr. Ghose and *Sesha Reddi* for prospecting for *Barytes* in the *Nirjampalli* Reserved Forest are under consideration. In *West Cuddapah* no prospecting licences were issued for mining but an offer for extracting *stealite* (soap stone) was received and as it was found profitable to lease out the area in the consideration of the limited extent where it occurs, it was leased out during 1919-1920 for Rs. 100-4-0. In *Nellore*, mica mining is allowed in reserves but the revenue derived thereby is credited to *Land Revenue* since April 1918.

RECOMMENDATIONS OF THE FOREST COMMITTEE.

(a) Classification of Forests.

275. The classification is complete in all districts. In *Chittoor* district 17 Reserves (3 partly in classes I and V, 13 in Class V and 1 in class IV) were re-classified and ordered to be placed in class I in Board's Reference No. 2698/18-1, dated 19th February 1919.

(b) Constitution of forest panchayats.

276. During the year two panchayats were newly formed in *Guntur* district. Three panchayats were resumed in *Bellary* district, one dissolved in *Guntur* and 15 in *Chittoor* district. *Thimmapuram* reserve in *Bellary* district has been recommended for disafforestation as no village was willing to take it up for panchayat management. As a special annual report on the working of the panchayats is separately submitted to Government by the Chief Conservator of Forests, there seems no necessity to go into this matter in detail in this report. The panchayats are reported to have worked satisfactorily on the whole in all districts except *Chingleput* and *Chittoor*, where the District Forest Officers are of opinion that the working is hardly satisfactory. The Collector of *Chittoor* writes as follows:—"We abolished all the panchayats except one in the year because we now want to keep the reserves in which most of them were located to grow sandal-wood, and this means that all grazing in them must be stopped. The opinion of the Revenue Officers of this district, as the result of the experiments made with panchayats in the last few years, is not nearly so unfavourable as that of the forest officers. We believe that if the areas under panchayat administration have not been particularly well managed, they have at any rate, not been worse managed than those under the Forest Department. It is notorious that goats browse in the reserved areas with the connivance of forest subordinates and that illicit felling is common, and that fires commonly occur. The late District Forest Officer proposed to enhance the grazing fees in the *Pulikonda* reserve, which contains the only remaining panchayat area, on account of fires. I am instructing the Revenue Divisional Officer to make an enquiry into the cause of the fires and to report whether they could not be prevented if the whole of the *Pulikonda* reserve were parcelled out into panchayat areas. I am very far from being of opinion that the panchayat experiment ought to be abandoned".

In *West Cuddapah* district, with a view to induce the villagers to take up the management of one block, proposals to enhance the grazing fees were submitted and sanctioned in G.O. No. 1347, dated 14th July 1919.

(c) Opening of fuel coupes for rural supply.

277. In all the districts coupes were opened wherever there is demand and they were generally leased out to contractors for felling as usual. In *North Cuddapah* district as the price of fuel at *Proddatur* had gone up to a prohibitive rate, proposals are being made to supply fuel from the *Lankamalais* and *Nallamalais* at fixed rates at the road side. In *Nellore* district coupes are being opened wherever there is a local demand sufficient to induce a contractor to undertake the felling. The population however got much of their fuel from *shrotriyam* and *zamindari* lands and from unreserved lands and there is therefore little demand for fuel from forest reserves. As there is now a demand for fuel for mica mining a working scheme for the forests adjoining these mines is under preparation.

(d) The patrol system.

278. The special patrol system is in vogue in the three *Cuddapah* districts and in one of the ranges of the *Chittoor* district and is reported to have worked satisfactorily. The protection of the reserves are all reported to be good on the whole.

(e) Inducement to villagers to aid in forest conservancy.

279. The *kancha* system of grazing already in existence in three reserves of *Guntur* district and the whole of *Nellore* and *Chingleput* districts is working satisfactorily. In *Bellary* the grazing fees in *Harpanahalli* range were enhanced to Rs. 8 per cow unit. The District Forest Officer, *South Cuddapah*, contemplates opening pentas in the *Seshachellam* reserve under the forest village or *kancha* system. In view of the great damage done by pentas in the past on these hills, this is a

project which I view with much suspicion. In *West Cuddapah* district the grazing fees on *Sugali* cattle were enhanced to Re. 1 per cow unit with a view to introduce the village system. In *Nellore* the right of free removal of grass originally given to the villagers at the foot of the *Yerragondas* and *Veligondas* was cancelled and the hills were closed as a punishment. The closure had the desired effect with the result that the number of fires was reduced greatly.

(f) Improvement of water-supply and grazing facilities in Government grazing-grounds (B.P. Forest No. 125, dated 29th June 1914).

280. *Guntur*.—Permission was granted for repairing eleven existing kuntas and one well and for constructing three new kuntas and one well for the benefit of cattle grazing in reserves.

North Cuddapah.—Only one well near *Peddabhavi* (*Nallamalais*) of the *Porumamilla* range was repaired at a cost of Rs. 50. One bund across the stream in *Nallamalais* near *Balappabhavi* rest house, one in *Kancherlamoram* reserve of *Vonipenta* range were constructed free of cost, similarly five bunds in *Gopavaram*, *Ganugapenta* and *Kancherlamoram* reserves and in *Lankamalais* and *Thurupukondas* of *Badvel* range and two bunds in *Vaneswaram* stream in *Lankamalais* of *Sidhout* range were also constructed free of cost by the forest subordinates during 1919. One Mr. *Govindarajulu* of *Ganganapalle* was permitted to dig a tank in *Nallamalai* reserved forest of *Porumamilla* range; the same was completed during 1918-19.

South Cuddapah.—The supply channel to *Thummalabylu* kunta in *Seshachellams* of *Rajampet* range was repaired at a cost of Rs. 138. *Gurutlabhavi* in the same range was repaired at a cost of Rs. 18. Stone walls were built around *Mangalavanibhavi*, *Boddeddulabhavi* and *Kanchunuthulabhavi* at a cost of Rs. 27. One Mr. A. *Chenchireddi* of *Nagavaram* village was permitted to repair at his own cost as public charity the wells in *Kuntakona* and *Ippalakona*. The works are progressing.

West Cuddapah.—Three water-sources in the *Palakondas* were repaired at a cost of Rs. 156. *Kadikonabhavi* which has a perennial supply has been protected by constructing a platform against the rush of foul water from the adjoining stream. In *Kanamalopalle* a well has been repaired by a private individual to improve the water

supply. *Nellore*.—Two ponds one in *Kanigiri* and the other in *Rapur* Range were repaired free of cost by the villagers. *Chingleput*.—The ponds in *Valluvapakkam* and *Selayur* reserves were repaired at a cost of Rs. 30 and Rs. 42-5-0 respectively. For the improvement of the grazing-grounds in the six special grazing working circles of *Chingleput* Range prickly-pear and thorny growth were removed departmentally in order to endeavour to increase pasture in accordance with the provisions of the working-plan.

(g) Sale of plantations.

281. In *Anantapur*, tree growth on 472 acres of reserved forests in *Pamidi* and *Khojjepalle*, in *Guntur*, 280 acres of *casuarina* plantations and in *South Cuddapah*, 103 acres of *Upparapalle* plantation were sold for Rs. 6,230, Rs. 12,504 and Rs. 3,024 respectively. In *Nellore* the *casuarina* plantations on the coast were not disposed of as the prices offered were low. The *Dugarazupatam* plantation was re-sold as the original purchaser failed to pay the kist regularly.

282. The *War work* carried out during the year was: in addition to the supply of hay referred to in the previous chapters 'Anogeissus bark' supply was continued; a list of other kinds of produce sent to the Controller as detailed in the paragraph under 'Specimens'.

283. Realization of Revenue from the usufruct of toddy yielding trees.—Rs. 14,541 was realized under this head during the year against Rs. 15,352 of previous year. The decrease is small. The fixed fee system continued to be in force in all the districts except *Madura* and *Tinnevely*. In *Tinnevely*, the acquisition of 1,494 *palmyras* in the *Kudiraimoli Teri* reserved forest was sanctioned during the year and the amount of compensation is under settlement. The acquisition of 546 *patta palmyras* in *Kaliavar* reserve has been ordered to be proceeded with.

Southern Circle.

the protection of forests considering the number of fires which occurred during the year under report in these four ranges, viz., 36 fires burning 2,945 acres against 63 fires burning 6,203 acres in the previous year though from a personal inspection made after the close of the year I find a good deal of illicit removal going on.

LIVE AND DEAD STOCK.

299. *Inventory of valuable stock.*—Stock registers were maintained and verified in all districts. The value of the dead stock in the circle at the end of the year was Rs. 4,18,755 against Rs. 4,37,632 in the previous year. There is no live-stock in this Circle.

300. *Rain gauges* maintained and readings recorded in all stations.

301. *Specimens—North Vellore.*—Wood and bark specimens of several species have been collected and sent to the Madras Forest College. A small sample of *Hemitechna sepiaria* timber was sent to the Mathematical Instrument Office, Calcutta, for testing it for the manufacture of Mathematical Instruments and report has since been received that the wood though not so good as box-wood is suitable for their requirements and a small order has been placed.

South Arcot.—One panel of *Dalbergia paniculata* was sent to the Gass Museum, and some specimens of barks.

Tinnevely.—Specimen planks of the following species were sent as noted against them.

One plank of *Gutta travancorica* was sent to the Forest Economist, Dehra Dun, and two to the Gass Museum. Wood specimens of *Oadaba trifoliata* were sent to the Gass Museum, Coimbatore. Botanical specimens of the natural order *Dipterocarpus* were sent to Dehra Dun.

SUITS.

302. *South Salem.*—The appeal regarding the ownership of the Neyyamalai hills referred to in last report is still pending.

Trichinopoly.—Government won the appeal preferred in the suit brought by Kulitalai pattadar.

Madura.—In the suit filed by K. Peddan Chetty reported as pending last year, title to the land was decreed in favour of Government who had however to pay for the improvements.

There were no new suits during the year.

INSPECTION OF FRONTIER BOUNDARIES.

303. During the year, the Madura-Travancore boundary from Kumili to Teveram west of Kombai, was inspected and found to be in no good order. The clearing and perambulation of this boundary has been discontinued in G.O. No. 2859, Revenue, dated 3rd August 1918, as the Travancore Darbar was opposed to any clearing.

304. *Recommendation of the Forest Committee—Classification of reserves.*—This is complete in all the districts except for the Tirumanur extension reserve of South Salem district for which no classification is necessary as it is only a field acquired under Land Acquisition Act and settled subsequently under Forest Act in October 1916 and for 6 reserves in Trichinopoly district. There has been some re-classification in South Arcot district during the year. (Board's Proceedings Forest Mis. No. 168, dated 10th March 1919; Mis. No. 236, dated 10th April 1919).

305. *Forest Panchayats.*—Twenty-six new panchayats in all were formed during the year, all districts except Trichinopoly and Tinnevely contributing.

Detailed report on the working of panchayats will be submitted by Collectors separately in due course.

306. *Patrol system.*—This system was continued in North Vellore, South Salem and in one Range in Trichinopoly and the working is said to be unsatisfactory.

307. *The War works carried out during the year.*—Lance staves and *anogeissus* bark and leaves, and bees-wax were also supplied. Owing to the control of collection of the bark of *Cassia auriculata* and other materials having been transferred to the Controller of Tanning Stuffs, the department received in revenue the average of five years previous to war considerably to the benefit of the war expenditure.

308. *Realization of Revenue from the usufruct of toddy-yielding trees, etc.*—The revenue realised from this source was chiefly in the two Mangalore divisions and amounted to Rs. 2,142 against Rs. 1,630 in the previous year.

309. *Supply of forest produce to meet the wants of the people.*—The wants of the people in the matter of fuel are adequately met by departmental operations in the Nilgiris and at Mangalore and elsewhere by the sale of fuel coupes to contractors. As a rule sufficient small timber to meet local demands is obtained from the fuel coupes. Poles for use as cart brakes on the ghat roads in North and South Coimbatore are supplied departmentally.

310. (a) *The working of the Forest Panchayats.*—A new Panchayat was formed in Central Coimbatore and the area brought under its management was 639 acres the assessment imposed being Rs. 30 per annum.

The areas managed by Panchayats are given below :—

District.	Number of reserved forests managed by panchayat.	Area in acres.	Assessment imposed.	Number of panchayats managing the areas.
Mangalore North	1	89-34	Rs. 1,249	1
Central Coimbatore	2	6,683-35	485	15
South Coimbatore	6	8,438-83		3
Total	15	10,411-52	1,734	19

In South Coimbatore the District Forest Officer reports as follows regarding the Dalavoipatnam Panchayats: "The protection of these areas is reported to be highly satisfactory. The Panchayat entertained a temporary gumasta on a monthly salary of Rs. 10 and 3 watchers for Rs. 16 per month to look after the Reserves. A stud bull for breeding was also maintained for six months of the year at a cost of Rs. 60.

"During the year under report 1,047 bulls and cows and 34 buffaloes were permitted to graze in these four Reserves. The rates of grazing fees charged were twelve annas and Rs. 1-8-0 per bull and buffalo respectively. The revenue realised on this account was Rs. 836-4-0. Besides, Rs. 51 was realised by sale of withered trees. Areas are reported to be overgrazed. The following improvements were done by the Panchayats during the year under report: (1) Removal of prickly-pear in Dalavoipatnam and Ganapathy Reserves at a cost of Rs. 299-15-0.

Note.—There are still more areas covered with prickly-pear in Ganapathy Reserve which if cleared will throw open additional areas for grazing.

"(2) A well has been dug in Dalavoipatnam Reserve at a cost of Rs. 153 to afford water for grazing cattle.

"(3) The boundaries of Dalavoipatnam Reserve were cleared by subordinates free of cost."

Other District Forest Officers report unfavourably on the work of Panchayats.

Unreserves.—Two patches of unreserved land measuring 639-72 acres in Udipi Range of Mangalore North and the Andiyur Unreserve (2,570 acres) in North Coimbatore were also under the management of the Panchayat and the work of these Panchayats is reported to be unsatisfactory.

311. (b) *Measures adopted for improving the water-supply in Government grazing grounds and facilities for grazing and pasturage.*—Nothing was done. The only place where any action appears to be necessary is North Coimbatore and here works will be carried out in the current year.

312. (c) *System of patrols by a gang of subordinates.*—Two new patrol sections were formed chiefly for patrolling sandal areas in North Mangalore division and a few cases were detected by them. The system was continued in one Range in North Coimbatore but the District Forest Officer makes no remarks regarding its working. In Central Coimbatore the system was a failure for want of capable men.

313. *Rules under the Forest Act.*—(a) *Timber Transit Rules.*—The rules worked satisfactorily. The modification of the new rules in South Malabar and the framing of revised rules for Kollegal and North and Central Coimbatore divisions are under consideration.

314. *Rules under section 26 of the Forest Act.*—The rules worked satisfactorily.

315. *Other rules.*—The Sandalwood Transit Rules continued in force in *Kollegal* and *North Coimbatore* and generally worked well. Certain modifications in the Sandalwood Transit Rules of South Kanara have been proposed and the matter is pending final decision. The Fishing Rules in the *Nilgiris* were slightly modified and re-notified for another year.

316. *Hill tribes.*—In most divisions attempts were as usual made to induce these unsatisfactory people to settle and to work for the department. The chief of these were the opening of two schools in *North Coimbatore* for Sholagas and Uralis, the allocation of a small reserve in *South Malabar* to the Mulcers, leases of lands either free or at a nominal rent in *North, Central* and *South Coimbatore* to various tribes, and in the last-named division, the opening of a bazaar where the Mulcers can buy food at less than cost price.

317. *Cultivation in Reserved Forests.*—In the *Nilgiris* an area of 1,029.20 acres included in Northern Ilay and Singara Reserved Forests in Sigur Range was handed over to the Cinchona Department for Cinchona planting. The old Kasuba settlement at Anaikatti of 345 acres in extent was leased out to Messrs. Steel and Clementson for experimental Cambodia cotton cultivation. For the rest the leases were much the same as in the previous year. It scarcely seems worthwhile printing a detailed list.

LIVE AND DEAD STOCK.

318. (a) *Elephants.*—The capturing operations were carried out in *South Malabar, North and South Malabar, the Nilgiris, South Coimbatore* and *Central Coimbatore*. Forty-seven elephants were captured, *North Malabar* contributing 18 and the *South Coimbatore* 16. Two were born in *North Malabar* and one in the *Nilgiris*. Eighteen were sold for Rs. 42,660, 11 died, 2 were shot and a young calf was killed by a tiger, surely a unique occurrence. Three elephants were killed by the fall. The condition of the elephants is generally satisfactory though the Conservator has in some cases noticed signs of overwork. The number remaining at the end of the year was 124 against 106 at its commencement.

319. *Other live-stock—Bullocks.*—Twenty-three were purchased during the year, 5 were sold and 17 died or were killed 11 dying ofinderpest. The number in stock at the end of the year was 51. *Buffaloes.*—Fifty-nine were purchased; 1 was sold and 8 died or were killed. The number in stock at the end of the year was 104.

(c) *Veterinary Establishment.*—Mr. F.X. Mascarenhas inspected the live-stock in all the districts and advised on the treatment. His work was satisfactory as was also that of the *South Coimbatore* Veterinary Assistant. The appointment of an additional Veterinary Assistant with headquarters at Gudalur was sanctioned and the appointments of both the Veterinary Assistants were made permanent.

(d) *Inventory of valuable stock.*—Stock registers were maintained and verified at inspections. The value of live-stock and stores at the close of the year was Rupees 3,72,862 and Rs. 4,20,827 respectively.

320. *Rain gauges.*—Maintained in all the divisions and readings recorded.

321. *Suits.*—There were no suits of any importance.

C. M. HODGSON,
Conservator of Forests, Northern Circle.

A. B. JACKSON,
Conservator of Forests, Central Circle.

H. A. LATHAM,
Conservator of Forests, Southern Circle.

H. TIREMAN,
Conservator of Forests, Western Circle.

ADMINISTRATION REPORT OF THE MADRAS FOREST COLLEGE, COIMBATORE, FOR THE YEAR 1918-19.

CHAPTER I.—CONSTITUTION.

(1) Staff.

Mr. F. L. C. Cowley-Brown held the post of Principal throughout the year.

Mr. Dawson was the Imperial Instructor and Messrs. E. M. Crothers, Abd-ul-qadir and Abd-ul-karim, the First, Second and Third Provincial Instructors, during the college year. Mr. W. C. Hart vacated the post of Second Provincial Instructor on 17th July 1918 and shortly afterwards was commissioned as Second Lieutenant in the Indian Defence Force. Mr. R. B. Cornwell, on his return from active service with the 64th and 81st Pioneers in East Africa and Persia, was attached to the staff from 16th June 1919.

With the opening of the joint dispensary on 8th July 1918, the sub-assistant surgeon permanently attached to the college was taken away. Two sub-assistant surgeons were attached to the college only during the touring season.

Mr. J. E. D'Cruz, senior sub-assistant surgeon, joined duty on 28th September 1918 and remained attached to the college till 10th June 1919. Mr. P. M. Sridharan, the second sub-assistant surgeon, joined on 30th September 1918 and remained till 4th February 1919. These officers gave instructions in first aid and camp hygiene to both the divisions.

The students were taught gymnastics and drill by the college havildar.

In headquarters lectures on first aid were delivered to the senior division by the sub-assistant surgeon in charge of the joint dispensary and also by Mr. D'Cruz, the college medical officer.

(2) Board of Visitors.

The Forest Commissioner was ex-officio President of the Board of Visitors till 1st June 1919 on which date the Chief Conservator took charge. Mr. H. A. Latham was on the board throughout the year. The following officers were on the board for the period noted against each:—

The Hon'ble Mr. S. Cox	...	10th December 1918 to 31st May 1919.
Mr. P. M. Lushington	...	1st July 1918 to 18th November 1918.
Mr. C. D. A. McCarthy	...	1st July 1918 to 12th May 1919.
Mr. H. B. Bryant	...	1st July 1918 to 2nd January 1919.
Mr. H. F. A. Wood	...	19th November 1918 to 17th June 1919.
Mr. H. Tireman	...	From 12th May 1919.
Mr. A. B. Jackson	...	From 18th May 1919.
Mr. C. M. Hodgson	...	From 1st June 1919.

CHAPTER II.—RESULT OF EXAMINATIONS.

The Board of Visitors met on 20th June 1919 and remained till 30th June 1919 on which date the prizes and certificates were awarded.

Twenty-eight students sat for the final examination. The following is the list of successful candidates in the order of merit showing the certificates awarded and prizes gained:—

Name of student.	Honours.	Name of circle or State to which attached.
1. T. D. Ponnayya	...	Southern Circle.
2. P. Sankunni Menon	...	Western Circle.
<i>Madras Ranger, Higher.</i>		
3. C. N. Narasimha Achari	...	Central Circle.
4. Y. Peddalakshmayya Nayudu	...	Northern Circle.
5. B. S. Chengappa	...	Coorg.
6. E. S. Wambeck	...	Ceylon.
7. C. L. Narayana Rao	...	Mysore.
8. O. R. Raghunathan	...	Southern Circle.
9. A. N. Srinivasalu Nayudu	...	Do.

Madras Ranger, Higher—cont.

Name of student.	Name of circle or State to which attached.
10. P. Ramaswami Ayyar	Southern Circle.
11. M. Umapati Mudaliyar	Northern Circle.
12. N. G. Mahadevan	Central Circle.
13. M. Gulab Singh	Western Circle.
14. A. Joseph	Northern Circle.
15. Abd-ul-hamid Khan	Hyderabad.
16. T. D. Rajabadar	Southern Circle.
17. Molohn Edward	Hyderabad.
18. C. B. Chengappa	Coorg.
19. A. Se-bagiri Rao	Mysore.
20. K. Purushottama Rao	Central Circle.
21. B. Coates	Western Circle.
22. M. Subba Rao	Northern Circle.

Madras Ranger, Lower.

23. Kunhiraman Menon	Western Circle.
24. Behara Bhagirathi	Northern Circle.
25. Y. Venkataswami Nayudu	Do.
26. T. G. Sitarama Mudaliyar	Central Circle.
27. C. R. Tangavelu Mudaliyar	Southern Circle.
28. T. V. Thayaman	Do.

Government and other prizes.

1. Campbell Walker Prize for the best all-round ranger. B. S. Chengappa (Coorg).
2. Brasier Prize for the best out-door ranger. Abd-ul-hamid Khan (Hyderabad).
3. Best second year student (Gold medal) ... T. D. Ponnayya.
4. Silver medal for honours ... { T. D. Ponnayya.
P. Sankunni Menon.
5. Best second year student (Forestry) ... T. D. Ponnayya.
6. Lodge Prize for the best student in Engineering. T. D. Ponnayya.
7. Best second year student (Survey) ... P. Sankunni Menon.
8. Do. (Range Administration). T. D. Ponnayya.
9. Indian Forest Prize for past students ... L. J. Taylor (1912—1914).
10. Do. for present students ... E. S. Wambeck (Ceylon).
11. Fischer Prize for Gymnastics ... D. Venkateswarulu (junior student).
12. Principal's prize for Botany ... C. R. Ragenathan.

Mr. P. Kesavaswami Ayyar, I.M.S., Assistant to the District Medical and Sanitary Officer, delivered five 'refresher course' lectures on first aid to the students of the 1917—1919 division. Lieut-Col. C. F. Fearnside, the District Medical and Sanitary Officer, and his Assistant conducted the final examination both written and oral in that subject. Fourteen students succeeded in obtaining the St. John's Ambulance certificates.

The 1918—1920 division students started with 33 on the rolls. Before the commencement of the second year, three men were withdrawn under rule 24 of the College Calendar, leaving thirty to start on their second-year course.

The final examination in physical science for the 1918—1920 division was held in June 1919. G. Appa Rao of the 1918—1920 division won the Board of Visitors' gold medal for the highest first-year student.

Messrs. Tireman, Wimbush, F. J. Marshall, D. L. Sathe and K. R. Venkataramana Ayyar were the examiners for the final examinations. The orals were as usual supervised by the Board of Visitors.

The senior division was up to the standard of previous years. While no student showed exceptional brilliancy, the tail was above the average and there were no failures.

The examiners' reports as a whole were favourable especially in forestry (the most important subject). Certain suggestions will be given effect to as far as possible during the coming year.

The lack of text-books in range administration and engineering has been a serious hindrance in the past, but their compilation has been entrusted to Messrs. Venkataramana Ayyar and Crothers under the supervision of the Principal and completion may be expected at an early date.

Students' plates were bound at the end of the course and returned to them: but drawings of very exceptional merit are retained and hung on the college walls.

Greater attention is being devoted during headquarter terms to practical work for which special facilities are now provided by the Demonstration Forest and Engineering Park. Each division has put in about six hours per week in manual and practical operations outside the lecture room.

Sergeant Jones of the Central Recruit School examined the students in gymnastics. The examiner reported that the students as a whole performed the exercises satisfactorily. Selected students gave a gymnastic display before the Board of Visitors.

After the distribution of prizes and certificates on 30th June, a garden party was held in the Ornamental Park. It was attended by a considerable number of old students and by many guests from Coimbatore.

CHAPTER III.—TOURING, HEALTH, CONDUCT AND ADMINISTRATION.

The touring season commenced at the beginning of October as in the previous year, the students returning to headquarters for ten days at the beginning of November for the periodical examinations.

Programme of touring.—Owing to the Acting District Forest Officer having informed the Principal at the eleventh hour that a visit to Mount Stuart would by reason of the influenza be attended by grave risk, it was necessary at the last moment to alter the programme and to exclude Mount Stuart.

Senior division.

October.—Komuttiyeri (Javadi hills)—Marking for felling under improvement method. Special tending of sandal trees; thinnings in bamboo experimental plots. Forest village system was studied in detail. Sandalwood forest depot was visited and stock checked. Study of the transport system. Examination of the flora of the plateau. Demarcation of sample plot and special tending area.

November—December.—(South Malabar)—Stem analysis of teak. Intermediate and final thinnings. Study of teak natural forest. Investigation of the flora of the locality. Construction of single lock bridge, cantilever bridge, road construction.

January.—Walia (Central Coimbatore)—Marking of standards. Inspection of fire and guide lines—study of regeneration by root suckers, enumeration of sample plots, calculation of volume of a coppice with standard forest at different ages, taking the mean average increment to be constant. Study of the flora. Construction of fuel slide. Practice trials.

February.—Sativayal (Central Coimbatore)—Marking of standards and preparation of working-plan report; inspection and burning of guide and fire lines. Botany excursions. Road construction, boundary rectification. Combined practice trial.

April—May.—Bandyshola (Coonoor)—Ringing of blue gum trees, method of working of eucalyptus for fuel and for charcoal. Mowing of eucalyptus seedlings, measurements of height and girth of trees—charcoal manufacture in permanent kilns, study of eucalyptus oil distilling factory. Economic felling of eucalyptus trees. Study of natural orders of shola species and examination of shola forests. Study of labelled trees in Sim's Park. Final survey examination. Inspection of the main College road and check of gradients.

The hearing of forest cases was attended at the Magistrate's court in head-quarter terms.

Junior division.

October.—Waliar (Central Coimbatore).—Harvesting and marking of standards, analysis enumeration of sample plot, road alignment, practice in contouring, road repairs, survey of coupes, and chain survey of college camping ground.

November-December.—(South Malabar).—Thinning in teak plantation and extraction, study of young plantation, natural forest, enumeration and volume calculation, study of soils, marking and felling for thinnings, inspection of clear felled forest.

Visits were paid to a rubber estate, Kallai tiles factory; fish canyery; saw mills; Calicut furniture company; Dutt's oil mills; Soap works; and coconut tope. Repairs to road works. Timber dragging and rafting. Construction of culverts; alignment of roads; inspection of buildings under construction, and of laterite quarry; blasting rocks under water; inspection of Nilambur Range office records and visit to Bypore Government department.

January.—Mundanthorai (Tinnevely district).—Study of *Hardwickia binata* and of experimental thinned and unthinned plots; artificial regeneration; study of effect of ringing trees over natural growth in ever green forest; sylviculture of teak, volume calculation; alignment of roads; reducing gradients in zig zags; check measurement of Ranger's quarters under construction.

February.—Sadivayal (Central Coimbatore).—Construction and burning of charcoal kiln, inspection of sandal nursery, *Dalbergia latifolia* and *Pterocarpus Marsupium* dibbled area, cutting of fire lines, dibbling sandal seed; freeing natural regeneration; burning fire lines; survey of coupes and of the college camp, road improvement; alignment of roads with Ceylon ghaat tracer; combined practice trial. The camp at Sadivayal was for both divisions simultaneously. The difficulties that prevailed in previous years here manifested themselves once more.

April-May.—Aramby (The Nilgiris).—Enumeration and demarcation of sample plots, height and girth measurement of blue gum trees, thinnings, ringing, and marking of eucalyptus, examination of named trees in Government gardens, checking and correcting the compartment limits, checking the boundaries of the reserved forest with section 16 notification and alignment of cart road.

The students did not attend the elephant sale as it was not held at Waliar but at Pattambi.

As usual all operations on tour have been recorded in the College tour journals. Extracts of special notes being communicated through the Conservators to the District Forest officers concerned. The College tour journals were typed. Both divisions suffered severely from indifferent and inefficient havildars.

Fifty-six students passed in swimming. The thanks of the College are due to Messrs. Bourne, Barry, Longrigg and Venkatarama Ayyar for the trouble taken by them to render the camps comfortable and advantageous. The discontinuance of the Waliar and Sadivayal camps has been recommended.

The Inspector-General of Forests visited the College on 1st December 1918 and the students of both the divisions at Nilambur on 14th December 1918.

The Senior Provincial Service class from Dehra Dun under Messrs. Bourne and Kanji Lal visited the College on February 21st. The students were accommodated in the hostels.

Health.

Nearly all cases were treated by the College Sub-Assistant Surgeon Mr. D'Cruz. In spite of influenza the health of the College on the whole was very satisfactory during the year. Mr. D'Cruz by his medical discipline prevented quite as much as cured sickness.

The College continued to receive its supply of dairy produce from the Agricultural College. The provision stores and the fuel depot opened last year have proved to be of benefit to the students residents on the estate.

With a very few exceptions the conduct of the students has been uniformly good. Both the physique and discipline were well up to the standard of previous years.

Of the 18—20 division, Government students who were retained after their first year—

9	joined with good characters.
6	„ satisfactory characters.
6	„ fair „
1	„ moderate „
2	„ very moderate „
1	„ bad „

At the meeting of the Board of Visitors held on 27th and 28th July presided over by the Chief Conservator of Forests recommendations amongst others were passed to the effect that—

Water-supply.—(a) The municipal well should be acquired at once.

(b) A windmill should be purchased without delay.

(c) Construction of rain water tanks should be undertaken urgently.

II. The following programme of touring should be adhered to commencing on or about November 1st:—

<i>November</i>		
<i>Senior division</i>	{	Komuttiyeri, Javadis.
<i>Junior</i>	{	Nilambur.
<i>December</i>	{	<i>Senior division</i> Nilambur.
	{	<i>Junior</i> „ Nedungayam.
<i>January</i>	{	<i>Senior division</i> „
<i>February</i>	{	<i>Junior</i> „ Karagudi.
<i>April 8th—May 18th</i>		
<i>Senior division</i>		Bandishola.
<i>Junior</i>		Arambi.

III & IV. *Calendar.*—Necessity for students bringing bicycles should be entered in the Calendar. Botany should be a major and working plan a minor subject.

V. *Accommodation.*—The estate overseer should remain in his present quarters. The Curator should occupy the sub-assistant surgeon's house.

VI. *Telephones.*—Internal system for the estate should be undertaken at once: to be linked with Coimbatore offices, etc.

VII. The museum should be extended by wings.

VIII. The two Provincial officers' quarters should be improved by the addition of a large room on each side.

Eight other subjects were referred to the Principal for settlement between the Principal and the Chief Conservator.

CHAPTER IV.—THE GASS FOREST MUSEUM—COLLEGE AND STUDENTS' LIBRARIES.

Mr. G. Viswanatha Ayyar continued to be the Curator throughout the year. Besides the improvement made in the arrangement of exhibits the museum was further remodelled on the additional experience gained by the Principal's visit to Dehra Dun to attend the meeting of the Board of Forestry held in the last week of March, where he read a paper on 'Suggestions for future Forest Colleges'. The existing building is too small to admit of further developments being made in the matter of the arrangement of the present exhibits, or of the accommodation of future contributions. The majority of the panels in the museum were polished by an expert from Calcutta. The printing of the Herbarium catalogue was sanctioned during the year. A new sandal tree was erected in the place of the old one which was earmarked for the Dehra museum. Models of the various sylvicultural systems were constructed at the College carpenter's shop. These coupled with the diagrams and models received from Dehra will afford valuable assistance in working and studying the Demonstration Forest on the College Estate.

The surroundings of the museum were improved.

About 19,080 people (excluding Madras Forest College students) as against 12,800 last year and 10,600 the previous year have visited the museum. Some of the Students' utilization and Herbarium specimens were presented to the Madras Presidency College at the request of the Professor of Botany.

The contributions to the museum were many and included—

About 400 botanical specimens by Mr. S. Abdul Qadir.

One wild dog's skin—Mr. C. S. Wilson.

One bison head—Mr. L. J. Taylor.

All members of the staff displayed a commendable zeal in the discharge of their duties. A special word of praise is due to Mr. Crothers who carried out with his usual efficiency during the period under review the varied and manifold responsibilities of house tutor.

MADRAS FOREST COLLEGE, COIMBATORE,
3rd September 1919.

F. COWLEY-BROWN,
Principal.

Administration Report, 1918-19.—Summary of revenue and expenditure for the forest year 1918-19.

Head of service.	Amount.		
	Rs.	A.	P.
Receipts.			
I (d)	178	10	6
II (d)	155	0	0
V (h)	11,112	3	5
Total	11,445	13	11
Expenditure.			
Refunds	47	8	0
A.—Conservancy and Works.			
A (vi) (c)	3,722	2	0
A (vii) (a)	3,248	3	4
A (vii) (b)	1,327	13	11
A (vii) (c)	2,228	10	1
A (viii) (e)	4,838	14	5
A (viii) (g)	1,806	11	7
A (ix) (c)	1,955	14	3
Grain compensation allowance	15	0	0
Total	19,143	5	7
B.—Establishment.			
B (i) (b)	43,663	3	9
B (i) (c)	29,566	8	5
B (i) (d)	4,017	5	3
B (i) (e) and grain compensation allowance	5,285	6	0
B (ii) (b)	6,058	2	6
B (ii) (c)	1,392	3	0
B (ii) (d)	1,000	3	11
B (iii) (b) (1)	18	0	0
B (iii) (b) (2)	9,298	2	11
Total	1,00,299	1	9
Total, A and B	1,19,442	7	4

Abstract showing the live-stock, stores, stools, etc., for the year ending 30th June 1919.

District.	Description of stock.	On hand at the commencement of the year.		On hand at the end of the year.		Difference in value in favour of the year.	Difference in value against the year.
		Number.	Amount.	Number.	Amount.		
Madras Forest College, Coimbatore.	Surveying and other instruments.	1,651	Rs. A. P. 6,329 13 2	1,941	Rs. A. P. 6,305 10 7	..	Rs. A. P. 1,403 2 7
	Tools	488	472 4 7	503	247 5 7	..	224 15 6
	Furniture	1,506	25,771 3 0	1,529	23,694 3 5	..	2,076 15 7
	Tents	148	2,476 1 9	146	4,428 4 6	1,963 2 9	..
	Uniforms of contractors.	97	297 15 11	82	291 7 9	..	6 8 2
	Scientific apparatus.	1,502	954 11 9	1,512	913 15 0	..	40 12 9
	Photographic apparatus.	9	504 6 0	9	429 8 4	..	74 13 5
	Gymnasium apparatus.	9	417 14 4	9	412 7 8	..	5 6 8
	Machinery (oil-engine, etc.)	2	2,767 0 0	2	2,387 5 6	..	13 10 6
	Miscellaneous ..	2,200	4,286 15 0	1,883	4,282 12 5	55 13 5	..
		7,767	44,723 6 6	7,651	43,853 0 9	2,029 6 2	3,912 2 11

SUMMARY OF PROGRESS DURING THE YEARS 1914-15 to 1918-19.

The following is a summary of the progress made in Forest Administration in the Circle during the quinquennium ending 1918-19.

2. The important event during the period under review was the great European war which commenced early in 1914-15 and prolonged almost throughout the period. The Forest Department was a useful resource and contributed to the war by supplying timber, tanning materials, wax, etc., required for war purposes, involving a sacrifice of revenue to a great extent. The war checked progress in many directions. Strict economy was observed and few works of importance were undertaken. Further, the deputation of officers to Military service restricted attempts at general developments.

3. *Administration and control.*—The forest work was controlled by the Board of Revenue until a month before the close of the quinquennium when the administration of the department was transferred to the Chief Conservator of Forests which post was created recently for the Presidency. Another important change in the administration was introduced in 1916 when the relative position of the Collector and District Forest Officer was modified. The District Forest Officer was placed in a position to express his own opinion on forest matters and the Conservator was made responsible, and given control over, all technical, financial and departmental matters in his circle.

The Conservators in charge of the circle were—

Mr. A. W. Lushington, C.I.E., up to 21st September 1915.

Mr. F. L. C. Cowley-Brown up to 4th November 1916.

Mr. H. A. Latham up to 31st December 1918.

Mr. S. Cox up to 31st May 1919.

Mr. C. M. Hodgson up to 30th June 1919.

4. *Forest administration.*—The classification of reserved forests according as they require technical control or admit of management by local panchayats, with reference to the recommendations of the Forest Committee, was completed. Some of the useless and unimportant reserved forests were disafforested.

Panchayats were sanctioned during the period for the management of 35 square miles in *Kistna* and the *Kurnools*. The management in respect of 9 square miles in *Kurnool South* and *West* was not actually handed over, panchayats for 3 square miles in *Kistna* were dissolved for continued unsatisfactory work and the working of the remaining 23 square miles was satisfactory.

5. *Changes in the controlling and executive charges.*—There were no changes, except the readjustment of the boundaries of some of the ranges in *Kurnool East* and *West*.

The sanction for the trifurcation of *Gōdāvari* could not be brought into effect owing to paucity of controlling officers. The proposal to form a fourth division in *Kurnool* matured and is awaiting sanction.

6. *Forest legislation.*—Nil.

7. *Organization—Strength of the staff.*—The sanction of the Secretary of State for India, was received towards the close of the quinquennium for the reorganization of the executive and protective staffs, the inadequacy of which was long felt. The scales of pay were raised and the strength was increased; but the latter, especially that of the protective staff needs further augmentation.

The prospects of the clerical service of the department are not satisfactory. Efficiency is lacking and work is deteriorating. The reorganization of the staff with improved prospects is urgently needed.

8. *Hill tribes.*—The *Khonds* of *Ganjām* with a few exceptions have considerably improved and most of the forest works including general and fire protections are carried out by them. They have developed their skill especially in felling timber and fuel. The concession of free removal of forest products was, as usual, enjoyed by them generally without abuses. *Koyas* and *Reddis* in the *Gōdāvaris* were mostly

One model of a timber slide with sledge and turn table—Imperial Forest Research Institute and College, Dehra.

Model showing arrangement for checking velocity of sleepers—Imperial Forest Research Institute and College, Dehra.

Nine photographs of models of silvicultural methods—Imperial Forest Research Institute and College, Dehra.

Six photographs of plantations—Mr. C. E. C. Fischer.

Thanks are due to the large number of District Forest officers and Range officers who contributed panels, barks, etc., to the museum.

His Excellency Lord Pentland visited the College and museum in July 1918 in company with certain zamindars; the latter were accommodated in the hostels.

GENERAL LIBRARY.

Two hundred and ninety-three books were added, of which 20 were presented by Mr. C. E. C. Fischer, 18 by Mr. C. B. Dawson, 7 by Mr. C. Sreenivasa Rao.

STUDENTS' LIBRARY.

Two hundred and fourteen books were added, of which

123	were presented by Mr. F. A. Lodge, C.I.E.
5	Mr. P. M. Lushington.
4	Mr. C. B. Dawson.
6	Mr. R. D. Richmond.
1	Mr. R. B. Cornwell.
7	Mr. E. M. Crothers.
1	the District Forest officer, Nellore.
13	Mr. C. Sreenivasa Rao.

Owing to the liberality of Messrs. Lodge, P. M. Lushington and Richmond, the College library now contains a complete set of Indian Foresters.

A large number of magazines were sent periodically to the Military hospital at Secunderabad.

CHAPTER V.—WATER-SUPPLY, PLANTING ROADS, BUILDINGS, ETC.

On the 6th March 1919, Mr. Ramaswami Ayyar, Dehra Dun ranger (retired), was appointed estate overseer on Rs. 50 salary in place of Mr. N. Hanumantha Rao on Rs. 25. An area of nearly 6 acres round the main building of the College was converted into an ornamental park in which many varieties of trees, etc., were planted. The seedlings were obtained from the Agri-Horticultural Gardens, Teynampet, Madras. The thanks of the College are due to the Superintendent, Mr. Houghton, and to the College overseer for the interest taken in the selection of the plants and for the efficient arrangements for their immediate dispatch to Coimbatore.

Two thousand and four hundred trees were planted, of which 1,200 were reserved for the ornamental park, 200 for the new avenues, and 1,000 to replace casualties. Creepers and ornamental shrubs put down in the previous year were maintained at considerable expense.

The college is still under the same disability as before as regards an insufficient water-supply. The water available from the Public Works Department cistern amounts to about 4,800 gallons per day; the deepening of the present engine-well undertaken last year resulted in but a very trifling increase to the daily supply. Owing to the laying out of the ornamental park, nearly double the quantity previously considered sufficient for planting is required and this has to be obtained by hand-carts at very great expense. All residents on the estate suffer grievously from the lack of water.

The obvious remedies have been hanging fire now for five years. The Dhobie Khana built in 1917 at a cost of Rs. 1,800 cannot, for this reason, yet be made use of.

The full requirements of the college during headquarter terms amount to about 14,000 gallons per day of pumped water, unless the rainfall is plentiful.

Students' and servants' gardens were started on the estate during the year.

For the students' blocks displaying the best gardens, prizes were awarded. The improvements on the estate have been mainly due to the exertions and tact of the present overseer.

Mr. Arnot—water diviner, located underground streams in the estate. Owing to the want of a powerful hand pump, the capacity of the spring in the bore well dug on Mr. Arnot's advice to augment the present insufficient water-supply has not been yet definitely ascertained.

The college is indebted to many District Forest officers and Range officers for their contributions of seed, etc.

The following works were started by the Public Works Department:—

- (1) Construction of a set of quarters for sweepers (since completed).
- (2) Construction of the 11th hostel block.
- (3) Construction of separate latrines for the clerks.
- (4) Construction of masonry drain behind the clerks' quarters.

Certain new paths were laid out and many old paths were converted into metalled roads by the college contractors.

Peacocks, jungle fowl, spurfowl, partridges and quail supplied by rangers K. Venkataramanan and A. B. Fenn have been put on to the estate.

Government sanctioned a subsidy of Rs. 2,000 for the construction of the students' club. The actual cost of construction is estimated at Rs. 5,000. Rupees 1,590 have been so far subscribed in cash. Promises have been received for a considerable sum in addition.

CHAPTER VI.—GENERAL.

The stock of college was checked in detail in July 1918, and irregularities and defects brought to light were remedied.

The office was inspected by the Principal in March 1919.

The work of the office establishment.—The account work of the office continued to be satisfactory as evidenced by the Accountant-General's review and credit is due to Mr. S. Krishnaswami Ayyangar, the College Accountant.

With the development of the college the work of the store-keeper has now become complex and many-sided. The pay sanctioned is consequently inconsistent with the onerous duties and responsibility involved. The work of Mr. A. Marudachalam Pillai, the store-keeper, has, on the whole, been satisfactory. During head-quarter terms, the calls on his time and energy are incessant. With the supervision of the library and the carpenter's shop, his duties now are more than can be adequately performed by one man.

With the exception of two typists who were removed, the other clerks have, as usual, worked willingly and well.

The post of the Head Clerk of the College has been converted into that of Manager on Rs. 60-2-80. The Manager Mr. Doraiswami Ayyar has shown a rare capacity and devotion to duty during the year, and his promotion was well-deserved. For him and in a lesser measure for all the clerks, long overtime has been a normal experience.

The Imperial Instructor Mr. Dawson proceeded on two years' furlough immediately after the close of the year. He was instructor at the College continuously without leave from April 1914 till 3rd August 1919.

His enthusiasm for the college and his affection for the students were throughout his service at the College unstinted and ungrudging.

The engineering park was extended and furnished with a fuel slide, turn table and sledge, shears and derricks.

The two Engineering Provincial Instructors were deputed in July to the Sappers and Miners school at Bangalore to undergo a short refresher course.

In July 1918, the Principal was deputed to Madras to study the Museum and the Gardens of the Agri-Horticultural Society.

To the Second Indian War Loan, the students subscribed Rs. 5,100.

Athletics.—For the first time, since the starting of the college the athletic sports were held in the college grounds on the estate.

The Richmond cup was won by Senior Student C. B. Chengappa (for the second time) who at the end of the year was also awarded the Pentland Shield (also for the second time) for proficiency in athletics.

The Marathon race (6½ miles hill and plain) was run at Sadivayal, Junior Student Narayanaswami Ayyar being the winner.

The Inter-Division cup for this race presented by the late Bisaldar Major Amcer Mahomad Khan was won by the juniors.

The Inter-Division Hockey cup was also won by the juniors, who were defeated by the seniors in the Inter-Division Football match. The record of wins and losses was about the average.

employed in fire protection operations and were granted rewards in addition to wages; they do the work willingly. *Chenchus of Kurnool*.—The post of a "Special Officer" for the reformation of the *Chenchus* was created in 1916, and the first officer appointed to it was Mr. Saunders, Assistant Superintendent of Police, who took charge in December 1916, and continued to the end of the period under review. His duties are to gain the confidence of the *Chenchus*, to employ them suitably and prevent crime. The *Chenchus* are employed by the Forest Department in felling bamboos and preparing splits, in collecting minor produce, and on fire protection, and their conversion from criminals to useful people is a difficult matter which will take years to accomplish.

Central
Circle.

9. *Administration*.—The control of the department in the general administration was transferred to the charge of the Chief Conservator of Forests with effect from 1st June 1919.

10. The following officers were in charge of the Central Circle during the quinquennium ending with the year 1918-19:—

Year.	Name of officer.	Period during which he was in charge.
1914-15	Mr. H. B. Bryant	1st July 1914 to 25th January 1915.
	„ S. Cox	26th January 1915 to 30th June 1915.
1915-16	„ S. Cox	1st July 1915 to 17th December 1915.
	„ H. B. Bryant	18th December 1915 to 30th June 1916.
1916-17	„ H. B. Bryant	1st July 1916 to 30th June 1917.
1917-18	„ H. B. Bryant	1st July 1917 to 2nd April 1918.
	„ H. F. A. Wood	3rd April 1918 to 17th June 1918.
	„ H. B. Bryant	18th June 1918 to 30th June 1918.
1918-19	„ H. B. Bryant	1st July 1918 to 2nd January 1919.
	„ H. F. A. Wood	3rd January 1919 to 17th June 1919.
	„ A. B. Jackson	18th June 1919 to 30th June 1919.

11. In accordance with the G.O. No. 3020, Revenue, dated 13th October 1913, passing orders on the Forest Committee's report, on questions of grazing, provision of fuel and small timber and leaf manure, the forests were classified under six heads and the control over 116 reserved forests out of 234 placed in class V was transferred to panchayats.

12. During the year 1915-16 the system of administration in the Presidency underwent a great change consequent on the issue of G.O. No. 260, Revenue, dated 7th February 1916. The Government have placed the District Forest Officer in a more independent position than he has hitherto occupied. The object of the Government Order was while retaining the general power and authority of the Collector as head of the district for the welfare of the community in general to leave in the hands of the District Forest Officer and Conservator all purely sylvicultural and departmental matters. From the point of view of the forest administration the change has been for the better.

13. During the year 1917-18, proposals for the formation of a fifth circle were submitted to the Board by the Conservators, but no final orders have been received. In his letter No. 51, Revenue, dated India Office, London, the 3rd August 1917, the Secretary of State sanctioned an increase in the controlling staff of the Forest Department of this Presidency by the addition to the cadre of 10 Imperial officers including the Chief Conservator and of 10 Provincial officers. The appointment of the Chief Conservator was given effect to from 1st June 1919 but it has not yet been possible to make any addition to the number of Imperial officers.

14. *Changes in the controlling and Range charges*.—In 1914-15 there was an addition to the number of ranges in East Cuddapah and two of the existing ranges in Guntur and Chittoor were amalgamated. In 1915-16, two of the ranges in the Nellore district were amalgamated; portions of the Gorivikanama and Dorigallu reserves of Cuddapah district and of Eswaremala reserve of Chittoor district were transferred to Kadiri Range of Anantapur district. Sanction for the division of the old Tirupati range and a portion of Madanapalli range into two ranges, viz., Mamandur and Chamala was accorded during the year 1915-16 but was not given effect to till 1st October 1916. The division of Cuddapah into three forest charges was sanctioned in 1915-16, and was given effect to from 1st April 1917 (i.e., 1916-17) consequent on this, the old Vempalli range was divided into two ranges, viz., Vempalli and Muddanur and the old Kodur range into Kodur and Balapalli ranges. In Bellary district Hospet and Sandur ranges were amalgamated into one viz., the Hospet range in 1916-17. There was a re-adjustment of boundary between West and North Cuddapah divisions during 1917-18 and sanction was accorded by Government in their Order No. 938, Revenue, dated 6th March 1918, to class the former as a major charge and the latter a minor one. West Cuddapah was also further subdivided from 4 to 6 ranges under the sanction of Government in 1917-18 the two new ranges being named Vontimitta and Ganganapalli. In 1918-19 a third range, viz., Sriperumbudur was formed in Chingleput district with effect from 1st November 1918; consequent on the handing over of the Sandur leased forests to the Sandur Darbar on 1st July 1918 the amalgamation of Hospet range partly with Bellary and partly with Kudligi ranges was given effect to from 1st August 1919.

15. *Legislation*.—The Madras Forest Act V of 1882 was amended by the Madras Decentralization Act, 1914, giving powers to the Board of Revenue to grant pattas in reserves notified under sections 4 and 16; consequent on the appointment of the Chief Conservator for the Presidency of Madras, a Bill to amend the Madras Act V of 1882, as amended by the Madras Decentralization Act, 1914, was prepared. The Timber Transit Rules were extended to the whole of West Cuddapah and Chittoor districts during 1918-19, and as a result of same, there was more effective check over removals of timber than in previous years.

16. *Organization*.—G.O. No. 961, Revenue (Special), dated 14th May 1919, was issued giving all Imperial Forest officers now in service, to whom articles 476 and 641 of the Civil Service Regulations apply an unfettered option of retiring at any time after completing twenty years service unless they elect to come under the revised pension rules which may hereafter be issued in connexion with recommendations of the Public Services Commission, and augmentation of the time scale of pay for the Imperial Forest officers as recommended by the latter Commission was under consideration; the reorganization and increase of the executive and protective staff was sanctioned during 1918-19 and is to be given effect to from 1st October 1919.

17. The chief feature of the quinquennium was the outbreak of the war at the beginning of the period and its closure at the end of the period under review, this considerably retarded progress.

18. *Administration*.—The control of the department in the general administration continued under the Forest Commissioner until 1st June 1919 when it was transferred to the Chief Conservator which post was created in G.O. No. 3929, Revenue, dated 6th December 1917.

The headquarters of the Southern Circle were transferred from Trichinopoly to Salem in December 1918 and the following officers were in charge during the period under review:—

Mr. J. S. Battie	1st July 1914 to 1st November 1914.
„ P. M. Lushington	2nd November 1914 to 9th October 1918.
„ H. F. A. Wood	10th October 1918 to 30th December 1918.
„ H. A. Latham	31st December 1918 to 16th May 1919.
„ A. B. Jackson	17th May 1919 to 16th June 1919.
„ H. A. Latham	17th June 1919 to 30th June 1919.

Southern
Circle.

A Forest Engineer (Mr. F. J. Marshall) was appointed in 1914, his headquarters are at Salem.

The position of the Collector and the District Forest Officer was considerably altered by the issue of G.O. No. 260, Revenue, dated 7th February 1916. As a result, a great deal of extra work has been thrown on the Conservators more especially in the matter of appeals.

North Arcot Revenue district was made three forest charges with effect from 1st April 1917 and the land revenue administration on the Javadis was transferred to the Forest Department and the District Forest Officer, West Vellore, was appointed a 'Deputy Collector'.

A fairly complete system of roads has been commenced for opening up the Javadis, the first road being opened in August 1918 by the late Hon'ble Mr. H. F. W. Gillman, I.C.S.

The forests on the banks of the Cauvery and the Coleroon which were under the control of the Forest Department in Trichinopoly, Tanjore and South Arcot districts were transferred to the Public Works Department. In Tanjore, owing to the remaining reserves being few and far apart, the control of them was transferred to the Collector from 1st December 1918.

Messrs. E. A. Davis, I.C.S., and A. W. Lushington, O.L.E., I.F.S. (retired) were appointed on special duty, the former for formation of panchayats and the latter for timber investigation.

The circle now consists of the following divisions:—

- | | |
|-------------------|--------------------------|
| 1. North Vellore. | 6. South Salem. |
| 2. South Vellore. | 7. Trichinopoly. |
| 3. West Vellore. | 8. Madura. |
| 4. South Arcot. | 9. Tinnevely-cum-Ramnad. |
| 5. North Salem. | |

19. *Organization.*—At the end of the quinquennium, the re-organisation scheme for the executive and protective staff, the need for which had been felt for several years, was sanctioned and is to be given effect to in the course of the year 1919. As a result of the inquiry held by the Public Service Commission the pay and allowances of Imperial officers of the department have been improved. Orders about the Provincial service are still awaited.

20. *Administrative control.*—Mr. C. D. McCarthy held charge of the circle for the whole period except from 12th April 1916 to 27th October 1916, when Mr. H. A. Latham was in charge, and from 12th May 1919, when Mr. H. Tireman assumed charge.

21. *Changes in the controlling charges.*—The division of *South Kanara district* into two forest districts designated *Mangalore North* and *Mangalore South* was brought into effect from 16th May 1916.

22. *General.*—During the period under review 19 panchayats were formed and managed 16 reserved forests covering an area of 10,411.52 acres. With one exception the panchayats are unfavourably reported on.

Mr. G. S. Hart, C.I.E., Inspector-General of Forests, visited the *Nilgiris* and *South Malabar* in 1918-19 inspecting the Nilgiri Eucalyptus plantations, the Mudumalai forests and the Nilambur Teak plantations.

23. *Changes in area.*—The area under the control of the department decreased from 5,123 to 5,112 square miles. The decrease was chiefly due to disafforestations of reserved forests and to excisions from reserved lands—

	At commencement of the period.					At close of the period.				
	SQ. MLS.					SQ. MLS.				
Reserved forests	..	..	..	..	..	4,614	..	..	..	4,621
Reserved lands	..	..	..	..	..	567	..	..	..	489
Leased forests	..	..	..	..	..	2	..	..	..	2
Total	..	..	..	..	..	5,123	..	..	..	5,112

In addition to the above, 436 square miles of unreserved lands in *Gōdāvari* Upper and *Kistna* which are not shown in the returns were under the control of the department.

24. *Further reservation.*—A scheme for the reservation of areas in the Rampa forests of the *Gōdāvari* Agency was formulated during 1914 and 21 blocks with an area of about 300 square miles were proposed to be reserved. Substantial progress could not be made in their reservation for want of proper maps. The areas had to be surveyed and mapped before preparing the initial notifications for publication. Surveyors from the Madras Survey Department who were deputed to survey the areas during 1915-16 surveyed ten blocks and mapped four of them; the survey records of the remaining six were found faulty and needed rectification. The initial notifications in respect of four blocks mapped (12 square miles) were published during 1918-19. The question of employing a special staff to push on the work is under correspondence.

In *Ganjām*, it is proposed to convert some of the unreserved lands containing valuable sal growth into reserved forests and such areas are being selected for reservation.

25. Changes in area—

	At commencement of the period.					At close of the period.				
	SQ. MLS.					SQ. MLS.				
Reserved forests	..	..	..	..	..	5,788	..	..	..	5,714
Do. lands	..	..	..	..	..	73	..	..	..	20
Total	..	..	..	..	..	5,861	..	..	..	5,734

Central Circle.

Reserved forests.—Twelve square miles were transferred from reserved lands but 74 square miles were disafforested, 3 square miles handed over to Putlampalli shrotriendrar and 9 square miles deducted on account of correct computation and resurvey. This resulted in a net reduction of 74 square miles of reserved forests.

Reserved lands.—Twenty-four square miles were notified under section 4 but 12 square miles were transferred to reserved forest; 62 square miles of Sandur leased forest handed back to the Darbar, two square miles excluded on account of wrong inclusion originally in Errakonda extension II, Anantapur district, and one square mile (727 acres) of Sriharikota, Nellore district, was notified and cancelled, thus resulting in a net deduction of 53 square miles of reserved lands.

26. *Changes in area.*—The area under the control of the department fell from 4,430 square miles to 4,308 of which areas "reserved forests" constituted 4,359 and 4,243 square miles respectively the balances being reserved lands.

The decrease was due chiefly to the disafforestation of areas unsuitable for retention as forests.

27. The area under the control of the Forest Department has decreased from 4,251 to 4,238 square miles, the difference being chiefly due to disforestation. The areas at the commencement and close of the quinquennial period were as shown below:—

	At the commencement of the period.					At the close of the period.				
	SQ. MLS.					SQ. MLS.				
Reserved forests	..	..	..	..	..	4,071	..	..	..	4,103
Reserved lands	..	..	..	..	..	53	..	..	..	8
Leased forests	..	..	..	..	..	31	..	..	..	31
Leased lands	..	..	..	..	..	96	..	..	..	96
Total	..	..	..	..	..	4,251	..	..	..	4,238

28. *Forest Settlement.*—The balance under settlement at the end of the quinquennium was 489 square miles; of which, 418 square miles have actually been settled and the final notifications in respect of which will be published during 1919-20.

Central
Circle.Southern
Circle.Western
Circle.Northern
Circle.Central
Circle.Southern
Circle.Western
Circle.Northern
Circle.Central
Circle.

49. The average annual number of forest offences under the quinquennium under review was 9,539 against 8,656 during the previous five years.

50. The average annual number of forest offences reported during the quinquennium was 12,305 as compared with 12,553 of previous quinquennium. The principal decreases were in the *Trichinopoly* and *South Arcot* districts and there were considerable increases in *Madura*, *South Salem* and *North Salem*. It is feared that the decreases are not due to want of offences in *Trichinopoly* where the present District Forest Officer is having a busy time. In *South Arcot* several reserves which contributed to swell the total have been disafforested.

51. The average annual number of forest offences during the quinquennium under review was 3,374 as compared with 3,404 during the five years ending with 1913-14.

52. *Fire protection*.—The average annual area under systematic protection during the preceding quinquennium amounted to 1,523 square miles, the average of failures being 20 per cent; the area was increased during the period under review to an average of 2,273 square miles, the failures amounting to 16 per cent. A large area which was under general protection during the previous quinquennium was brought under rigid protection.

53. The average area under special fire protection amounted to 2,179 square miles, the average failure being 12.9 per cent. In the previous period the average area under protection was 1,716 square miles, while failures amounted to 9.2 per cent. The increase in the area as compared with the previous five years ending 1913-14 was due to additional areas brought under protection in all the districts except *Anantapur*, *Guntūr* and *Chingleput*.

54. During the period under review the average area under systematic fire protection amounted to 1,301 square miles, the average failure being 3.9 per cent, while in the previous period the average area under systematic protection was 1,046 square miles and the failure being 1.6 per cent. The increase in the areas brought under protection was in *West Vellore*, *South Salem* and *Madura*.

55. During the period under review the average annual area under systematic protection amounted to 1,080 square miles, the average of failure being 4 per cent, whereas the average area during the five years ending with 1913-14 was 1,063 square miles with an average failure of 5.5 per cent.

56. *Protection from cattle*.—Reserved forests were entirely closed to goats with the exception of a few under the rights admitted at Forest Settlement. During the quinquennium under review the average area annually open to all animals other than goats was 3,725 square miles or 73 per cent of the total average forest area. The average number of animals permitted to graze on payment decreased from 610,907 to 554,648 in the period under review. The incidence of grazing exceeds the possibility in several reserves.

57. With the close of the year 1915-16, goats were prohibited from entering all reserves except in portions of *Kayar*, *Kolathur* and *Mambakkam*, *Chingleput* district, used as artillery practice ground and in 1916-17 only 412 goats were allowed to graze in *Chingleput* district; subsequently goats were excluded from all reserved forests. The average area annually open to cattle other than goats decreased by 486 square miles, the average area open to grazing being 4,642 square miles. During the same period the average forest area amounted to 5,798 square miles or 135 square miles (2.3 per cent) less than during the previous quinquennium. The average number of all animals admitted to graze decreased from 1,586,837 in the previous quinquennium to 1,094,921 in the period under review.

The regulation of grazing in forest areas was attended to and satisfactory progress was made in *North* and *South Cuddapah* where the incidence of grazing is 6.7 acres and 7.5 acres per cow unit respectively. In *West Cuddapah* the incidence of grazing is 4.2 acres per cow unit and in order to reduce the grazing incidence, the grazing fees for *Sugali* cattle and for cattle coming from villages beyond 5 miles from the reserve have been enhanced from 3 annas to Re. 1. In *Nellore*, limitation of grazing was introduced under *kancha* system, under which all reserves except *Sriharikote* and the *casuarina* plantations are worked. In *Chingleput* district the

kancha system was introduced during 1917-18 and it is reported to be working satisfactorily. A grazing scheme for *Guntūr* district was sanctioned during 1915-16 where the grazing incidence is 4.02 acres per cow unit. The grazing incidence was reduced in *Anantapur* district in 1918-19 on account of enhancement of grazing fees and each cow unit got 4.06 acres against 2.01 acres in the previous year. In *Bellary* the question of general enhancement of fees was dropped by the Board in Board's Proceedings Forest Mis. No. 185, dated 16th May 1918, on the ground that the district is too backward to admit of any change; the question of introducing the forest village system is under consideration. In *Chittoor*, the incidence of grazing is still heavy and a new grazing scheme will shortly be prepared.

58. During the period under review the average area closed to all animals increased by 9 per cent and that open to all cattle except goats fell by 10 per cent. The average area open to grazing was 3,502 square miles against 3,371 square miles of the previous quinquennium. The decrease was due to the closure of several reserves to grazing on account of incendiarism, etc.

The average number of animals admitted to graze was 852,168 against 1,204,285 of the previous period. The average incidence now works out to one animal for every 2.63 acres which is very heavy for the class of grazing available. The decrease is in part due to enhancement of the grazing fees.

During the period under review *goat-browsing* was entirely forbidden; reserves were handed over to panchayats; and the forest village system was introduced in some districts.

59. The whole forest area is closed to goats. The average area annually open to all animals other than goats was 3,316 square miles and the area open to all animals except sheep and goats, 298 square miles, or 78 per cent and 7 per cent respectively of the total area. The average number of animals permitted to graze on payment increased from 360,757 in the previous quinquennium to 381,493 in the period under review. The Forest village system was sanctioned for one range of *South Coimbatore* and one range and one reserve in *Central Coimbatore* division.

60. *Yield and outturn*.—The following are comparative average annual outturns of major and minor produce for the two periods:—

	Timber and fuel in thousands of cubic feet.	Number of bamboos in lakhs.	Minor produce including grass and grazing value in lakhs.
1909-10 to 1913-14	6,538	161.1	37.2
1914-15 to 1918-19	6,120	161.6	35.8

The average annual outturn of timber and fuel and the average value of minor produce decreased by 6.3 and 3.7 per cents respectively while the outturn of bamboos increased by .3 per cent.

61. The following statement shows the average annual outturn of the forests for the two periods:—

	Timber and fuel in thousands c.ft.	Bamboos in number.	Minor produce value.
		RS.	RS.
1909-10 to 1913-14	6,838	40,56,803	7,43,910
1914-15 to 1918-19	7,591	24,33,089	8,55,796

There was an increase of 9.9 per cent on the average annual outturn of timber and fuel and of 13.07 per cent in the average annual value of minor produce. There was a decrease of 63.4 per cent in the average number of bamboos extracted.

62. The following statement shows the average annual outturn for the two periods:—

	Timber and fuel, c.ft.	Bamboos.	Minor produce.
		RS.	RS.
1909-10 to 1913-14	9,207,677	97,559	2,51,092
1914-15 to 1918-19	5,501,879	1,16,779	4,24,721

There was a decrease under timber and fuel and increases under bamboos and minor produce, the percentages being -40.2, +22.2 and +68.1 respectively.

Central
Circle.

29. The works of forest settlement was practically complete in the circle except in the case of small extensions and additions to the existing reserved forests. Owing, however, to corrections of area, disafforestation, etc., the area finally settled at the close of the year 1918-19 amounted to 5,714 square miles as compared with 5,788 square miles at the end of 1913-14.

Southern
Circle.

30. Ten and a quarter square miles were settled during the period and reservation is now practically complete except in *North* and *South Salem* districts.

Western
Circle.

31. *Forest Settlement*.—The area finally settled at the end of the period was 4,134 against 4,102 square miles at its commencement. The balance under settlement at the close of the quinquennium was 2.69 square miles, of which the actual settlement of 2.55 square miles was completed, but notifications under section 16 had not been published at the close of the period.

Northern
Circle.

32. *Demarcation*.—The total length of the artificially marked boundaries at the end of 1918-19 was 5,758 miles while that at the commencement of the quinquennium was 5,882 miles. The decrease was due to disafforestations and rectification of errors.

Central
Circle.

33. The total length of boundaries artificially demarcated at the close of 1913-1914 was 11,770 miles as compared with 11,442 miles nearly at the close of the quinquennium. The decrease is due to disforestation of reserves and plantations. The instructions issued by the Conservator in his Circular No. 17 of 1913, dated 3rd May 1913, to the effect that nearly every reserve which is to be retained under the management of the department should be demarcated on the lines indicated in the circular have been attended to and satisfactory progress has been made in re-demarcating the reserves the original demarcation of which was found to be perfunctory.

Southern
Circle.

34. The total length of artificially marked boundaries at close of 1918-19 was 8,590 miles. During the period under review 260 miles of boundaries were permanently demarcated mostly in *Madura*.

Western
Circle.

35. The total length of artificially marked boundaries at the close of 1918-19 amounted to 6,785 miles as compared with 8,056 miles at the commencement of the quinquennium, the decrease being due to disafforestation of reserves in *The Nilgiris* and re-calculation after more accurate survey in *North* and *South Mangalore*. Three hundred and seventy-nine miles remained to be demarcated on 30th June 1919.

A special staff was appointed in *The Nilgiris* in April 1915 for the demarcation of the new boundary between *The Nilgiris* and *Coimbatore* and also for the verification of the boundaries of the reserved forests in the former division. Fourteen and half miles of the district boundary were demarcated and the boundaries of 49 reserved forests verified and those of 39 demarcated. The special staff was disbanded in 1918-19.

Northern
Circle.

36. *Forest surveys*.—There were no operations by the Survey of India during the quinquennium. Local surveys of forests, coupes, alignment of roads, etc., were carried out wherever necessary.

Central
Circle.

37. 269.799 square miles on the 2-inch scale and 159.385 square miles on the 4-inch scale were surveyed by the Survey of India Party during the five years; the Index map of the Madras Presidency was published during 1914-15. Departmental surveys call for no remarks.

Southern
Circle.

38. The survey of the reserved forests of the circle on the scale of 2 inches = 1 mile was taken up by the Survey of India Party during 1914-15 in *South Vellore* and an aggregate area of 66 miles was topographically surveyed. Departmental surveys call for no remarks.

Western
Circle.

39. A special surveyor deputed by the Survey of India completed the final survey of seventeen teak plantations covering 6,458 acres in *South Malabar* and prepared maps for them on the 8-inch scale. A surveyor deputed by the Madras Survey Department completed the survey of estates on the Anamalais in *South Coimbatore* and *Irula* settlements in *The Nilgiris*.

Northern
Circle.

40. *Working plans*.—The areas brought under working plans at the beginning of 1914-15 were 2,033 square miles which included erroneously 59 square miles. Regular working plans for 92 square miles and preliminary working plans and

tentative working schemes for 689 square miles were compiled and sanctioned. Plans for 14 square miles were cancelled and those for 20 square miles revised. A regular working-plan for the plains sal forests in *Ganjām* covered by a tentative working scheme was prepared and another for hill forests is under preparation. The areas under working plans at the close of the quinquennium, excluding those disafforested, were 2,738 square miles; of which, 864 square miles have regular working plans and the balance preliminary plans and tentative working schemes.

41. Up to the end of the year 1913-14, working plans were compiled for 1,792 square miles; during the quinquennium working plans were compiled for 488 square miles; but working plans for 1,369 square miles were cancelled on account of the impossibility of carrying out the provisions, disafforestation of areas and the cessation of the period covered by working plans. There were only 911 square miles covered by working plans at the close of the quinquennium.

Working plans are urgently required in place of those cancelled but until a special working plans branch is sanctioned, no satisfactory progress in the preparation of working plans is possible with the present hopelessly inadequate staff.

42. During the quinquennium working plans were compiled and submitted for 369 square miles. An aggregate area of 501 square miles has been taken up for the preparation of working plans. The area for which working plans have still to be taken in hand is 541 square miles.

43. During the quinquennium, working plans were sanctioned for 58 square miles; and the areas for which working plans were compiled but not sanctioned at the close of the period were 127 square miles. The total area under sanctioned working plans at the close of the quinquennium was 1,854 square miles against 1,614 square miles at the commencement. The difference is due to the adoption of correct figures furnished by District Forest officers. Working plans have still to be prepared for an area of 1,214 square miles, and are not required at present for an area of 997 square miles, as there is no possibility of working the forests concerned for some years. A special working-plan staff entertained at the close of the year 1915-16 worked in the Circle till the end of the quinquennium.

44. *Communications and buildings*.—The average annual expenditure on communications, buildings and other works during the quinquennium under review was Rs. 59,763 against Rs. 92,371 during the preceding five years. The decrease was due to a large outlay on the construction of roads and buildings during the past quinquennium and to the observance of economy on account of war during the period under review.

45. The average annual expenditure on communications, buildings and other works amounted to Rs. 42,119 during the period against Rs. 65,175 during the previous five years. The decrease in expenditure was due to the postponement of works on account of financial stress.

46. The average annual expenditure on communications and buildings and other works amounted to Rs. 98,445 during the period under review as compared with Rs. 83,538 of the previous quinquennium; the increase was due to the construction of expensive roads on the Javadis: the general opening up of forests for exploitation, and the construction and maintenance of rest-houses and quarters was continued but not as fast as would have been the case but for the war.

47. The average annual expenditure on communications, buildings and other works during the quinquennium period ending 30th June 1914 was Rs. 89,524; whilst that during the five years under review was Rs. 80,894; the decrease was chiefly due to the war.

48. *Forest offences*.—The average annual number during the previous quinquennium was 3,496, whilst for the period under review it rose to 3,737. *Injury by fire, unauthorized felling and other offences* increased by 89, 11 and 16 per cents respectively, while *unauthorized grazing* decreased by 20 per cent. The increase under *injury by fire* was due to the cases of incendiarism having been treated as undetected offences; the offences in unreserved lands were brought to returns more accurately during the period and this accounts for the increase under the other two heads. The decrease under *unauthorized grazing* was due to better protection.

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No reasonable explanation of the figures under 'Timber and Fuel' is available. The difference may in part be due to the fact that under timber and fuel up to 1912-13 we were largely working departmentally and could get actual figures whereas, since, a conversion figure, based usually on the seigniorage, is adopted for converting rupees at auction into cubic feet in the timber accounts.

Under minor produce and bamboos the increase is due to general enhancement of prices especially for tanning stuffs.

Western
Circle.

63. The sub-joined table shows the average annual outturn of the forests for the two periods :—

	Timber and fuel in thousands of c. ft.	Bamboos value, RS.	Minor produce includ- ing grass and grazing value, RS.
1909-10 to 1913-14	4,366	34,841	1,49,182
1914-15 to 1918-19	5,948	42,135	1,94,657
Increase	1,682	7,294	45,475
Percentage of increase ..	39.4	20.9	30.4

Northern
Circle.

64. *Financial results.*—The average annual financial results for the last two periods were as follow :—

	Revenue, RS.	Expenditure, RS.	Surplus, RS.
1909-10 to 1913-14	7,78,696	8,63,147	— 84,451
1914-15 to 1918-19	7,76,961	6,73,760	+ 1,03,201

The circle was working on an average annual deficit of Rs. 84,451 during the preceding quinquennium and this was due to greater outlay on non-remunerative works, such as the construction of roads and buildings and formation of plantations. The financial position of the circle was considerably improved during the period under review. There was a slight fall in the gross revenue, while the expenditure decreased by about 22 per cent. But the very high surplus will go down considerably during the next quinquennium when most of the deferred works will be taken up and improvements in other directions carried out.

Central
Circle.

65. The average annual financial results for the last two periods were as follows :—

Year.	Revenue, RS.	Expenditure, RS.	Surplus, RS.
Quinquennium ending 1913-14	11,82,412	7,98,212	3,84,200
Do. 1918-19	12,42,004	6,37,165	6,04,839

The gross revenue increased by 4.8 per cent, the expenditure decreased by 25.3 per cent and the surplus increased by 36.5 per cent. The decrease was due to financial stringency on account of war.

Southern
Circle.

66. The average annual financial results for the two periods were as follows :—

Year.	Revenue, RS.	Expenditure, RS.	Surplus, RS.
1909-10 to 1913-14	13,76,456	7,31,875	6,44,581
1914-15 to 1918-19	13,61,539	6,60,056	7,01,483

The increase is due for the most part to the large rise in the price of sandal-wood.

In some districts there has been a fall in the annual net surplus during the quinquennium, in Madura amounting to Rs. 55,000, due generally to the stoppage of goat browsing in, and the removal of manure leaves from, reserved forests—in Madura the cessation of the sale of tank-bed coupes has been an additional factor.

Western
Circle.

67. *Financial results.*—The average annual financial results for the last two periods were as shown below :—

	Revenue, RS.	Expenditure, RS.	Excess or deficit, RS.
1909-10 to 1913-14	7,77,773	7,96,164	— 18,391 (deficit)
1914-15 to 1918-19	12,32,509	9,03,189	+ 29,320 (surplus)

The average gross revenue for the period under review increased by 58.6 per cent and the expenditure by 13.4 per cent. During the year 1914-15, the circle worked at a loss, but in the succeeding four years the financial position was very much improved and the average annual net surplus for the period under review was 26.7 per cent.

68. *Forest education.*—Twenty-nine subordinates were deputed during the quinquennium under review for training in the Provincial College at Coimbatore; of these five were sent back being incapable of following the course, eleven secured higher and eight lower standard certificates, one failed and four were undergoing training.

Northern
Circle.

The training of the *protective* staff (foresters and guards) was carried out in the Vernacular Training school having six months' course in a year, sanctioned separately for the circle. Two sessions of the school were located in *Kurnool South* and two in *Ganjām*. The 1917 session was not held for want of suitable candidates. The school has done excellent work and a number of lower subordinates have been usefully trained.

69. *Forest education.*—During the period under review two rangers and 26 deputy rangers were deputed to the Madras Forest College; three of the Deputy rangers were sent back from the college for incapacity to follow the course, three failed and one died at the college. Of the 17 candidates that successfully underwent training, two obtained Honour's Certificates, 13 higher and two lower standard certificates.

Central
Circle.

70. *Vernacular training school.*—The school was held twice in West Cuddapah and once in each of the districts, Nellore, Chittoor and Chingleput. One hundred and thirty-nine candidates on the whole were trained in the school during the period under review.

71. *Forest education.*—During the period under review, the Madras Forest College was transferred to the new building at Lawley Road, Coimbatore. The following table shows the results during the quinquennium for the students sent up from this circle.

Southern
Circle.

Period of sessions.	Total number trained.	Award of certificates.				With- drawn.
		With honours.	Higher standard.	Lower standard.	Failure.	
Period ending June 1915 ..	4	1	2	..	..	1
" " 1916 ..	5	..	5	..	..	..
" " 1917 ..	5	..	4	..	..	1
" " 1918 ..	6	..	4	1	..	1
" " 1919 ..	7	1	4	2	..	..

The Vernacular Training School for training foresters and forest guards was opened annually as usual. The results are summarised below :—

Period.	Total trained.	Award of certificates.			Attendance.
		First Class.	Second Class.	Third Class.	
February to July 1915	27	12	10	5	..
" " 1916	20	5	7	6	2
" " 1917	23	6	23	..	..
" " 1918	22	9	11	..	2
" " 1919	30	15	14	..	..

72. *Forest education.*—Twenty-one students returned from the Madras Forest College during the five years, three obtaining honours, seventeen higher standard certificates and one lower standard certificate.

Western
Circle.

A Vernacular Training school for the training of foresters and guards was held every year in various districts. The results are said to be satisfactory.

Appendix A.—Comparative statement of number and origin of fires that occurred during 1918-19—cont.

C. Fires beginning inside the reserves or fire traced areas.																	Total of A, B and C and cause unknown.								
Owing to carelessness or accident.																									
By intentional firing.																									
District.	A. Fires caused by accident or through carelessness in burning fire lines.		B. Fires entering the forests by crossing exterior fire lines.		By workmen engaged in the forests or by purchasers of forest produce and by hay cutters.		By villagers, etc., passing through the forests.		By railway engines.		By lightning or fire balloons.		In order to obtain new grass.		In order to turn out game or to reduce cover.		Maliciously fired.		Total.	Number of fires.	Area burnt in acres.	Cause unknown.	Total of A, B and C and cause unknown.		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)						(19)	(20)
Southern Circle.																									
Vellore, North ..	1	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Arcot ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Salem, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tiruchinopoly ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madura ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevely ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	1	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Western Circle.																									
Mangalore, North ..	8	19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	3	225	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Malabar, North ..	8	36	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tras Nilgiris ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kollegal ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coimbatore, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. Central ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	27	3,577	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Grand total for 1918-19 ..	53	8,868	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Grand total for 1917-18 ..	57	9,263	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

* Includes the number of fires not under special protection.
(b) Excludes one fire which occurred in unreserves.

(c) Less than 1 acre.

APPENDIX B.—Comparative statement of impounded cattle for 1918-19.

District.	Number of cattle impounded.		Average for three years ending 1918-19.
	1917-18.	1918-19.	
Northern Circle.			
Ganjam	1,974	1,657	2,027
Vizagapatam	318	917	918
Godavari, Upper	278	639	506
Do. Lower	766	677	736
Kistna	4,141	3,819	4,167
Kurnool, East	2,797	5,592	6,247
Do. South	2,611	3,596	2,488
Do. West	2,258	8,257	5,341
Total	16,737	25,145	22,379
Central Circle.			
Bellary	4,971	8,543	7,293
Anantapur	12,994	11,958	11,952
Quntar	21,769	28,674	22,528
Chandapah, North	2,631	1,576	2,268
Do. South	857	1,100	1,405
Do. West	3,501	3,124	6,413
Nellere	8,228	8,622	7,261
Chinglapet	3,348	2,614	3,344
Chittoor	5,458	7,357	6,496
Total	62,287	73,498	69,585
Southern Circle.			
Vellore North	6,732	5,400	6,439
Do. South	3,461	6,477	4,800
Do. West	1,217	2,226	2,046
South Arcot	5,043	3,479	5,336
Salem North	2,506	2,911	2,695
Do. South	3,402	3,569	3,386
Tiruchinopoly	2,284	6,420	3,839
Madura	4,266	5,093	4,221
Tinnevely	3,001	2,693	2,673
Total	32,431	37,258	34,716
Western Circle.			
Mangalore, North	499	313	451
Do. South	449	462	466
Malabar, North	62	83	66
Do. South	253	473	270
The Nilgiris	577	464	645
Kollegal	492	2,884	1,412
Coimbatore, North	3,181	4,595	3,611
Do. Central	1,158	1,753	1,361
Do. South	730	439	591
Total	7,351	11,484	8,872
Grand total, Presidency	118,803	147,386	135,551

APPENDICES.

APPENDIX A.—Comparative statement of number and origin of fires that occurred during 1918-19.

District.	C. Fires beginning inside the reserves or fire-traced areas.										Total of A, B and C and areas unknown.													
	Owing to carelessness or accident.					By intentional firing																		
	A. Fires caused by accident or through carelessness in burning fire lines.		B. Fires entered by crossing exterior fire lines.		By workmen employed in the forests, by purchasers of forest produce and by hay outters.		By villagers, travellers, etc., passing through the forests.		By railway engines.			By lightning or by fire balloons.		In order to obtain new grass.		In order to burn out game or to reduce cover.		Maliciously fired.		Total.		Areas unknown.		
(1)	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	(25)	
Northern Circle.																								
Genjam ..	4	67	5	255	3	147	22	8,339	..	..	..	..	..	..	..	..	..	..	25	8,486	10	2,400	44	(a) 11,218
Vizayanam ..	3	63	3	218	2	2	21	3,278	..	..	..	..	..	..	..	..	..	..	23	3,280	..	..	29	6,608
Goavani, Upper.	..	..	27	78,614	..	..	..	1,793	..	..	..	..	..	..	..	..	..	..	11	13,610	11	9,721	49	101,945
Do. Lower.	..	..	1	90	..	..	..	58	..	..	..	..	..	..	..	..	..	..	28	2,063	26	2,772	64	4,925
Kiata ..	1	5	1	8,386	2	270	1	200	..	..	..	..	..	..	..	..	..	..	3	600	25	10,285	33	16,569
Kuncoo, East ..	1	2	1	34,993	1	4,435	1	10,907	..	..	..	..	..	..	..	..	..	..	45	41,338	10	6,287	62	88,816
Do. South ..	..	..	..	..	..	..	..	2,115	..	..	..	..	..	..	..	..	..	..	12	37,316	18	62,581	29	101,447
Do. West ..	2	1,460	2	34,993	7	20,823	6	2,115	1	50	..	..	..	..	..	..	..	..	47	57,316	15	62,581	29	101,447
Total ..	11	1,602	50	1,25,192	29	26,682	80	25,689	3	70	..	..	..	..	..	..	..	..	185	107,714	103	96,661	349	321,063
Central Circle.																								
Bellary ..	1	65	5	2,804	1	5	24	4,195	..	..	..	..	..	..	..	..	..	..	33	5,915	10	2,353	46	(a) 10,987
Shantapur ..	..	..	3	290	..	..	3	1,006	3	420	..	..	..	..	..	..	..	..	23	6,023	11	2,779	37	7,092
Gunthar ..	..	..	..	..	..	..	..	113	..	..	..	..	..	..	..	..	..	..	10	1,118	..	..	10	1,118
North Cuddapah.	7	2,269	10	3,882	2	172	3	136	..	..	..	..	..	..	..	..	..	..	61	16,116	29	8,571	107	(a) 29,727
South do.	..	..	4	1,430	..	..	2	91	..	..	..	..	..	..	..	..	..	..	67	13,052	4	44	66	(a) 24,523
West do.	1	203	..	..	3	440	3	1,360	..	..	..	..	..	..	..	..	..	..	61	16,302	14	1,901	76	(a) 18,493
Nellore ..	2	534	1	125	..	..	3	58	..	..	..	..	..	..	..	..	..	..	7	491	1	18	12	(a) 1,169
Chingleput ..	..	..	1	98	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chittoor ..	2	123	6	894	3	46	3	..	1	25	..	..	..	..	..	..	..	..	42	1,747	9	273	69	2,947
Total ..	14	3,181	30	9,026	9	653	51	7,603	9	1,030	..	..	..	..	..	..	..	..	294	58,763	78	14,070	416	86,634

(a) Includes areas burnt in unprotected forest tracts.

Includes areas in unprotected blocks ..		Includes areas burnt in unprotected forest tracts.	
Bellary ..	8,006	ACS.	..
Gunthar ..	113	..	..
North Cuddapah ..	1,244	..	..
South do.	5,383	..	..
West do.	28	..	..
Nellore ..	906	..	..
North Cuddapah ..	..	..	..
Total ..	16,281	..	..

Area of reserved forests and reserved lands during 1918-19.

District.	Area of reserved forests.					Area of reserved lands.					Total area of reserved forests and lands in square miles.		
	Area on 1st July 1918.		Added during the year.	Excluded during the year.	Area on 30th June 1919.		Added during the year.	Excluded during the year.	Area on 30th June 1919.				
	Acres.	Equivalent in square miles.			Acres.	Equivalent in square miles.			Acres.	Equivalent in square miles.			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Northern Circle.													
Ganjam ..	398,873	623	..	(a) 31	398,842	623	1,397	(d) ... 2	1,400	..	1,460	2	625
Vizagapatam ..	199,371	312	..	.. 9	199,371	312	219,560	343	6	..	1,368	2	314
Golavari, Upper ..	278,471	435	..	(a) 1,500	278,462	435	47,924	75	35,943	10	255,523	388	884
Do. Lower ..	256,470	401	..	(a) 1,500	256,470	396	..	..	7,866	..	65,880	87	435
Kiama ..	169,684	265	..	(a) 128	169,195	264	400	(e) 1	..	(f) 19	381	1	265
Karnool, East ..	528,175	827	..	(a) 17,392	529,754	827	..	..	..	..	..	..	870
Do. South ..	488,664	760	..	..	488,664	760	..	..	..	..	..	..	760
Do. West ..	565,596	885	..	(a) 3,811	549,785	869	..	..	..	..	..	..	889
Total ..	2,981,315	4,658	..	23,241	2,968,074	(p) 4,621	269,831	421	46,376	29	314,577	491	5,112
Central Circle.													
Bellary ..	387,562	(q) 604	..	2,133	384,792	601	42,000	65	..	40,000	2,052	3	604
Anantapur ..	749	749	..	..	479,642	749	..	..	..	..	..	..	749
Guntur ..	516,591	808	..	1,206	515,600	808	..	..	..	..	..	..	808
Cadapah, North ..	381,157	595	..	..	381,157	595	386	1	..	..	396	1	596
Do. South ..	(A) 235,692	462	..	108	235,434	462	133	..	..	..	133	..	492
Do. West ..	(B) 477,920	747	..	..	477,920	747	2,870	4	523	19	3,374	5	762
Nellore ..	459,321	718	1,167	..	459,321	718	1,240	2	6,776	1,167	6,818	11	731
Chingleput ..	332,213	507	..	..	332,213	507	11	..	20	..	87	..	507
Chittoor ..	631,705	831	..	2,130	629,550	827	35	..	(r) ..	..	(s) ..	..	827
Total ..	3,661,457	(r) 5,721	1,221	5,726	3,656,962	5,714	46,745	73	7,324	41,221	19,848	20	5,731

(a) Disafforested.

(b) Leased forests.

(c) Rectification of area.

(d) Transferred to the Salt Department.

(e) Notified under Section 26 of the Forest Act.

(f) Allocated to the Roman Catholic Mission for industrial concern under G.O. No. 3099.

(g) Revised figure.

(g) The total area in column 6 works to 4,622 square miles, the deficit of one square mile is due to the exclusion of fractions below half a square mile in the districts.

(h) Rectification of area below half an acre.

(i) Represents an area below half an acre.

(j) Wrongly included under the reserved forest in previous years.

(k) Disafforested.

(l) Revised figure.

Revenue, dated 18th August 1918.

Area of reserved forests and reserved lands during 1918-19—cont.

District.	Area of reserved forests.							Area of reserved lands.					Total area of reserved forests and lands in square miles.
	Area on 1st July 1918.		Added during the year.	Excluded or transferred to other heads.		Area on 30th June 1919.		Added during the year.	Excluded during the year.		Area on 30th June 1919.		
	Acres.	Equivalent in square miles.		Acres.	(5)	Acres.	Equivalent in square miles.		Acres.	(10)	Acres.	(11)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Southern Circle.													
North Vellore ..	294,977	461	268	(c) 306	294,960	461	1,117	2	..	(c) 288 (d) 28	801	1	462
South do. ..	267,766	418	24	..	267,760	418	24	..	..	24	8	..	419
West do. ..	209,953	328	..	..	209,953	328	24	..	..	..	274	..	528
South Arcot cum Tanjore.	208,168	326	..	(c) 28,200	179,802	281	..	..	..	..	..	..	261
North Arcot ..	512,018	800	..	(a) 670	511,473	799	24,829	38	..	..	24,629	..	928
South do. ..	367,600	568	..	..	367,600	568	16,090	24	..	..	15,090	24	682
Trichinopoly ..	221,477	346	1,027	(b) 25,163	197,941	309	1,691	2	12	(d) 69 (e) 1,622 (f) 2	12	..	309
Madurai ..	422,850	660	2	..	422,852	660	2	..	..	..	1,455	..	680
Tinnevely ..	274,340	429	..	(c) 108	274,172	428	1,050	2	435	..	..	..	430
Total ..	2,768,679	4,325	1,911	51,462	2,716,195	4,253	43,927	68	450	2,083	42,944	60	4,309
Western Circle.													
Mangalore, North ..	231,978	362	..	..	231,978	362	..	..	81	..	81	..	362
Do. South ..	478,860	735	..	..	478,860	735	418	1	..	..	..	..	436
Malabar, North ..	168,076	263	348	..	168,424	263	..	..	..	348	22	..	263
Do. South ..	99,105	144	126	..	92,291	144	12,980	20	..	(b) 126 (c) 126	12,854	20	164
The Nilgiris ..	297,457	465	24	(b) 51	297,410	465	61,121	80	..	(b) 24	61,097	80	549
Kollegal ..	467,709	731	..	..	467,709	731	2,851	4	..	(b) 24	2,851	..	781
Cambay, North ..	583,172	916	..	..	583,172	917	..	1	..	(a) 640	127	1	916
Do. Central ..	231,768	362	..	..	231,768	362	..	..	11	..	11	..	362
Do. South ..	290,880	454	..	(m) 172	290,883	454	..	..	..	..	..	..	454
Total ..	2,644,699	4,133	1,038	223	2,646,414	4,134	68,037	106	92	1,066	67,043	105	4,239
Grand total, Presidency ..	12,056,060	18,837	4,770	83,642	11,976,683	18,713	427,840	668	53,241	44,303	436,712	682	19,384

(a) Disafforested in March 1917 but was omitted to be deducted in previous year.

(b) 193 acres due to disafforestation and the balance is due to adoption of areas of S.I. maps.

(c) Disafforested.

(d) Excluded at settlement.

(e) Transferred to reserved forest.

(f) Difference between area of section 16 notification and section 4 notification.

(g) Revised figures furnished by the District Forest Officer.

(a) Transferred to reserved forest.

(b) Toda settlements.

(c) Excluded at settlement.

(d) Omitted to be shown in the previous year.

(e) Disafforested.

(f) Wrongly included in the previous years.

(g) Corrected in the Chief Conservator's office.

ANNUAL FORM No. 66.

Forest Department, Madras Presidency.

Progress made in forest settlements during the year 1918-19.

Name of forest.	Area in square miles.			Cost during the year.		Entire cost per square mile of areas finally settled.	Government notification of settlement.	
	Finally settled during the year.	In hand at commencement of the year.	Taken in hand during the year.	In forest accounts.	In other accounts.		Number.	Date.
Northern Circle.								
Block I, Part of Galleri extension No. I.	sq. mls.	sq. mls.	sq. mls.	rs.		rs.	no.	
Block II, Galleri extension No. I.	..	..	0.163	..	..	..	..	..
Block III, Galleri extension No. I.	..	..	0.029	..	..	..	..	..
Block IV, Galleri extension No. I.	..	..	1.060	..	..	..	..	..
Block V, Kullada extension No. I.	..	..	0.685	..	..	..	..	..
Ambazara extension No. I (Gobopodora enclosure).	..	..	0.162	..	..	..	..	..
Chendragiri extension (Kut-nikappa bit A/2).	..	..	0.105	..	..	..	..	..
Extension of Pippalaponka reserved forest.	..	..	0.015	..	..	..	..	..
Sitakhandi reserve extension Block I.	..	..	0.009	..	..	..	..	..
Nagur.	..	246.61	..	..	..	..	..	..
Pedamidisilera	..	98.48	..	..	..	..	..	..
Cherla	..	..	56.160	..	..	..	..	..
Coringa extension	..	74.83	..	..	..	..	..	..
Biranapalli	..	..	2.804	..	..	..	..	..
Venulakonda	..	..	5.244	..	..	..	..	..
Palam	..	..	2.083	..	..	..	..	..
Nurupudi	..	..	2.315	..	..	..	..	..
Total	..	417.95	70.596	..	..	..	..	..
Central Circle.								
Daroli tank shore	..	..	2.82	..	..	..	..	..
Gangarapenta extension B block.	..	0.007	..	..	..	..	..	..
Dussarpalli	..	0.17	..	..	..	..	..	..
Kavakumtha extension B	..	0.002	..	..	..	..	..	..
Kalasapad extension	..	0.027	..	..	..	..	..	..
Dasarpalli extension	..	0.31	..	..	..	..	..	..
Lankamalala extension	..	0.09	..	229	..	..	..	..
Lankamalala	..	0.005	..	47	..	..	..	..
Kekitikanama extension B.	..	..	0.0083	..	..	..	..	..
Koder hill extension.	..	..	0.0031	..	..	..	..	..
Chitvel extension B	..	..	0.002	78	..	..	..	..
Chitvel extension A-2	..	..	0.0051	..	..	..	..	..
Pottampalli shrotriya R.F.	..	2.76	..	600	..	..	..	..
Chinnakampalli fields	0.03	..	..	..	..	..	..	..
Ganganapalli Idupulapaya addition.	..	1.65	..	..	..	..	324	27th June 1919.
Fields in Machupalli within Kanamalapalli extension reserve.	..	0.0049	..	..	..	..	..	..
Fields in Madhavaram village in Konarajupalli extension.	..	0.0031	..	..	..	..	..	..
Fields in Chuntarajupalli in Ventimitta extension.	..	0.0121	..	..	..	..	..	..
Fields in Gadikotta R.F.	0.0044	..	..	..	..	..	61	14th Feb. 1919.
Addition to Sarabhu	..	0.02	..	..	..	..	..	..
Fields of Hasanapuram village within Palakonda R.F.	..	..	0.349	..	..	..	..	..
Fields of Vangimalla within Palakonda extension C.	..	..	0.209	..	..	..	..	..
Fields of Hasanapuram village within Palakonda extension C.	..	..	0.065	..	..	..	..	..
Fields of Gopakudipalli village within Idupulapaya reserve.	..	..	0.012	..	..	..	..	..
Fields of Guval cheruva village within Idupulapaya reserve.	..	..	0.007	..	..	..	..	..
Fields of Choolakampalli village within Idupulapaya reserve.	..	..	0.003	..	..	..	..	..

* Excludes 10.42 acres transferred to the Salt department.

† In notification No. 561 in pages 1429 and 1430 of Fort St. George Gazette, dated 29th December 1917.

Progress made in forest settlements during the year 1918-19—cont.

Forest district.	Name of forest.	Area in square miles.			Cost during the year.		Entire cost per square mile of areas finally settled.	Government notification of settlement.	
		Finally settled during the year.	In hand at commencement of the year.	Taken in hand during the year.	In forest accounts.	In other accounts.		Number.	Date.
Cuddapah West—cont.	Central Circle—cont.	sq. mls.	sq. mls.	sq. mls.	Rs.				
	Fields of Chenchuvapenta village within Idupulapaya reserve.	..	..	0.014	..	..	..	..	..
	Fields of Brahmana Erragudi-palli within Idupulapaya reserve.	..	..	0.031	..	..	..	..	..
	Fields of Brahmana Erragudi-palli within Idupulapaya extension.	..	..	0.062	..	..	..	..	..
	Fields of Chintarajupalli within Ventimitta extension.	..	..	0.045	..	..	..	..	..
	Fields of Nandimandalam village within Ganganapalli reserve.	..	..	0.018	..	..	..	..	..
	Addition to Prabhagiritpatnam R.F.	..	0.040	..	480	..	..	..	..
	Addition to Dachur ..	0.085	..	..	..	..	..	..	..
	Do. Yellabiri R.F. ..	..	0.025	..	..	..	..	..	..
	Do. Kottapata ..	0.020	..	..	..	..	..	..	..
	Do. Telugurayapuram.	0.025	..	..	..	..	..	..	..
	Do. Rapur Veligonda B.	0.005	..	..	..	..	..	..	..
	Do. Gavvadi, West ..	0.050	..	..	..	..	..	..	..
	Do. Udyagiri Dargam A.	0.010	..	..	..	..	..	..	..
	Nellore	Do. Tammalapenta, West.	..	0.015	..	..	..	..	..
Do. Tammalapenta, North.		..	0.005	..	..	..	..	..	..
Do. Chinnu Avalor extension.		..	0.015	..	..	..	..	..	..
Do. Veligandla ..		..	0.015	..	..	..	..	..	..
Do. Obagollu A. ..		0.030	..	..	..	..	..	..	..
Do. Nandavaram A. ..		0.015	..	..	..	..	..	..	..
Do. Nandavaram B extension.		0.045	..	..	..	..	..	..	..
Do. Maglicherla, West.		0.020	..	..	..	..	..	..	..
Kavali extension No. III ..		1.450	..	..	..	..	..	..	..
Addition to Dogadathi ..		0.031	..	..	..	..	..	..	..
Chingleput.	Rapur Veligonda A-1 extension.	..	..	10.556	..	..	..	..	..
	Kattankolathur extension II.	..	0.017	..	396	..	..	..	..
Chittoor	Addition to Gandhar R.F. ..	0.007	..	..	..	..	G.O. 189, 14th Aug. 1918. Rev.	..	..
	Addition to Ankalamma-konda R.F.	0.041	..	..	..	..	G.O. Mja. 22nd Jan. 1919. 108 Rev.	..	..
	Addition to Reddikunta ..	0.006	..	..	..	..	G.O. Mja. 18th Feb. 1919. 291.	..	..
	Addition to Whitesides Garden.	..	..	0.007	..	..	..	..	..
	Total ..	1.9044	5.1931	14.310	1,830	..	..	..	..
Vellore, North.	Southern Circle.	..	..	..	..	..	..	..	..
	Piravallam plantation ..	..	0.08	..	..	..	..	..	..
	Virinjiparam ..	0.49	0.49	..	96	..	..	G.O. 744, 24th April 1919. Rev. (Spl.)	..
	Amamudi ..	..	0.25	..	..	..	..	..	..
	Vannivatu ..	..	0.09	..	..	..	..	..	..
	Kilunthal ..	..	0.23	..	..	..	..	..	..
	Addition to Pangaur ..	..	(2)	..	..	..	..	..	..
	Aracampur extension ..	0.04	0.04	..	71	..	..	G.O. 606, 25th Oct. 1918. Rev. (Spl.)	..
	Malayalam ..	..	0.35	..	..	..	..	..	..
	Santavasal ..	..	0.15	..	..	..	..	..	..
Vellore, South.	Uthumalai ..	..	..	0.01	..	..	..	G.O. 682, 11th April 1919. Rev. (Spl.)	..
		..	..	..	..	..	..	..	..
Vellore, West.	Mambakkam extension ..	..	0.35	..	..	..	..	..	..
	Heddiargam 4 blocks ..	..	38.00	..	..	..	..	..	..
	Sholapadi A extension ..	..	0.27	..	..	..	..	..	..
	Varadharipalli extension ..	..	0.07	..	441	..	..	..	..

(a) Omitted to be shown in the last year's return in the next column.

(b) Less than an acre.

Progress made in forest settlements during the year 1918-19—cont.

Forest districts.	Name of forest.	Area in square miles.			Cost during year.		Entire cost per square mile of areas finally settled.	Government notification of settlement.	
		Finally settled during year.	In hand at commencement of year.	Taken in hand during year.	In forest accounts.	In other accounts.		Number.	Date.
Southern Circle—cont.									
Salem, South.	Arana Thiragiri	Sq. Mls.	Sq. Mls.	Sq. Mls.	Rs.				
	Jurugumalai	..	5.92	(c)	..	..	..	..	..
Trichinopoly.	Pallipatti extension	..	11.94	(c)	..	..	..	..	..
	Ariyur shola block	1.70	5.72	(d)	270	..	..	G.O. 467, 1st Oct. 1918.	
	Sholur extension block	0.83	1.70	(d)	..	..	..	G.O. 737, 21st Nov. 1918.	
	Amayapuram	..	0.83	0.01	..	..	..	G.O. 708, 14th Nov. 1918.	
Madura.	Mathalamalai	..	..	0.01	..	..	..	Rev. (Spl.) G.O. 839, 1st May 1919.	
	Addition to Shengalvarayar reserve.	0.01	0.01	..	613	..	..	Rev. (Spl.) G.O. Mis. 721, 18th Nov. 1918.	
Tinnevely.	Karumandiamman shola and Mahendragiri.	..	0.16	..	..	..	..	..	..
	Mulakad block	..	1.48	..	..	..	..	..	..
	Hare Island for Tuticorin harbour.	..	..	0.22	..	..	..	G.O. Mis. 123, 23rd Jan. 1919.	
	Punnadi Island for Tuticorin harbour.	..	..	0.16	..	..	..	Rev. (Spl.) G.O. 792, 29th Nov. 1918.	
	Hope estate	..	..	0.29	..	..	..	Rev. (Spl.)	
Total ..		3.07	63.73	0.70	1,494		..	..	..
Western Circle.									
Mangalore, North.	Kurugodde extension No. I.	..	..	..	..	..	..	184	12th May 1919.
	Doddiamane extension No. I.	..	..	0.052	..	..	..	50	5th Feb. 1919.
Malabar, North.	Mattakallagode extension No. I.	..	..	0.074	..	..	..	..	..
	Kanoth additions Nos. I to III.	..	..	..	..	..	..	5	7th Jan. 1919.
Malabar, South.	Kottanikunnu	..	..	..	..	..	..	69	18th Sep. 1918.
	Rangaswami Peak	..	2.23	..	..	..	..	..	..
The Nilgiris.	Arambi addition No. I	..	..	..	..	..	..	..	..
	Mikherubettu addition	..	..	..	160	..	..	..	..
Coimbatore, North.	Enclosures in South Bargur reserve and its additions.	..	..	..	10,295	..	..	23	21st Jan. 1919.
	Enclosures in North Bargur reserve and its additions.	..	..	..	..	..	..	325	2nd July 1918.
	Enclosures in Gatalatur reserve.	..	..	..	..	..	..	..	..
	Thamburattipottai addition No. I.	..	..	..	..	..	..	123	3rd Dec. 1918.
Coimbatore, Central.	Dhoni extension No. I	..	..	..	..	..	..	9	7th Jan. 1919.
	Nellimalai addition No. I	..	..	..	..	..	..	15	23rd July 1918.
		..	..	..	..	..	..	117	26th Nov. 1918.
Total ..		1.602	4.23	0.141	10,395		..	..	..
Grand total, Presidency ..		6.67	496	86.05	13,719		..	..	..

(b) Difference is due to correct area notified in the Government Order.

(c) Figure given by the District Forest Officer.

* Excluded at settlement.

† Additional compensation awarded for the acquisition of the Mudumalai forests.

ANNUAL FORM No. 67.

Forest Department, Madras Presidency.

Record of demarcation and maintenance of boundaries during 1918-19.

District.	Length of boundaries artificially demarcated during the year.	Length of previously existing boundaries repaired.	Length of previously existing boundaries not repaired.	Total length of artificially marked boundaries at the close of the year.	Length of boundaries still to be demarcated at the close of the year.	Length of natural boundaries not requiring artificial marks.	Total length of boundaries at the close of the year.	Expenditure on demarcation during the year.	
								On new work.	On repairs.
Northern Circle.									
Ganjam	..	(h) 7 (a) 1,368	8	(h) 1,368	..	(i) 60	(j) 1,448	..	(k) 97 (a) 600
Vizagapatam	..	(a) 24 (b) 540	..	584	..	19	583	..	131
Godavari, Upper	3	(b) 403	..	409	3	143	555	209	(e) 127 958
Do. Lower (d)	..	(x) 723	(e) 5 (a) 52	723	..	51	774	..	(e) 28 238
Kistna	..	(a) 375	(*) 122 (*) 2	547	..	49	587	..	(e) 2
Kurnool, East	(g) 14	(a) 579	(a) 124 (a) 124	598	19	48	680	110	20
Do. South	..	(x) 604	28	632	(i) 5 (i) 5	5	637	..	..
Do. West	1	(a) 394	(e) 436 (e) 7	922	..	100	1,022	41	(e) 297 29
Total	18	(u) 597 4,558	585	5,768	22	485	6,266	360	(a) 1,023 2,545
Central Circle.									
Bellary	26	613	872	1,711	6	..	1,717	1,900	51
Anantapur	..	54	1,792	1,816	..	..	1,816	..	487
Guntur	..	..	1,339	1,374	..	..	1,374	..	(b) 243
Chidambaram, North	..	181	(a) 16 320	560	..	13	573	..	210
Do. South	..	(c) 1	311	326	..	40	386	..	20
Do. West	..	(e) 457	932	1,399	..	22	1,421	..	(e) 801
Nellore	..	(e) 639	1,286	(d) 1,274	..	84	2,058	..	809
Chingleput	3	142	..	142	..	..	142	177	208
Chittoor	2	1,446	..	1,448	..	60	1,508	56	731
Total	31	(v) 3,495 (v) 1,019	6,897	11,442	6	219	11,667	1,241	3,555

(a) Cleared by subordinates free of cost.

(b) Cleared by hill tribes for fire protection, the cost being debited to A VIII (f).

(c) Cost of works other than boundaries of forests finally notified.

(d) Revised figures furnished by the District Forest Officer.

(e) Length of boundaries of forests disafforested.

(f) Expunged not being the boundaries of notified forests.

(g) Newly demarcated on account of disafforestation of forests.

(h) Excludes 547 miles belonging to the Parakimedi malikahs.

(i) Do. 14 do. do.

(j) Do. 571 do. do.

(k) Do. Rs. 10 for widening the lines above ghats in Chandragiri range.

(a) Deduction made due to disafforestation.

(b) Represents cost of collection of stones to demarcate ten miles of Pothumaraka reserve, but actual demarcation has not yet been done.

(c) Cleared by subordinates free of cost.

(d) The difference between columns 3 and 4 and column 5 of the previous year's return was due to the incorporation of enclosures with the main reserves whereby their boundaries have been abandoned.

(e) Rupees 756 relating to compensation awarded for acquisition of certain fields has been wrongly included under A-VII: (a) by the Accountant-General, instead of A-VIII (b).

ANNUAL REPORT OF THE

Record of demarcation and maintenance of boundaries during 1918-19—cont.

District.	Length of boundaries artificially demarcated during the year.	Length of previously existing boundaries required.	Length of previously existing boundaries not required.	Total length of artificially marked boundaries at the close of the year.	Length of boundaries still to be demarcated at the close of year.	Length of natural boundaries not requiring artificial marks.	Total length of boundaries at the close of the year.	Expenditure on demarcation during the year.	
								On new works.	On repairs.
Southern Circle.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	RS.	RS.
Vellore, North ..	..	1,079	..	1,074	..	11	1,085	..	301
Do. South ..	..	708	..	708	..	15	723	..	681
Do. West ..	..	442	61	503	..	13	516	(b) 119	240
South Arcot ..	..	890	..	890	..	..	890	..	8
Salem, North ..	23	1,025	453	1,371	..	40	1,411	269	6
Do. South ..	..	(d) 882	65	1,031	..	5	1,036	..	339
Trichinopoly ..	1	933	588	1,544	64	..	1,608	..	..
Madura ..	23	..	501	501	15	178	1,737	2,183	34
Tinnevely ..	..	..	(a)-3	..	..	14	515	..	..
Total ..	47	8,849	1,594	8,590	79	276	8,945	(4) 2,571	(4), (m) 958
Western Circle.									
Mangalore, North ..	..	20	1,213	1,233	..	103	1,336	..	197
Do. South ..	..	..	1,130	1,130	46	101	1,277	..	681
Malabar, North ..	11	(e) 162	1,008	1,196	12	36	1,244	(i) 1,091	..
Do. South ..	..	(f) 8	60	131	20	55	206	(i) 220	759
The Nilgiris ..	11	(g) 7	1,523	1,534	(g) 9	299	1,893	297	583
Kollegal ..	..	(f) 43	109	170	222	87	479	..	51
Coimbatore, North ..	..	(f) 206	290	542	(j) 42	(j) 89	673	..	1,274
Do. Central ..	..	(f) 118	432	571	27	50	648	..	750
Do. South ..	..	(f) 116	88	228	..	72	300	..	(h) 37
Total ..	22	(e) 107	5,913	6,785	379	892	8,056	1,617	4,904
Grand total, Presidency.	118	(f) 7,712	15,089	32,576	485	1,878	34,934	5,789	12,900

Notes for Southern Circle—The total cost comes to ..

Deduct amount of mines entry in Tinnevely

Amount as per form 80

(a) Disafforested area.

(b) Amount spent in cutting lines and putting up cairns in connexion with delimitation work under Land Revenue administration.

(c) The decrease from the last year's figure is due to disafforestation of certain reserves.

(d) The difference between columns 3 and 4 and column 5 of last year is due to correct figure furnished by the District Forest Officer.

(e) Cleared for fire-protection, the cost being debited to A-VIII (f).

(f) Cleared by subordinates free of cost.

(g) Preliminary demarcation.

(h) Cost of construction of cairns, preparing stores, demarcation of temples, etc.

(i) Expenditure on incomplete works of the previous year.

(j) Fourteen miles transferred from column 7 to 6 owing to the revised notification of boundaries of North Bargar reserved forest.

(k) Portion of Coimbatore-Travancore boundary-cost debited to XXV. Political.

(l) The difference between this and the Accountant-General's audited figures is due to a mines entry in Tinnevely (Rs. 159).

(m) The figures in this column when totalled come to Rs. 1,639.

FOREST DEPARTMENT

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ANNUAL FORM No. 69.

Forest Department, Madras Presidency.

Progress made in working-plans during 1918-19.

District.	Areas for which working-plans have been completed and approved by the Board.		Areas for which working-plans are being compiled or have been compiled but not sanctioned.		Areas for which working-plans have still to be taken in hand.	Areas for which working-plans are not at present required.	Total forest area as per Form No. 65.
	At commencement of the year.	During the year.	At commencement of the year.	Taken in hand during the year.			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Northern Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Ganjam ..	623	..	..	..	..	..	623
Vizagapatam ..	145	(a)-14	..	42	56	83	312
Godavari, Upper ..	165	..	..	..	270	..	435
Do. Lower ..	254	..	70	..	109	..	398
Kistna ..	(b)-1	38	(c) -70	..	(d) -2	..	264
Kurnool, East ..	149	92	..	..	..	24	264
Do. South ..	(d)-1	..	193	..	657	..	970
Do. West ..	679	..	81	..	(d)-16	..	780
Total ..	2,622	116	263	42	1,074	504	4,621
Reserved lands.							
Ganjam ..	..	..	..	..	2	..	2
Vizagapatam ..	..	..	..	..	(e) 2	..	2
Godavari, Upper ..	..	..	..	..	..	399	399
Do. Lower ..	..	..	..	..	87	..	87
Kistna ..	..	..	..	..	..	1	1
Total ..	..	..	..	..	91	400	491
Grand total ..	2,622	116	263	42	1,165	904	5,112
Central Circle.							
Bellary ..	64	..	93	..	292	155	604
Anantapur ..	425	..	..	..	324	..	749
Guntur ..	..	..	243	(a) ..	563	..	806
Cuddapah, North ..	50	..	..	(b) 17	529	..	596
Do. South ..	107	..	..	..	..	335	462
Do. West ..	35	..	1	27	635	4	752
Nellore ..	(d) 12	..	(e) 8	186	396	129	781
Chingleput ..	185	(f) ..	..	..	..	22	(f) 207
Chittoor ..	33	..	157	7	630	..	827
Total ..	911	..	502	237	3,419	665	5,734
Southern Circle.							
North Vellore ..	(a) 463	..	2	..	..	51	461
South do. ..	(b) -53	..	..	..	8	..	419
West do. ..	410	..	..	..	..	..	328
South Arcot ..	(c) 328	..	..	52	3	111	281
North Salem ..	(d) -118	47	..	..	..	..	799
South do. ..	263	..	366	..	171	..	558
Trichinopoly ..	(e) -1	..	63	..	..	43	309
Madura ..	495	..	18	..	297	12	660
Tinnevely ..	200	..	..	..	16	175	428
Total ..	2,761	48	449	52	541	392	4,243

(a) Cancelled working plans; transferred to column (5).
(b) Exclusion of fractions.
(c) Transferred to column (6).
(d) Disafforested.
(e) Leased forests.

(a) Due to the omission of 247 square miles entered in this column in 1917-18 on account of the proposal to disafforest certain useless reserves as per B.P. Forest Mis. No. 256, dated 3rd May 1919.

(b) Due to revised figures furnished by the District Forest Officer.

(c) The figure in column (6) of last year's return is brought to column (7) in the current year by the District Forest Officer as working plan is stated to be not required at present.

(d) Due to the cessation of the period of working plans.

(e) Due to cancellation of working scheme for 13-90 square miles.

(f) Revised figures furnished by the District Forest Officer.

(g) Wrongly shown in columns (2) and (7) of the previous year's return.

(h) Represents the area of forests the working plan in respect of which was cancelled in B.P. Forest Mis. No. 120, dated 27th March 1918.

(i) Correct figure furnished by the District Forest Officers.

(j) Working plan for the old Kallakurechi range was ordered to be kept in abeyance in favour of the five years' scheme sanctioned in B.P. Forest Mis. No. 110, dated 12th February 1919.

(k) Due to disafforestation of Gandakhal reserve.

Progress made in working-plans during 1918-19—cont.

District.	Areas for which working-plans have been completed and approved by the Board.		Areas for which working-plans are being compiled or have been compiled but not sanctioned.		Areas for which working-plans have still to be taken in hand.	Areas for which working-plans are not at present required.	Total forest area as in form No. 65.	Entire square mile of working plans completed.
	At commencement of the year.	During the year.	At commencement of the year.	Taken in hand during the year.				
Reserved forests.								
Western Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	RS.
Mangalore, North.	358	..	..	..	4	..	362	..
Do. South.	436	..	..	..	..	..	436	..
Malabar, North ..	178	..	..	..	85	..	263	..
Do. South ..	7	..	..	96	..	37	140	..
The Nilgiris ..	107	..	..	..	..	358	465	..
Kollegal ..	53	..	22	..	160	490	721	..
Coimbatore, North.	816	..	..	81	556	..	917	..
Coimbatore, Central.	(a) + 14	..	24	..	74	99	362	..
Coimbatore, South.	(b) - 74	..	..	..	384	..	427	..
Total ..	1,727	..	46	127	1,213	980	4,103	..
Reserved lands.								
Mangalore, North..	..	..	..	..	..	..	..	..
Malabar, North ..	..	..	..	..	..	..	..	..
The Nilgiris ..	..	..	..	..	1	† 7	8	..
Coimbatore, North.	..	..	..	..	..	..	1	..
Do. Central.	..	..	..	..	..	..	..	..
Total ..	..	..	..	..	1	7	9	..
Leased forests.								
Malabar, South ..	24	..	..	..	..	..	24	..
The Nilgiris ..	76	..	..	..	..	..	76	..
Coimbatore, South.	..	27	..	..	..	..	27	..
Total ..	100	27	..	..	..	..	127	..
Grand total, W.C.	1,827	27	46	127	1,214	987	4,230	..
Grand total, Presidency.	8,121	191	1,250	453	6,248	2,556	19,328	..

* Less than one square mile. † Includes 4 square miles of Todappatta lands.
 (a) Omitted to be shown in the returns of the previous year.
 (b) Area of the working plans cancelled.
 (c) Revised figure furnished by the District Forest Officer.
 (d) Excludes 66 square miles of reserved lands in the southern.

ANNUAL FORM No. 70.

Forest Department, Madras Presidency.

Communications and Buildings during 1918-19.

District.	Roads (including bridle-paths and culverts)				Buildings.		Other works.		
	New works.		Repairs.		Cost of new works.	Cost of repairs.	Cost of new works.	Cost of repairs.	
	Length.	Cost.	Length.	Cost.					
<i>Northern Circle.</i>									
Direction	M. P. CH.	RS.	M. P. CH.	RS.	RS.	RS.	RS.	RS.	
Ganjam	4 0 0	3,037	36 5 0	{ (a) 416 403 }	1,151	{ (A) 3,891 (a) 1,762 }	157	35	
Vizagapatam ..	2 7 0	200	10 0 0	392	{ (b) 11 }	{ (a) 821 1,768 }	..	1	
Gadavari, Upper ..	0 2 0	{ (a) 93 258 }	57 4 0	310	713	{ (a) 690 2,253 }	..	56	
Do. Lower ..	..	..	34 0 0	1,657	686	{ (a) 2,068 251 }	..	..	
Kistna	..	..	12 4 0	381	..	{ (a) 140 1,425 }	..	223	
Kurnool, East ..	16 3 5	4,650	70 3 0	1,208	1,495	{ (a) 1,145 189 }	883	349	
Do. South ..	..	..	38 0 0	1,434	1,418	{ (a) 340 932 }	113	225	
Do. West ..	..	{ (a) 181 }	25 2 0	1,430	..	{ (a) 780 }	10	136	
Total ..	23 4 5	8,442	284 2 0	7,631	5,875	18,832	1,166	1,025	
<i>Central Circle.</i>									
Bellary	..	..	2 4 5	195	245	918	..	1	
Anantapur ..	..	..	3 0 0	365	2,056	2,369	..	..	
Guntur	..	..	9 4 6	226	1,387	1,207	..	4	
Cuddapah, North ..	1 6 0	145	72 5 5	1,902	6,397	1,364	31	70	
Do. South ..	16 4 0	2,730	7 0 0	316	2,921	1,342	..	41	
Do. West ..	8 1 8	1,713	8 7 5	33	413	1,181	176	122	
Nellore	2 4 0	24	15 6 0	769	987	2,413	249	19	
Chingleput ..	0 5 8	207	37 7 0	1,359	2,867	2,664	..	162	
Chittoor ..	7 4 6	2,535	..	..	..	2,621	253	278	
Total ..	37 1 6	7,404	157 2 5	5,166	17,273	16,170	709	697	
<i>Southern Circle.</i>									
Vellore, North ..	{ (a) 11 2 0 }	2,014	17 6 0	700	1,649	{ (b) 684 (c) 598 }	5	..	
Do. South ..	..	..	5 2 0	190	6,366	{ (b) 327 (b) 201 }	555	11	
Do. West ..	..	{ (g) 224 }	18 6 0	1,103	6,577	{ (b) 2,085 (b) 214 }	1,113	224	
South Arcot ..	{ (e) 7 4 0 }	31	19 0 0	67	2,963	{ (b) 116 (b) 466 }	..	29	
Salem, North ..	..	..	72 0 0	1,348	270	{ (b) 1,584 (b) 233 }	..	53	
Do. South ..	5 4 0	361	29 0 0	341	4,133	{ (b) 847 (b) 843 }	93	100	
Trichinopoly ..	2 0 0	354	114 0 0	{ (d) 1,717 (d) 1,462 }	1,206	{ (b) 359 (b) 363 }	128	..	
Madura	8 3 0	5,104	199 5 0	{ 8,077 (b) 464 }	11,434	{ 2,163 (b) 1,172 }	627	32	
Tinnevely ..	5 0 0	2,896	48 0 0	933	1,027	{ 1,118 (b) 530 }	..	6	
Forest Engineer ..	25 0 0	{ (f) 27,036 }	13 6 0	10,713	..	..	..	..	
Total ..	64 5 0	48,650	537 1 0	24,661	36,235	13,403	2,591	455	
<i>Western Circle.</i>									
Mangalore, North ..	13 5 0	1,303	22 2 0	265	2,457	{ 400 191 18 }	482	29	
Do. South ..	4 5 0	1,476	50 0 0	477	3,923	{ 404 282 }	157	140	
Malabar, North ..	8 0 0	465	104 0 0	2,174	2,007	{ 267 20 }	..	3	
Do. South ..	8 3 0	938	52 6 0	2,403	20	{ 1,112 5,025 }	1,050	136	
The Nilgiris ..	12 3 0	2,213	64 4 0	{ 5,025 25 }	59	{ 480 782 }	175	212	
Kollegal ..	2 0 0	716	60 0 0	2,156	1,003	{ 485 1,070 }	166	78	
Coimbatore, North ..	6 0 0	1,654	103 0 0	6,788	2,744	{ 391 304 2,014 }	409	97	
Do. Central ..	5 0 0	1,070	22 0 0	5,015	2,622	{ 197 1,758 }	..	141	
Do. South ..	1 2 0	4,134	23 0 0	{ 2,833 365 }	81	{ 396 254 }	472	76	
Direction ..	..	..	..	..	..	..	..	..	
Forest Engineer ..	..	{ (a) 3,805 227 }	..	..	{ (a) 1,924 }	..	..	..	
Total ..	61 2 0	17,282	490 4 0	27,498	16,063	10,543	2,911	912	
Grand total, Presidency ..	186 5 1	81,778	1,469 1 5	64,953	74,886	68,951	7,377	3,089	

(a) Cost of Establishment. (b) Cost of acquiring sites for buildings. (c) Cost of alignment of roads.
 (d) Excludes Rs. 94 spent on repairs in the aridhuni Malahs.
 (e) Includes 6 miles where alignment alone has been done. (f) Cost of establishment.
 (g) Added or subtracted to tally with audited figures.
 (h) Land dues in the Pachurani and Kollimallu hill villages contributed by the Taluk and District Boards of the Trichinopoly and Salem Districts for the maintenance of bridle-paths on those hills.
 (i) Length of an inspection path in class II reserves.
 (j) Includes Rs. 511 spent on investigation of the proposed Koma'tiyur-Patrakad road for a distance of 10½ miles.
 (k) Cost of opening ceremony of the Gihman road.
 (l) Cash recovery of service payments. † Pay of temporary establishment.
 ‡ Variations between the District Forest Officer's and Accountant-General's audited figures.
 (m) Expenditure on the construction of quarters for overseer and suboverseer at Sethumadai, South Coimbatore district.

ANNUAL FORM NO. 71.

Forest Department, Madras Presidency.

Register of breaches of Forest Rules during 1918-19.

District.	Cases pending from 1916-17.	New cases of the year.						Disposed of during the year.						Cases pending at close of year.
		Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.	Total cases.	Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Northern Circle.														
Ganjam ..	{ A ..	{ (a) 32	109	11	51	172	236	116	381	17	66	132	447	104
	{ B ..	{ (b) + 2	293	21	7	326	424	256	878	52	181	308	1,069	116
	{ C ..	{ (c) 68	21	..	..	51	..	..	..	..	..	..	..	..
Total ..		{ (d) 162	{ (e) 35	{ (f) 423	{ (g) 32	{ (h) 543	{ (i) 260	{ (j) 371	{ (k) 1,259	{ (l) 69	{ (m) 247	{ (n) 440	{ (o) 1,506	{ (p) 220
Visagapatnam.	{ A ..	25	7	138	5	14	164	189	114	381	10	24	124	85
	{ B ..	79	2	259	39	67	377	456	320	644	44	156	374	800
	{ C ..	..	14	5	..	..	19	..	..	..	..	..	..	..
Total ..		104	23	412	44	81	560	645	444	1,025	54	180	498	1,265
Godavari, Upper.	{ A ..	{ (a) 33	1	25	4	7	38	77	43	78	18	55	64	133
	{ B ..	{ (a) 22	..	79	12	21	112	131	82	155	16	37	107	190
	{ C ..	..	22	..	..	..	22	..	..	..	..	..	..	..
Total ..		61	23	105	16	28	172	211	134	233	37	92	171	323
Godavari, Lower.	{ A ..	{ (a) 15	..	39	5	14	58	73	21	81	7	13	38	94
	{ B ..	{ (a) 30	..	271	23	41	335	365	226	491	22	53	288	544
	{ C ..	..	54	3	..	..	57	..	..	..	..	..	..	..
Total ..		45	54	313	28	55	450	438	297	572	29	65	326	639
Kistna ..	{ A ..	{ (a) 35	..	51	11	7	40	34	71	203	3	6	74	209
	{ B ..	{ (a) 40	..	326	215	29	570	610	320	1,060	118	350	508	1,350
	{ C ..	..	7	3	..	..	10	..	..	..	..	..	..	..
Total ..		75	7	380	226	36	629	694	461	1,263	121	355	582	1,559
Karnool, East.	{ A ..	{ (a) 8	1	19	20	2	42	50	41	117	1	3	42	120
	{ B ..	{ (a) 18	..	142	67	6	215	233	142	568	65	122	197	690
	{ C ..	..	27	7	..	..	34	..	..	..	..	..	..	..
Total ..		26	28	168	87	8	291	283	183	685	66	125	239	810
Karnool, South.	{ A ..	23	2	70	16	1	80	109	89	268	6	40	95	308
	{ B ..	27	..	117	72	2	191	218	167	422	16	37	183	459
	{ C ..	..	51	12	..	..	63	..	..	..	..	..	..	..
Total ..		47	63	199	88	3	343	327	256	690	22	77	278	767
Karnool, West.	{ A ..	15	..	110	30	5	145	160	133	491	10	27	143	318
	{ B ..	66	..	353	103	25	495	552	397	1,126	29	150	426	1,270
	{ C ..	..	67	54	..	2	123	..	..	..	..	..	..	..
Total ..		81	67	522	133	32	754	712	530	1,617	39	177	569	1,794
Total, Northern Circle.	{ A ..	221	11	542	162	102	757	978	639	2,000	73	234	712	2,234
	{ B ..	380	7	1,855	552	198	2,612	2,932	2,037	5,282	354	1,086	2,391	6,388
	{ C ..	..	272	105	..	2	379	..	..	..	..	..	..	..
Grand Total, Northern Circle.		601	290	2,502	654	302	3,748	3,970	2,676	7,282	427	1,320	3,103	8,602

- A = Cases taken to Court. B = Cases compounded. C = Cases undetected.
 (a) The variations between the closing balance of last year and these figures are due to transfers from B to A.
 (b) Cases relating to unreserved lands omitted from the previous year's return.
 (c) Excludes 38 cases belonging to the Parikimedi Malihah.
 (d) Do. 4 do. do. do.
 (e) Do. 176 do. do. do.
 (f) Do. 11 do. do. do.
 (g) Do. 71 do. do. do.
 (h) Do. 232 do. do. do.
 (i) Do. 350 do. do. do.
 (j) Do. 173 compounded cases and 44 convicted cases.
 (k) Do. 399 persons involved in the compounded cases and 122 persons involved in the cases convicted.
 (l) Do. 62 cases withdrawn by the Special Officer and 6 cases acquitted by the Court.
 (m) Do. 121 persons involved in the withdrawn cases.
 (n) Do. 74 do. acquitted cases.
 (o) Do. 718 do. involved in the cases belonging to Parikimedi Malihah.
 (p) Do. 60 pending cases belonging to Parikimedi Malihah.

Register of breaches of Forest Rules during 1918-19—cont.

District.	Cases pending from 1917-18.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.	
		Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.			
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.		
Central Circle.															
Chitambar ..	A ..	13	..	213	134	6	352	365	174	755	37	46	211	796	154
	B ..	106	1	275	277	43	596	704	456	1,268	74	375	530	1,644	174
	C ..	..	..	7	..	..	7	..	..	..	..	..	..	..	..
Total ..	121	1	494	411	49	955	1,069	630	2,024	111	416	741	2,440	328	
Chitambar, North ..	A ..	152	..	194	96	18	309	461	289	853	38	113	319	966	143
	B ..	29	..	285	232	3	519	577	440	996	62	197	502	1,195	75
	C ..	..	37	37	..	..	74	..	..	..	..	..	..	..	..
Total ..	182	37	514	359	21	930	1,038	729	1,351	92	310	821	2,161	217	
Chitambar, South ..	A ..	116	..	440	326	5	771	887	642	2,039	9	59	651	2,148	236
	B ..	263	..	811	664	17	1,492	1,755	1,309	3,494	74	205	1,388	3,706	374
	C ..	..	..	7	..	..	7	..	..	..	..	..	..	..	..
Total ..	379	..	1,258	990	22	2,270	2,642	1,951	5,583	83	265	2,034	5,848	609	
Chitambar, North ..	A ..	(a) 7	2	65	14	2	83	90	72	279	10	46	82	325	..
	B ..	(a) 51	..	233	67	26	325	377	265	676	19	46	264	721	92
	C ..	..	..	42	..	..	42	..	..	..	..	..	..	..	..
Total ..	63	2	340	81	28	461	467	387	954	29	92	366	1,046	101	
Chitambar, South ..	A ..	(a) 9	1	36	11	1	49	58	50	119	..	..	50	119	..
	B ..	(a) 17	..	101	56	1	156	175	132	324	20	37	152	361	20
	C ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	26	1	137	67	2	207	233	182	443	20	37	202	480	30	
Chitambar, West ..	A ..	109	1	97	52	21	171	280	127	357	28	87	155	444	120
	B ..	112	4	243	139	52	431	513	393	897	62	267	476	1,164	120
	C ..	..	..	9	2	7	18	..	..	..	..	..	..	..	6
Total ..	221	5	349	188	80	620	823	520	1,254	111	354	631	1,606	199	
Chitambar, East ..	A ..	59	..	177	392	19	647	641	232	1,042	15	56	348	1,118	236
	B ..	223	..	402	217	8	727	950	493	1,954	36	85	529	1,532	427
	C ..	..	12	23	18	1	57	..	..	..	..	..	..	..	..
Total ..	282	12	605	727	28	1,395	1,591	832	2,116	45	154	877	2,270	714	
Chitambar, South ..	A ..	75	..	58	49	..	107	183	115	361	16	56	161	417	22
	B ..	35	..	140	176	..	316	351	206	732	43	60	309	823	43
	C ..	..	1	2	..	..	3	..	..	..	..	..	..	..	..
Total ..	111	1	200	225	..	426	4	411	1,123	59	116	470	1,239	64	
Chitambar, North ..	A ..	33	..	173	142	20	335	368	300	606	27	105	327	711	41
	B ..	45	..	639	372	37	1,042	1,087	801	1,558	71	171	982	1,729	124
	C ..	..	47	5	8	..	60	..	..	..	..	..	..	..	..
Total ..	78	47	811	522	57	1,437	1,465	1,101	2,164	98	276	1,289	2,440	166	
Total, Central Circle.	A ..	575	4	1,452	1,215	86	2,738	3,333	2,122	6,472	172	572	2,304	7,044	1,020
	B ..	853	5	3,121	2,323	187	5,636	6,519	4,351	11,040	478	1,443	5,127	12,468	1,390
	C ..	..	97	135	23	8	268	..	..	..	..	..	..	..	..
Total, Central Circle.	1,428	106	4,708	3,567	281	8,652	9,852	6,783	17,512	648	2,020	7,431	19,532	2,420	

- A = Cases taken into Court. B = Cases compounded by the District Forest Officer. C = Cases undetected.
 (a) Variations between the closing balance of 1917-18 and the opening balance of 1918-19 are due to transfer of cases between and B.
 (b) Difference between the closing balance of 1917-18 and opening balance of 1918-19 is due to the exclusion of 10 cases transferred to St. Chitambar district.

Area of forest tracts protected from fire during 1918-19.

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
Northern Circle.						
Ganjām ..	Special protection ..	ACS. 83,710	ACS. 84,895	ACS. 1,404	ACS. 83,491	RS. 2,920
	General do. ..	215,442	181,899	4,207	177,192	1,683
	Total, Ganjām ..	299,152	266,794	5,611	260,683	6,603
Vizagapatam ..	Special protection ..	54,408	55,777	2,469	53,308	1,084
	General do. ..	120,120	126,867	3,639	123,828	142
	Total, Vizagapatam ..	174,528	182,644	5,508	177,136	1,226
Godavari, Upper ..	Special protection ..	492,590	531,842	101,945	429,897	7,243
	General do. ..	..	..	..	..	..
	Total, Godavari, Upper ..	492,590	531,842	101,945	429,897	7,243
Godavari, Lower ..	Special protection ..	151,440	152,636	4,453	148,183	4,636
	General do. ..	82,222	82,329	472	82,457	860
	Total, Godavari, Lower ..	234,179	235,565	4,925	230,640	5,496
Kistna ..	Special protection ..	14,159	13,839	1,165	12,644	748
	General do. ..	35,719	37,491	2,476	35,015	427
	Total, Kistna ..	50,878	51,300	3,841	47,659	1,175
Kurnool, East ..	Special protection ..	175,665	201,516	12,110	189,406	8,065
	General do. ..	419,582	414,239	3,459	410,780	458
	Total, Kurnool, East ..	595,227	615,755	15,569	600,186	8,523
Kurnool, South ..	Special protection ..	255,891	354,650	81,204	273,456	10,290
	General do. ..	* 126,710	132,094	5,612	125,392	..
	Total, Kurnool, South ..	382,601	486,744	86,816	398,848	10,290
Kurnool, West ..	Special protection ..	71,991	123,540	51,762	71,786	7,329
	General do. ..	331,748	426,246	49,695	376,550	..
	Total, Kurnool, West ..	403,739	549,786	101,447	448,336	7,329
Total ..	Special protection ..	1,299,764	1,518,675	256,502	1,262,173	43,315
	General do. ..	1,334,040	1,401,174	68,360	1,332,214	3,670
	Grand total ..	2,633,804	2,919,849	325,162	2,594,387	46,985
Central Circle.						
Bellary ..	Special protection ..	39,574	15,862	300	13,582	1,334
	General do. ..	7,258	25,664	2,662	27,002	..
	Total ..	46,832	41,526	2,962	40,584	1,334
Anantapur ..	Special protection ..	376,117	388,938	6,554	362,279	3,731
	General do. ..	72,596	110,609	438	110,171	..
	Total ..	448,713	499,547	7,092	472,450	3,731
Guntur ..	Special protection ..	..	..	..	..	..
	General do. ..	..	..	..	..	..
	Total ..	..	..	..	..	..
Cuddapah, North ..	Special protection ..	221,342	274,932	23,385	248,547	6,853
	General do. ..	43,393	55,086	2,437	52,649	..
	Total ..	264,735	330,018	25,822	301,196	6,853
Cuddapah, South ..	Special protection ..	176,360	216,072	9,684	208,488	3,143
	General do. ..	40,129	45,231	3,697	41,534	..
	Total ..	216,429	261,303	13,381	250,022	3,143
Cuddapah, West ..	Special protection ..	202,350	238,574	5,325	233,449	1,243
	General do. ..	70,413	115,008	7,190	107,816	961
	Total ..	272,763	353,580	12,415	341,265	2,204

* Revised figures furnished by the District Forest Officer.

(a) Excludes 127,665 acres belonging to Parakimedi Malahs.

(b) Do. 128,053 acres do. do.

(c) Do. 229 acres do. do.

(d) Do. 127,833 acres do. do.

(e) Do. 594 rupees being cost of fire protection in Parakimedi Malahs.

(f) Erroneously debited to A.V.I.II (6) in the audited figures.

(g) Includes the area notified under the 'India' Forest Act.

(h) Cash recovery of service payments.

Area of forest tracts protected from fire during 1918-19—cont.

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	<i>Central Circle—cont.</i>	ACS.	ACS.	ACS.	ACS.	RS.
Nellore ..	Special protection ..	131,556	149,183	1,142	148,041	1,428
	General do. ..	..	..	..	..	..
	Total ..	131,556	149,183	1,142	148,041	1,428
Chingleput..	Special protection ..	25,510	25,523	90	25,433	1,637
	General do. ..	106,695	106,695	..	106,695	..
	Total ..	132,205	132,218	90	132,128	1,637
Chittoor ..	Special protection ..	151,748	161,963	2,512	159,451	1,323
	General do. ..	363,971	367,587	435	367,152	..
	Total ..	515,719	529,550	2,947	526,603	1,323
Total ..	Special protection ..	1,324,497	1,456,142	51,892	1,404,250	23,892
	General do. ..	794,455	828,878	16,859	812,019	961
	Total ..	2,028,952	2,285,020	68,751	2,216,269	24,853
	<i>Southern Circle.</i>					
Vellore, North.	Special protection ..	43,913	39,558	290	39,268	850
	General do. ..	283,943	255,317	2,808	252,509	..
	Total ..	282,876	294,875	3,098	291,777	850
Vellore, South.	Special protection ..	100,077	100,993	552	100,443	861
	General do. ..	149,256	151,227	1,994	149,233	..
	Total ..	249,333	252,225	2,546	249,676	861
Vellore, West.	Special protection ..	98,959	101,553	8,191	99,844	768
	General do. ..	101,591	108,418	646	107,772	..
	Total ..	200,550	209,971	8,837	207,616	768
South Arcot.	Special protection ..	13,549	13,541	5	13,536	207
	General do. ..	194,553	165,360	33	165,327	..
	Total ..	208,102	178,901	38	178,863	207
Salem, North.	Special protection ..	91,762	86,434	2,267	84,167	2,894
	General do. ..	359,101	449,673	314	449,359	
	Total ..	450,863	536,107	2,581	533,526	2,894
Salem, South.	Special protection ..	229,412	274,970	1,224	273,746	2,408
	General do. ..	106,622	75,202	191	78,011	..
	Total ..	336,034	350,172	1,415	351,757	2,408
Trichinopoly.	Special protection ..	99,821	97,693	429	96,654	583
	General do. ..	121,924	101,049	15	101,034	..
	Total ..	221,745	198,742	444	197,688	583
Madura ..	Special protection ..	167,883	216,778	5,749	211,038	5,245
	General do. ..	211,313	205,575	834	204,741	..
	Total ..	409,196	422,353	6,574	415,779	5,245
Tinnevely.	Special protection ..	35,374	35,688	74	35,614	4,527
	General do. ..	201,895	203,713	12,899	193,213	..
	Total ..	237,269	239,400	12,973	228,827	4,527
Total, Southern Circle, Special protection.		890,231	966,685	18,772	947,813	19,323
Total, Southern Circle, General protection.		1,636,730	1,722,533	19,731	1,702,709	..
Grand total, Southern Circle (Special and General protection).		2,526,961	2,689,218	38,503	2,650,522	19,323

Register of breaches of Forest Rules during 1918-19—cont.

District.	Cases pending from 1917-18.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.	
		Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.			
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.		
Southern Circle.															
North Vellore.	A ..	102	..	91	72	..	165	205	197	495	(a) 5	22	202	517	63
	B ..	154	..	612	303	10	925	1,079	700	1,250	(a) 43	87	743	1,337	326
	C ..	..	42	..	32	..	74	..	..	..	..	..	..	..	..
Total ..	256	42	703	407	10	1,132	1,344	897	1,745	(a) 48	109	945	1,854	389	
South Vellore.	A ..	95	2	27	24	7	130	225	200	553	9	13	209	563	16
	B ..	136	..	346	184	9	543	679	452	989	(a) 42	77	494	1,056	135
	C ..	..	50	..	..	..	50	..	..	..	..	..	..	..	..
Total ..	231	52	443	212	16	723	904	652	1,539	(a) 42	77	703	1,529	201	
West Vellore.	A ..	70	..	139	15	8	162	232	164	314	3	4	115	336	120
	B ..	29	..	222	71	5	298	327	280	623	(a) 5	18	293	649	35
	C ..	..	44	5	..	2	51	..	..	..	(a) 12	26	..	..	..
Total ..	99	44	366	86	15	511	559	444	937	(a) 17	44	404	985	155	
South Arcot.	A ..	215	1	427	59	8	605	720	533	1,264	29	115	577	1,433	143
	B ..	420	..	1,142	68	9	1,219	1,709	1,242	1,239	(a) 15	54	1,273	3,004	439
	C ..	..	4	29	..	..	33	..	..	..	(a) 31	65	..	..	..
Total ..	705	(a) 5	1,606	127	17	1,757	2,429	1,775	2,203	(a) 46	119	1,850	3,437	579	
North Salem.	A ..	24	1	355	44	14	414	438	384	1,533	9	33	383	1,570	45
	B ..	254	2	862	162	42	1,058	1,312	857	1,507	(a) 110	178	967	1,685	545
	C ..	..	28	..	..	..	28	..	..	..	..	..	..	..	..
Total ..	278	31	1,207	206	56	1,500	1,750	1,241	3,045	(a) 110	178	1,350	3,261	590	
South Salem.	A ..	109	..	176	62	21	268	368	229	757	22	29	270	820	98
	B ..	197	..	566	139	51	743	953	569	854	(a) 19	34	684	1,053	369
	C ..	..	55	8	2	1	66	..	..	..	(a) 76	169	..	..	..
Total ..	306	55	750	203	73	1,080	1,321	798	1,641	(a) 22	59	854	1,873	467	
Trichinopoly.	A ..	279	..	364	122	1	487	766	557	1,480	18	120	559	1,525	177
	B ..	138	..	899	178	32	1,099	1,237	871	1,494	(a) 13	26	569	1,525	266
	C ..	8	19	18	10	1	48	..	..	..	..	..	..	..	..
Total ..	425	19	1,271	310	34	1,644	2,003	1,428	2,974	(a) 18	25	1,460	3,119	543	
Madura.	A ..	470	3	613	114	22	752	1,222	684	8,015	29	98	733	3,234	489
	B ..	152	1	479	185	12	677	830	545	1,199	(a) 20	121	611	1,486	215
	C ..	..	33	20	..	1	104	..	..	..	(a) 60	267	..	..	..
Total ..	623	87	1,112	299	35	1,533	2,052	1,209	4,184	(a) 105	388	1,344	4,970	703	
Tinnevely.	A ..	64	1	113	59	2	180	244	194	465	2	5	196	470	41
	B ..	65	..	248	273	8	532	597	483	1,097	(a) 69	159	562	1,256	47
	C ..	..	44	1	..	..	45	..	..	..	..	..	..	..	..
Total ..	129	45	367	335	10	767	841	677	1,662	(a) 69	169	748	1,726	88	
Total, Southern Circle.	A ..	1,428	8	2,300	571	88	3,052	4,420	3,662	9,378	219	696	3,281	10,574	1,199
	B ..	1,616	3	5,366	1,570	178	7,107	8,723	5,539	10,952	(a) 448	1,028	6,387	11,030	2,352
	C ..	8	369	81	44	5	496	..	..	..	..	..	..	..	..
Grand total ..	3,052	280	7,827	2,185	266	10,558	12,203	9,001	20,830	667	1,724	9,658	22,534	3,551	

A = Cases taken to court. B = Cases compounded. C = Cases undetected.
 The difference between column 2 and the closing balance of last year in the districts of North, South and West Vellore, South Arcot, South Salem and Madura is due to transfer of cases between A and B; in Trichinopoly 129 cases were transferred from B to A and 8 undetected cases were wrongly shown under compounded cases of last year; in Tinnevely the District Forest Officer has not furnished figure for unserved lands.
 (a) Inserted in the Chief Conservator's Office.

Register of breaches of Forest Rules during 1918-19—cont.

District.		Cases pending from 1917-18.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of the year.
			Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Western Circle.															
Mangalore, North.	A ..	23	3	38	7	31	79	102	67	105	14	23	81	133	21
	B ..	41	18	381	65	44	505	549	365	709	65	113	480	822	119
	C ..	..	48	..	..	..	48	..	..	..	..	..	..	..	..
Total ..		64	69	419	72	75	635	651	432	814	79	141	511	955	140
Mangalore, South.	A ..	11	6	47	15	13	81	97	97	109	9	21	76	130	16
	B ..	81	24	272	44	29	369	450	333	503	40	92	373	595	77
	C ..	..	20	..	..	..	20	..	..	..	..	..	..	..	..
Total ..		92	50	319	59	42	470	542	400	612	49	113	449	725	93
Malabar, North.	A ..	..	..	2	..	1	3	3	1	1	..	..	1	1	2
	B ..	1	1	8	2	8	19	20	16	35	3	18	19	53	1
	C ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..		1	1	10	2	9	22	23	17	36	3	18	20	54	3
Malabar, South.	A ..	2	..	1	..	4	5	7	7	21	..	..	7	21	..
	B ..	13	..	2	112	34	148	161	71	144	5	22	76	166	85
	C ..	..	7	..	..	..	7	..	..	..	..	..	..	..	..
Total ..		15	7	3	112	38	160	168	78	165	5	22	83	187	85
The Nilgiris.	A ..	43	4	27	21	11	63	106	96	215	4	8	100	223	6
	B ..	15	5	64	51	24	144	159	97	184	34	74	131	258	28
	C ..	..	39	..	..	..	39	..	..	..	..	..	..	..	..
Total ..		58	48	91	72	35	246	265	193	399	38	82	231	481	34
Kollegal.	A ..	2	1	30	19	1	51	58	42	107	2	6	44	113	9
	B ..	13	..	83	61	4	148	161	93	219	25	60	118	279	43
	C ..	..	19	..	..	..	19	..	..	..	..	..	..	..	..
Total ..		15	20	113	80	5	218	219	135	326	27	63	162	392	52
Coimbatore, North.	A ..	45	..	61	18	6	85	130	106	313	10	27	116	340	14
	B ..	53	5	221	192	9	427	480	375	1,437	41	136	417	1,573	63
	C ..	..	32	6	4	..	42	..	..	..	..	..	..	..	..
Total ..		98	37	288	214	15	554	610	482	1,750	51	163	533	1,913	77
Coimbatore, Central.	A ..	32	..	32	38	31	101	133	84	281	9	40	93	321	40
	B ..	49	..	208	79	74	361	410	332	677	19	49	371	726	39
	C ..	..	16	1	2	2	21	..	..	..	..	..	..	..	..
Total ..		81	16	241	119	107	483	543	436	958	28	89	464	1,047	79
Coimbatore, South.	A ..	9	..	44	3	6	53	62	49	101	3	13	52	114	10
	B ..	29	..	205	30	11	245	275	211	429	19	82	230	511	45
	C ..	..	5	..	..	..	5	..	..	..	..	..	..	..	..
Total ..		38	5	249	33	17	304	337	260	530	22	95	232	625	55
Grand Total.	A ..	167	14	282	121	104	521	683	519	1,253	51	143	570	1,395	118
	B ..	295	53	1,444	636	237	2,370	2665	1,914	4,337	251	646	2,165	4,983	500
	C ..	..	186	7	6	2	201	..	..	..	..	..	..	..	..
Total ..		462	253	1,733	763	343	3,092	3,353	2,433	5,590	302	789	2,735	6,379	618
Total ..	A ..	2,391	37	4,665	2,010	375	7,088	9,479	6,352	19,603	615	1,645	6,867	21,248	2,612
	B ..	3,174	68	11,776	5,081	800	17,725	20,899	14,541	31,511	1,529	4,208	16,070	35,819	4,829
	C ..	..	924	328	78	17	1,347	..	..	..	..	..	..	..	..
Grand Total, Presidency.		5,565	1,023	16,770	7,169	1,192	26,160	30,378	20,893	61,214	2,044	5,853	22,937	57,067	7,441

A = Cases taken into Court. B = Cases compounded. C = Cases undetected.
 * The variations between the closing balances of 1917-18 and these figures are due to transfers between heads A and B. Compounded cases taken to Court for non-payment of compounding fees and convicted.

Areas closed and open to grazing during 1918-19—cont.

District.	Closed to all animals.		Open to grazing			
			Of all animals.		Of all animals except (browsers sheep and goats).	
	Whole year.	Part of year.	Whole year.	Part of year.	Whole year.	Part of year.

WESTERN CIRCLE.

Reserved forests.

	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	
Mangalore, North	7	..	855	..	..	..
Do. South	3	..	433	..	..	..
Malabar, North	57	..	..	..	206	..
Do. South	144	..	..	..	..	..
The Nilgiris	23	..	442	..	..	..
Kollegal	82	..	649	..	..	..
Coimbatore, North	38	..	879	..	..	..
Do. Central	132	2	228	..	..	..
Do. South	249	..	191	..	14	..
Total ..	735	2	3,177	..	220	..

Reserved lands.

	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	
Malabar, South	29	..	..	..	..	..
The Nilgiris	9	..	75	..	..	..
Coimbatore, North	..	..	..	..	..	..
Do. Central	..	..	..	..	..	..
Total ..	29	..	75	..	..	..
Grand Total, Presidency ..	3,733	1,013	13,397	1,312	222	..

Note.—Sheep but not goats were allowed to graze over the areas noted in column (4).

* Less than one square mile.

ANNUAL FORM No. 74.

Forest Department, Madras Presidency.

Return of grazing in the State forests during 1918-19.

Area of forest tracts protected from fire during 1918-19—cont.

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	<i>Western Circle.</i>	<i>ACS.</i>	<i>ACS.</i>	<i>ACS.</i>	<i>ACS.</i>	<i>RS.</i>
Mangalore, North.	Special protection ..	30,732	31,950	255	31,695	354
	General do. ..	199,276	200,014	1,061	198,363	375
	Total ..	230,008	231,964	1,316	230,058	729
Mangalore, South.	Special protection ..	103,508	107,342	3,491	103,533	1,920
	General do. ..	170,135	171,458	935	170,523	156
	Total ..	273,643	278,800	4,426	274,056	2,076
Malabar, North.	Special protection ..	134,523	139,596	974	138,622	5,899
	General do. ..	..	..	..	..	..
	Total ..	134,523	139,596	974	138,622	5,899
Malabar, South.	Special protection ..	104,678	104,883	856	104,027	4,637
	General do. ..	..	..	..	..	..
	Total ..	104,678	104,883	856	104,027	4,637
The Nilgiris.	Special protection ..	64,875	76,357	2,503	74,154	4,152
	General do. ..	..	..	..	..	..
	Total ..	64,875	76,357	2,503	74,154	4,152
Kollegal ..	Special protection ..	30,267	38,380	1,386	36,394	2,892
	General do. ..	311,841	425,613	7,016	418,527	..
	Total ..	342,108	463,993	8,402	454,921	2,892
Coimbatore, North.	Special protection ..	8,280	10,431	2,588	7,373	1,268
	General do. ..	435,767	576,243	17,135	559,108	134
	Total ..	444,047	586,674	19,723	566,481	1,402
Coimbatore, Central.	Special protection ..	93,841	115,048	845	114,203	5,517
	General do. ..	135,612	115,721	194	115,527	722
	Total ..	229,453	230,769	1,039	229,730	6,239
Coimbatore, South.	Special protection ..	46,797	47,350	1	47,319	2,595
	General do. ..	180,305	180,663	754	179,999	..
	Total ..	227,102	228,013	755	227,318	2,595
Total, Special, Western Circle.		617,501	671,667	13,412	658,255	30,205
Total, General, Western Circle.		1,432,936	1,670,712	27,095	1,643,617	2,175
Grand total, Western Circle.		2,050,437	2,342,379	40,507	2,301,872	32,380
Grand total, Presidency Special protection.		4,132,293	4,613,069	346,578	4,272,491	1,15,585
Grand total, Presidency General protection.		5,153,161	5,634,297	182,648	5,491,649	6,705
Grand total, Presidency ..		9,285,654	10,247,366	473,226	9,764,140	1,22,290

* Fire-tracing Mysore-South Kanara boundary.

ANNUAL FORM No. 73.

Forest Department, Madras Presidency.

Area closed and open to grazing during 1918-19.

District.	Closed to all animals.		Open to grazing			
			Of all animals.		Of all animals except browsers (sheep and goats).	
	Whole year.	Part of year.	Whole year.	Part of year.	Whole year.	Part of year.
NORTHERN CIRCLE.						
<i>Reserved forests.</i>						
	SQ. MILES.	SQ. MILES.	SQ. MILES.	SQ. MILES.	SQ. MILES.	SQ. MILES.
Ganjam ..	83	..	540	..	..	..
Visagapatnam ..	11	..	209	..	2	..
Godavari, Upper ..	..	..	435	..	..	..
Do. Lower ..	25	..	373	..	..	..
Kistna ..	90	8	163	..	..	..
Kurnool, East ..	..	312	658	..	..	..
Do. South ..	554	..	206	..	..	..
Do. West ..	223	..	636	..	..	..
Total ..	(a) 996	320	3,313	..	(d) 2	..
<i>Reserved lands.</i>						
Ganjam ..	..	..	2	..	..	..
Visagapatnam ..	..	..	(a) 2	..	..	..
Godavari, Upper ..	..	..	399	..	..	..
Do. Lower ..	..	..	87	..	..	..
Kistna ..	..	..	1	..	..	..
Kurnool, East ..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..
Total ..	..	..	491	1	..	..
CENTRAL CIRCLE.						
<i>Reserved forests.</i>						
Bellary ..	94	24	483	24	..	..
Anantapur ..	160	..	589	..	..	..
Guntur ..	91	..	715	..	..	..
Cuddapah, North ..	70	..	525	..	..	..
Do. South ..	94	..	368	..	..	..
Do. West ..	58	..	689	..	..	..
Nellore ..	255	440	25	440	..	..
Chingleput ..	59	133	15	133	..	..
Chittoor ..	147	..	680	..	..	..
Total ..	1,028	597	3,374	1,312	..	..
<i>Reserved lands.</i>						
Bellary ..	3	..	..	..	..	..
Anantapur ..	..	..	..	..	..	..
Guntur ..	..	..	..	..	..	..
Cuddapah, North ..	1	..	..	..	..	..
Do. South ..	..	..	..	..	..	..
Do. West ..	5	..	..	..	..	..
Nellore ..	11	..	..	..	..	..
Chingleput ..	..	..	..	..	..	..
Chittoor ..	..	..	..	..	..	..
Total ..	20	..	..	..	..	..
SOUTHERN CIRCLE.						
<i>N.B.—No goat browsing is allowed.</i>						
<i>Reserved forests.</i>						
Vellore, North ..	89	..	372	..	..	..
Do. South ..	69	..	359	..	..	..
Do. West ..	11	..	317	..	..	..
South Arcot ..	83	..	195	..	..	..
Salem, North ..	79	..	720	..	..	..
Do. South ..	56	13	435	..	..	..
Trichinopoly ..	206	..	103	..	..	..
Madurai ..	83	..	577	..	..	..
Tinnevely ..	205	81	78	..	..	..
Total ..	932	94	3,269	..	..	..
<i>Reserved lands.</i>						
Vellore, North ..	2	..	(b) ..	..	..	..
Do. West ..	..	..	38	..	..	..
Salem, North ..	6	..	18	..	..	..
Do. South ..	..	..	2	..	..	..
Tinnevely ..	..	..	..	..	..	..
Total ..	8	..	58	..	..	..

(a) Leased forests.

(c) Excludes 5 square miles belonging to the Parlakimedi Mahab.

(d) Do. 19½ square miles do.

(b) Below one square mile.

Return of grazing in the

Grazing on payment

District.	Grazing on payment									
	At enhanced or special rates.					At full rates.				
	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Southern Circle.										
Vellore, North	(d) 684	(e) 36,429	(d) 12,075	..	21,917	11	382	..	..	76
Do. South	(e) 210	(f) 18,454 (h) 8,569	(g) 4,001	..	10,155 8,569	2,954	23,190	6,321	..	(a) 2,845 (c) 8,076 (d) 1,550 (i) 8
Do. West	(w) 69	(x) 22,319 (y) 7,336	(v) 1,402	..	11,466 8,375	2,532	15,771	5,108	..	4,856 36
South Arcot	(d) 347	(d) 14,201	(d) 10,396 (j) 610	..	10,044 203	130 314 395	1,573 8,064 4,927	349 19,894 9,138	..	376 (k) 6,947 (l) 4,732 5,195
Salem, North	(D) 1,473	(m) 81,057	(n) 13,920	..	35,201	62	23,850	7,465	..	14
Do. South	(e) 314	(e) 53,411	(e) 5,961	..	32,073	16	2,289	591	..	491 (p) 218 120
Trichinopoly	(g) 19	(g) 675	(g) 2,029	..	761	270	8,206	9,966	..	2,707 (a) 10,670
Madura	(e) 471	(f) 48,641	(n) 26,075	(t) 537	22,871	..	..	..	..	3,050
Tinnevely	(d) 89	(d) 4,833	(d) 915	..	2,684	410	7,684	15,194	..	2 (a) 575 (e) 155
Total	3,656	295,004	78,022	537	1,60,703	7,094	96,635	74,040	..	50,184

* The rates should be specified at the foot of the statement.

Notes for S.O.—The full rates are 6 annas per buffalo; 3 annas per cow, bullock or other animal and 1½ annas per sheep in all districts except Madura where the full rate is 4 annas per cow unit.

- (a) Collection from panchayatdars.
 (b) Free removal of grass.
 (c) Includes excess collection of Rs. 28.
 (d) The enhanced rates are 1 rupee per buffalo, 3 annas per cow or bullock and 4 annas per sheep.
 (e) 223 buffaloes at 1 rupee each and 17 at 12 annas each.
 (f) 16,325 cows at 8 annas each and 1,629 cows at 6 annas each.
 (g) 2,335 sheep at 4 annas each and 1,666 sheep at 3 annas each.
 (h) Foreign cattle at 1 rupee per cow.
 (i) Arrear collection made during the year.
 (j) 610 sheep at As. 5-4 per sheep for grazing in 2 blocks on a single permit in Gingee range.
 (k) Lease amount of grazing in certain reserves.
 (l) 1,139 buffaloes at 12 annas each and 234 buffaloes at 8 annas each.
 (m) 48,49 cows at 8 annas each and 32,658 cows at 4 annas each.
 (n) 13,514 sheep at 2 annas each and 406 sheep at 4 annas each.
 (o) The enhanced rates are treble the full rates.
 (p) Grazing assessment for the Malayalee cattle on the Chutteria as per B.P. Forest No. 142, dated 6th October 1915.
 (q) The enhanced rates are double the full rates.
 (r) The enhanced rates are treble the full rate.
 (s) 345 buffaloes at 8 annas each and 126 buffaloes at 4 annas each.
 (t) 26,653 cows and bullocks and 537 other animals at annas each and 21,938 cows and bullocks at 7 annas each.
 (u) 6,778 sheep at 2 annas each and 19,296 sheep at 4 annas each.
 (v) Lease amount for grazing in Kanulakuttiparamba reserved forest.
 (w) 69 buffaloes at 1 rupee each.
 (x) 21,564 cows at 8 annas and 755 at 6 annas each.
 (y) 950 sheep at 4 annas and 452 at 3 annas each.
 (z) 6,454 foreign cows at 1 rupee each and 842 foreign cows at 4 annas each in Chengam range.
 a 1 Penning licence fee.
 a 2 Includes excess collection of 1 rupee.
 a 3 Represents lump sum deposit collected from the villagers of Melur near Puliur unreserved for the fulfilment of obligation under the forest village system.
 a 4 Added to tally with audited figures.

State forests during 1918-19—cont.

Number of animals.							Grazing free. Number of animals.													Grand total of value at full rates. (29)
At privileged rates.*							By right under settlement.					During pleasure of Government or otherwise than under settlement.								
Buffaloes. (12)	Cows and bullocks. (13)	Goats and sheep. (14)	Other animals. (15)	Fees received.		Buffaloes. (18)	Cows and bullocks. (19)	Goats and sheep. (20)	Other animals. (21)	Value of fees at full rates. (22)	Buffaloes. (23)	Cows and bullocks. (24)	Goats and sheep. (25)	Other animals. (26)	Value of fees at full rates. (27)	Total value of fees at full rates. (28)				
				Actual. (16)	Value at full rates. (17)															
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Rs. (3) 2,537	Rs. (4)2,537	Rs. 27,375			
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	24,296			
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	22,552			
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	(6) 11	(6) 11	22,303			
..	..	..	..	..	..	..	..	..	..	..	..	150	..	..	28	28	40,438			
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	32,902			
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14,792			
..	..	..	..	..	..	..	..	..	..	..	261	2,676	302	5	826	826	23,197			
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,434			
..	..	..	..	..	..	..	..	..	..	..	261	2,826	202	5	3,402	3,402	2,14,289			

Return of grazing in the

Grazing on payment

District.	At enhanced or special rates.									
	At full rates.					At full rates.				
	Buffaloes.	Cows and bullocks.	Sheep.	Other animals.	Fees.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
WESTERN CIRCLE.					RS.					RS.
Reserved Forests.										
Mangalore, North	..	..	..	..	..	2,235	16,594	..	..	8,869
Do. South	..	..	..	..	..	3,125	18,840	..	..	4,749
Malabar, North	(a) 2,167	4,461	..	..	{ 4,407 † 100	..	..	..	..	..
The Nilgiris	(a) 63	3,153	S 330	..	{ 1,885 \$ 64	13,116	18,881	S 1,456	..	{ 8,609 (h) 141
Kollegal	(a) 2,924	68,141	S 2,402	..	{ 38,014 (h) 76	..	..	..	..	..
Coimbatore, North *	(b) 203	1,823	S 696	..	{ 4,859 (h) 76	..	..	..	..	..
	(b) 1,768	15,879	S 1,280	..	{ 14,487 (h) 76	..	..	..	..	..
	(a) 722	20,776	S 13,509	..	{ 11,931 (h) 76	..	..	..	..	..
	(c) 554	13,714	S 2,171	..	{ 6,915 (h) 76	..	..	..	..	..
	(d) 339	5,845	S 578	..	{ 23,540 (h) 76	..	..	..	..	..
	(e) 1,530	14,669	S 1,727	..	{ 2,760 (h) 76	..	..	..	..	..
Do. Central	(a) 72	11,787	S 3,328	..	{ 1,863 (h) 76	..	..	..	..	..
	(d) 12	999	S 681	..	{ 2,541 (h) 76	..	..	..	..	..
Do. South	(a) 287	5,802	S 233	..	{ 1,681 (h) 76	..	..	..	..	..
	(d) ..	1,676	S 19	..	{ 823 (h) 76	..	..	..	..	..
Total	10,531	168,048	26,995	..	1,25,039	13,513	54,527	1,456	..	17,468
Reserved Lands.										
The Nilgiris	..	186	..	..	93	127	293	..	..	103
Grand total, Presidency	46,454	699,332	{ 8,274,002 (g) 82	538	4,89,433	67,800	480,177	(S) 393,137	..	829,466

S = Sheep.

Notes for W.C.—The full rates are Rs. 6 per buffalo, Rs. 3 per cow, bullock or other animals and Rs. 1-6 per sheep.

(a) Rs. 1 per buffalo, Rs. 3 per cow, bullock or other animals and Rs. 4 per sheep.

(b) Rs. 8 per buffalo, Rs. 4 per cow, bullock or other animals and Rs. 2 per sheep.

(c) Rs. 1-5-0 per buffalo, Rs. 12 per cow, bullock or other animals and Rs. 6 per sheep.

(d) Rs. 2 per buffalo, Rs. 1 per cow, bullock or other animals and Rs. 3 per sheep.

(e) Rs. 2-5-0 per buffalo, Rs. 1-4-0 per cow, bullock or other animals and Rs. 10 per sheep.

(f) Elephant.

(g) As 6 per 100 per diem for buffaloes and Rs. 3 per 100 per diem for cows, bullocks or sheep.

(h) Sale-proceeds of fodder grass.

(i) Rev. due from reserves handed over to panchayat management, that of South Coimbatore includes the revenue due for 1

next year also.

(j) Revenue by lease of the right to graze in certain reserves.

* Buffaloes, cows, etc., brought for a cattle fair charged without distinction at a uniform rate of Rs. 2 per head.

† Collection at old rates—since refunded after recovery of the permits.

‡ Calves, half rates.

State forests during 1918-19—cont.

Number of animals.						Grazing free. Number of animals.													Grand total of value at full rates.
At privileged rates.*						By right under settlement.					During pleasure of Government or otherwise than under settlement.								
Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.		Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Value of fees at full rates.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Value of fees at full rates.	Total value of fees at full rates.			
(12)	(13)	(14)	(15)	Actual.	Value at full rates.	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)		
				RS.	RS.					RS.						RS.	RS.	RS.	
..	..	..	9,221	1,153	1,153	..	..	..	..	..	..	..	..	..	..	..	..	3,969	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,302	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	(f) 1	91	91	..	4,593	
(g) 300	(g) 14,500	S 46,100	(g) ..	236	7,153	..	..	..	..	..	2,734	..	..	..	1,025	1,025	..	18,813	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	38,089	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	61,201	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12,637	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,720	
300	14,500	46,100	9,221	1,389	8,306	..	..	..	..	..	2,734	..	..	1	1,116	1,116	..	1,54,929	
..	..	..	..	..	..	..	..	..	..	..	161	174	..	..	93	93	..	289	
9,331	81,751	53,618	9,221	11,454	26,660	913	..	..	..	1,268	9,282	70,632	1,482	22	18,332	18,332	..	8,65,209	

Abstract of animals permitted to grazing in reserved forests and reserved lands on payment.

Circle.	Buffaloes.	Bullocks and cows.	Sheep.	Goats.	Other animals.	Total.
Northern Circle	53,514	280,232	148,007	82	..	4,61,835
Central Circle	31,780	351,685	345,131	..	1	7,29,797
Southern Circle	10,750	391,639	152,068	..	537	6,54,984
Western Circle	29,671	237,554	74,551	..	9,221	3,50,897
Grand Total, Presidency	125,615	1,231,319	720,757	82	9,759	21,17,523

Forest Department, Madras Presidency.

Area under artificial reproduction, 1918-19.

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation
	On 1st July 1918.	Added during the year.	Excluded during the year.	Area on 30th June 1919.	Creation.	Upkeep.	Creation.	Upkeep.		
NORTHERN CIRCLE.										
A.—Regular Plantations.										
Vizagapatam	ACS.	ACS.	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.
Godavari, Lower ..	51	..	..	51	..	37	1	42	85	3,532
Kistna	223	..	38	196	..	104	31,150	15,463	5,605	70,349
Kurnool, East ..	33	..	..	36	8	110	1,575	7,423	212	3,435
Do. West ..	130	..	..	130	..	..	38,471	26,045	..	..
	1,430	..	..	1,430	..	185	2,92,254	64,132	..	17,598
Total ..	(a) 1,872	3	38	(a) 1,837	8	(b) 436	(c) 3,63,453	(d) 1,13,652	5,803	95,315
B.—Taungya plantations.										
Ganjam	..	2	..	2	3	..	3	..	..	..
C.—Cultural Operations.										
Ganjam	..	82	..	82	..	..	..	..	..	..
Vizagapatam ..	55	14	..	69	13	..	240	..	..	..
Godavari, Upper ..	..	107	..	107	59	..	59	..	..	..
Do. Lower ..	2,402	50	..	2,452	129	..	2,488	1,032	..	..
Kistna	1,233	209	..	1,442	260	98	7,722	2,399	1,955	62,704
Kurnool, East ..	133	125	..	258	290	..	10,214	3,561	..	..
Do. South ..	287	160	..	447	235	..	4,534	1,738	..	..
Do. West ..	4,006	999	..	5,005	790	..	22,951	2,482	..	..
Total ..	(e) 8,116	(f) 1,745	..	(g) 9,862	(h) 1,776	98	(i) and (j) 48,248	11,212	1,955	62,704
Grand total ..	9,988	1,751	38	11,701	1,787	582	4,11,706	1,24,264	7,859	1,58,019

CENTRAL CIRCLE.

A.—Regular Plantations.

Bellary	579	..	..	579	..	22	9,428	62,779	61	268
Anantapur	..	..	..	..	..	..	..	..	..	..
Guntur	1,755	..	206	1,547	..	..	42,133	23,151	12,504	80,925
Cuddapah, North	10	..	..	10	..	..	..	..	..	..
Do. South	146	..	108	38	..	70	23	553	3,619	8,861
Do. West	..	..	..	..	..	..	..	..	..	..
Nellore	3,270	..	..	3,270	..	199	1,56,705	15,971	9,763	2,28,614
Chingleput	..	..	..	..	..	..	..	..	..	..
Chittoor	60	..	..	60	..	505	..	1,062	8	51
Total	5,820	..	316	5,504	..	796	2,08,844	1,06,523	25,955	3,16,510

B.—Taungya Plantations—Nil.

C.—Cultural Operations.

Bellary	6,790	..	..	6,790	..	..	27,981	8,006	..	..
Anantapur	258	187	327	118	43	..	65	60	..	..
Guntur	..	..	..	..	..	..	..	..	..	..
Cuddapah, North	..	..	..	..	..	..	..	..	..	..
Do. South	..	..	..	..	..	..	..	..	..	..
Do. West	..	..	..	..	..	..	..	..	..	..
Nellore	116	584	..	700	2,722	..	2,722	..	..	..
Chingleput	..	450	..	450	223	..	223	..	..	..
Chittoor	1,922	583	..	2,605	363	257	617	372	..	..
Total	9,986	1,904	327	10,663	3,351	257	31,608	3,444	..	..
Grand total	14,906	1,904	643	16,167	3,351	1,053	2,40,452	1,12,970	25,955	3,18,510

* Revised figures furnished by the District Forest Officer.

† Correct figure furnished by the District Forest Officer.

- (a) Excludes 8 acres belonging to the Parlakimedi Malihah.
 (b) Do. Rs. 6 do.
 (c) Do. Rs. 50 spent on creation in the Parlakimedi Malihah.
 (d) Do. Rs. 405 do.
 (e) Do. 14 acres belonging to the Parlakimedi Malihah.
 (f) Do. 30 acres do.
 (g) Do. 44 acres do.
 (h) Do. Rs. 44 spent in Parlakimedi Malihah.
 (i) Do. Rs. 50 do.
 (j) Corrected in the Chief Conservator's office.

Area under artificial reproduction, 1918-19—cont.

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation.
	On 1st July 1918	Added during the year.	Excluded during the year.	Area on 30th June 1919.	Creation.	Upkeep.	Creation.	Upkeep.		
SOUTHERN CIRCLE.										
A.—Regular Plantations.										
Vellore, North ..	ACS. 1,641 (a) -1,043	ACS. 69	ACS. (b) 33	ACS. 254	RS. 1,701	RS. 1,448	RS. 21,816	RS. 1,36,623	RS. 1,599	RS. 87,997
Do. South ..	 (b) 35 18			51	348	116	1,965	499	1,395	3,110
Madura ..	1,329	..	..	1,329	141	250	60,904	8,051	2,943	8,072
Tinnevely ..	5,345	3	..	5,348	325	254	7,893	2,049	4,321	15,357
Total ..	6,872	143	33	6,982	2,515	2,068	92,578	1,47,186	10,258	1,14,536
B.—Taungya Plantations.										
Vellore, North ..	1	..	(c) 1	..	..	..	1	..	..	..
South Arcot ..	2	2	..	4	25	..	(d) 56	..	..	..
Tinnevely ..	23	..	..	23	..	..	47	132	..	..
Total ..	26	2	1	27	25	..	98	132	..	..
C.—Cultural Operations.										
Vellore, North ..	1,149	267	10	1,406	317	56	613	154	..	579
Do. South ..	10,980	3,613	..	14,593	210	..	1,012	..	..	..
Do. West ..	955	3	..	991	2	..	125	..	..	..
South Arcot ..	6,826	311	..	7,137	84	..	580	2,779	..	..
Salem, North ..	143	..	..	143	..	..	9,064	..	..	..
Do. South ..	1,303	..	..	1,303	..	..	..	..	..	..
Tinnevely ..	(e) +1,242 4,202	613	..	3,155	2,047	973	3,619	1,073	..	..
Total ..	23,833	4,941	10	31,764	2,714	1,053	20,605	10,416	..	648
Grand total ..	33,731	5,086	44	38,773	5,251	3,121	1,13,282	1,57,714	10,258	1,15,184
WESTERN CIRCLE.										
A.—Regular Plantations.										
Mangalore, South ..	52	..	..	52	..	..	10,347	..	..	516
Malabar, North ..	379	..	..	379	134	15,272	20,332	249	..	4,174
Do. South ..	6,554	23	..	6,589	10,654	7,642	5,52,594	5,62,442	3,55,814	28,17,833
The Nilgiris ..	1,743	..	..	1,743	..	571	3,13,599	57,029	7,73,630	..
Coimbatore, South ..	134	..	..	134	..	..	9,947	4,632	312	312
Total ..	8,862	26	..	8,888	10,654	8,247	5,94,732	9,00,935	4,13,397	36,96,485
B.—Taungya Plantations.										
Malabar, North ..	635	..	..	635	..	..	10,828	..	..	..
The Nilgiris ..	32	..	..	32	..	187	504	3,819	..	..
Total ..	667	..	..	667	..	187	504	14,547	..	..
C.—Cultural Operations.										
Bangalore, North ..	224	..	..	224	70	..	97	..	..	..
Malabar, North ..	8,515	1,045	..	4,599	431	409	4,655	8,451	..	..
Kollegal ..	27	..	..	27	33	7	515	155	..	..
Coimbatore, North ..	243	308	67	491	576	111	824	137	..	..
Do. Central ..	2,001	350	1,680	1,271	3,127	600	3,553	702	..	..
Do. South ..	1,220	31	..	1,251	651	175	3,332	1,880	..	..
Total ..	7,009	2,536	1,747	7,847	4,538	1,302	13,276	11,355	..	..
Grand total, W.C. ..	16,538	3,611	1,747	17,402	15,542	3,836	6,08,512	9,26,338	4,13,397	36,96,485
Total A. Regular Plantations.	26,125	173	387	26,211	13,177	11,647	12,59,609	12,70,879	4,55,513	42,22,345
Total B. Taungya Plantations.	693	2	1	695	28	187	602	14,779	..	..
Total C. Cultural operations.	51,014	11,176	2,084	60,155	12,729	2,708	113,738	36,426	1,956	63,352
Grand total, Presidency.	75,163	11,352	2,472	84,013	25,934	14,542	13,72,949	13,21,886	457,489	42,86,198

(a) Last year the areas of the whole reserves were shown as under plantations but now only the actual area under plantations have been shown.

(b) Transferred from North Vellore to South Vellore and corresponding expenditure also transferred.

(c) There are no Taungya plantations. Hence omitted.

(d) The expenditure of Rs. 26 was omitted to be shown in the last year's return.

(e) Correct figure furnished by the District Forest Officer.

* Excludes amounts relating to areas abandoned.

† Rupees 405 were spent in forming nurseries dibbling seeds, etc., areas not furnished.

‡ Revised figure.

ANNUAL

Forest Department,

Outturn (in thousands of cubic feet solid) of timber and fuel

Division.	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(In thousands of cubic feet.)															
NORTHHERN															
I. Reserved															
Ganjam ..	28	60	..	..	88	2	42	..	..	44	..	2	..	..	2
Vizagapatam ..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Godavari, Lower	1	25	..	..	26	2	..	..	..	2	..	..	..	..	..
Kistna ..	..	3	..	..	3	..	3	..	..	3	..	..	..	..	..
Kurnool, East ..	1	..	..	..	1	3	..	1	..	4	6	..	..	..	6
Do. South ..	4	17	1	..	22	2	..	1	..	12	..	5	..	..	5
Do. West ..	5	..	..	..	5	8	3	..	1	17	2	..	2	..	4
Total, Reserved forests.	40	105	1	..	146	17	57	7	1	82	8	7	2	..	17
II. Unreserved															
Ganjam ..	58	53	3	..	114	..	28	..	..	28	..	1	..	..	1
Vizagapatam ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Godavari, Upper	80	2	..	..	82	..	4	..	..	4	..	..	..	..	..
Do. Lower	2	173	4	..	179	..	..	..	..	..	19	..	..	..	19
Kistna ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kurnool, East ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	4	1	..	5	..	..	1	..	1	..	1	..	..	1
Do. West ..	..	..	..	..	..	..	5	..	..	5	..	..	..	..	..
Total, Unreserved lands.	90	282	8	..	380	..	37	1	..	38	..	20	1	..	21
Grand total ..	(b) 130	(c) 387	(d) 9	..	(e) 476	(f) 17	(g) 94	(h) 8	1	(i) 120	(j) 8	27	3	..	(k) 38
CENTRAL															
I. Reserved															
Bellary ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anantapur ..	..	53	..	..	53	..	..	..	42	42	..	..	..	..	..
Guntur ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cuddapah, North	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	15	..	..	15	..	..	..	..	..
Nellore ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput ..	1	3	..	..	4	..	..	..	..	..	..	..	..	..	..
Chittoor ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total, Reserved forests.	1	56	..	..	57	..	15	..	42	57	..	..	..	..	..
II. Unreserved															
Bellary ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

CENTRAL CIRCLE REMARKS.

Reserved forests, Leased forest and unreserved lands—Timber and fuel—Government agency and free grantees.—Actuals.
 Timber and fuel—Purchasers.—Estimates based on accounts furnished by purchasers in reserved forests and on money value realized in unreserved lands.

- (a) Corrected in the Chief Conservator's Office.
 (b) Excludes 598 (thousands) of cubic feet belonging to Parlakimedi Malihah.
 (c) Do. 9-344 do.
 (d) Do. 10-714 do.
 (e) Do. 10-714 do.
 (f) Do. 10-714 do.
 (g) Do. 6-197 do.
 (h) Do. 1-103 do.
 (i) Do. 8-074 do.
 (j) Do. 2-220 do.
 (k) Do. 2-220 do.

Form No. 76.

Madras Presidency.

during the year 1918-19 and agency of exploitation.

Miscellaneous.					Total timber.					Fuel.					Total outturn.
Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
(In thousands of cubic feet.)															
..	..	..	..	..	30	104	..	..	134	7	296	..	..	303	437
2	4	..	..	6	3	4	..	..	7	6	99	..	..	105	112
..	..	..	..	..	3	25	..	..	28	18	1,619	..	..	1,637	1,665
..	6	..	..	6	..	12	..	..	12	1	737	..	..	738	750
..	1	..	..	1	10	..	1	..	11	19	8	..	..	27	38
..	..	..	..	..	6	32	2	..	40	16	163	..	..	179	219
..	..	..	..	..	15	3	7	1	25	248	13	..	164	415	441
2	11	..	..	13	67	180	10	1	258	315	2,935	..	154	3,404	3,662
Lands.															
..	1	..	..	1	58	54	3	..	115	25	66	..	..	91	206
..	12	..	2	26	42	18	..	2	62	7	58	..	..	65	127
..	28	9	..	37	2	162	4	..	168	..	340	..	..	340	538
..	..	4	..	4	..	28	9	..	37	..	27	..	..	27	64
..	24	..	..	24	..	38	3	..	41	..	50	..	..	50	61
..	..	..	..	..	..	6	..	..	6	..	78	..	..	78	83
12	65	18	2	92	102	354	23	2	481	22	652	..	..	674	1,165
(j) 14	(m) 76	(n) 13	2	(o) 105	(p) 169	(q) 534	(r) 38	3	(s) 739	(t) 347	(u) 3,557	..	154	(v) 4,088	(w) 4,827
CIRCLE.															
Forests.															
..	..	..	..	..	..	53	..	42	95	4	282	..	..	286	286
6	15	..	..	21	6	15	..	..	21	3	63	..	..	63	168
1	35	1	..	36	1	35	1	..	38	..	269	..	..	269	283
2	69	..	..	71	2	69	..	..	71	1	1,413	..	..	1,414	1,485
1	25	1	..	27	1	40	1	..	42	21	1,034	..	..	1,055	1,147
..	..	..	..	..	..	..	..	..	..	40	618	..	..	658	658
..	..	..	..	..	1	3	..	..	4	7	110	..	..	117	121
1	8	1	..	10	1	8	1	..	10	6	242	..	..	248	258
11	152	3	..	167	12	224	3	42	281	82	4,408	..	..	4,490	4,771
Forests—Nil.															

Notes for the Northern Circle.

REMARKS.—The figures are actuals except in the following cases:—

- (1) Ganjam—Unreserved lands—Column 3.—This includes an estimated quantity of 24,820 cubic feet; of which, 6,640 cubic feet were arrived at by conversion of value at 20 cubic feet per rupee and 18,180 cubic feet at 15 cubic feet per tree removed.
 (2) Godavari, Lower—Unreserved lands—Column 23.—This includes 41,000 cubic feet of timber obtained by the conversion of sale amount into outturn at one cubic foot for one anna.
 (3) Kistna—Unreserved lands—Columns 18 and 28.—Estimates calculated at one cubic foot per anna on the value realized.
 (4) Kurnool, West—Unreserved lands—Column 28.—The sale amount is converted into outturn, the factor of conversion being 45 cubic feet for Rs. 1-4-0.

- (i) Excludes 1-256 (thousands of cubic feet) belonging to Parlakimedi Malihah.
 (m) Do. 10-065 do.
 (n) Do. 10-040 do.
 (o) Do. 11-331 do.
 (p) Do. 2-848 do.
 (q) Do. 26-220 do.
 (r) Do. 1-315 do.
 (s) Do. 30-359 do.
 (t) Do. 12-800 do.
 (u) Do. 99-371 do.
 (v) Do. 119-531 do.
 (w) Do. 149-950 do.

Outturn (in thousands of cubic feet or thousands of cubic feet solid) of timber and fuel

Division.	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
CENTRAL															
III. Reserved															
IV. Unreserved															
Bellary ..	..	87	..	..	87	..	42	1	..	43	..	..	..	..	..
Anantapur ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Guntur ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cuddapah, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nellore ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput ..	..	25	6	..	30	..	..	..	..	..	..	..	..	..	..
Chittoor ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total, Unreserved lands.	..	112	5	..	117	..	42	1	..	43	..	..	..	..	..
Grand total ..	1	168	5	..	174	..	57	1	42	100	..	..	..	..	..

SOUTHERN

I. Reserved															
Vellore, North ..	3	..	..	..	3	..	..	..	..	..	..	..	..	..	..
Do. South ..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Do. West ..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
South Arcot ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Salem, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	1	8	..	..	9	..	..	..	..	..	..	..	..	..	..
Trichinopoly ..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Madura ..	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..
Tinnevely ..	..	77	..	..	77	..	95	..	..	95	..	7	..	..	7
Total ..	9	80	..	..	89	..	95	..	..	95	5	7	..	..	12

II. Leased

III. Reserved															
IV. Unreserved															
Vellore, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Arcot ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Salem, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	1	5	..	..	6	..	6	13	..	19	..	..	..	..	..
Trichinopoly ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madura ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevely ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	2	5	..	..	7	..	6	13	..	19	2	..	..	..	2

V. Leased

Vellore, North ..	3	..	..	..	3	..	..	..	..	..	..	..	..	..	..
Do. South ..	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..
Do. West ..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
South Arcot ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Salem, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	2	8	..	..	10	..	6	13	..	19	..	..	..	..	..
Trichinopoly ..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Madura ..	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..
Tinnevely ..	..	77	..	..	77	..	95	..	..	95	..	7	..	..	7
Grand total ..	11	85	..	..	96	..	101	13	..	114	7	7	..	..	14

WESTERN

I. Reserved															
Mangalore, North ..	21	..	..	..	21	..	..	..	..	..	..	..	..	..	..
Do. South ..	88	7	..	6	101	..	..	..	..	..	..	..	..	..	..
Malabar, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	23	17	..	..	40	20	..	..	..	20	..	..	..	..	..
The Nilgiris ..	..	2	..	..	2	..	..	..	..	..	..	..	..	..	..
Kollegal ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coimbatore, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. Central ..	8	128	..	..	136	..	..	..	..	..	..	..	..	..	..
Do. South ..	7	6	..	..	13	..	..	..	..	..	..	..	..	..	..
Total ..	147	160	..	6	313	27	..	..	..	27	115	..	..	..	115

II. Leased

Malabar, South ..	219	..	..	..	219	60	..	..	..	60	..	..	..	..	..
The Nilgiris ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coimbatore, South ..	15	..	..	..	15	..	..	..	..	..	..	..	..	..	..
Total ..	234	..	..	..	234	60	..	..	..	60	87	..	..	..	87

during the year 1918-19, and agency of exploitation—cont.

Miscellaneous.					Total timber.					Fuel.					Total outturn.
Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
CIRCLE—cont.															
Lands—Nil.															
..	..	..	..	..	..	43	1	..	43	..	125	..	..	125	168
..	..	..	..	..	..	87	..	..	87	..	132	..	..	132	219
..	92	11	..	103	..	98	11	..	109	..	320	..	..	320	423
..	9	..	..	9	..	9	..	..	9	..	38	..	..	38	47
..	16	..	..	16	..	16	..	..	16	..	7	..	..	7	23
..	16	..	..	16	..	16	..	..	16	..	142	..	..	142	158
..	32	10	..	42	..	32	10	..	42	..	78	..	..	78	118
..	..	..	..	..	..	25	5	..	30	..	125	..	..	125	155
..	159	4	..	163	..	159	4	..	163	..	132	..	..	132	295
..	324	25	..	349	..	478	31	..	509	..	1,097	..	..	1,097	1,606
11	477	28	..	516	12	702	34	42	790	82	5,595	..	..	5,587	6,377

CIRCLE.

Forests.															
2	4	..	..	6	3	4	..	..	7	2	228	..	..	228	281
7	1	..	..	8	8	1	..	..	9	9	139	..	..	139	145
4	..	..	..	4	4	..	..	..	4	3	65	..	..	65	65
..	1	..	..	1	4	1	..	..	5	1	210	..	..	210	317
..	..	..	..	..	1	3	..	..	4	..	148	..	..	148	154
..	1	..	..	1	2	1	..	..	3	2	66	..	..	66	70
..	2	..	..	2	2	2	..	..	4	1	138	..	..	138	143
1	6	..	..	7	1	185	..	..	186	21	570	..	..	571	575
..	..	..	..	..	..	..	..	..	..	..	794	..	..	815	1,001
14	15	..	..	29	28	197	..	..	225	40	2,437	..	..	2,477	2,702

Forests—Nil.

Forests—Nil.

Lands—Nil.

Lands.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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FORM No. 74.
Madras Presidency.
 State forests during 1918-19.

Number of animals.

[illegible]

2. Model

2. Model

* Sale-proceeds of fodder grass.

† Revenue from forests handed over to panchayat management.

(2) The enhanced or special rates are—(a) 8 annas per buffalo, 3 annas per cow or bullock and 1 anna 6 pies per sheep or goat.

(b) 12 annas per buffalo, 5 annas per cow or bullock and 3 annas per sheep.

(c) Re. 1 per buffalo, cow or bullock and annas 8 per sheep, 5 annas per cow or bullock.

(3) The privileged rates are—

(f) 5 annas per cow or bullock.

(g) Excludes 1,415 buffaloes belonging to Parlakimedi Maliahs.

(i) Excludes Rs. 857 being fees received in Parlekhimadi Malinaga.

100-443888-100

Notes for O. O.—(1) The enhanced or special rates are—

Bellary .. Re. 1-0-0 per buffalo, As. 0-3-0 per cow, and As. 0-4-0 per sheep

(3) Rs. 1-8-0 per buffalo, Rs. 12 per cow, and Rs. 6 per sheep.

Gunter .. (b) As. 8 per buffalo, As. 4 per cow and As. 2 per sheep.

(c) Rs. 1 per cow.

Cuddapah, North 1 (a) As. 1-6 per cow.
 1 (e) Anna 1 per cow.

Do. South. (f) Re. 1 per cow.

No.	West.	(g) Re. 1 per cow.
		(h) As 1 S. per cow.

Nellara .. (i) Rs. 1 per buffalo and Rs. 1 per cow.

(2) The full rates are As. 6 per buffalo, As. 3 per cow and As. 1-6 per

Outturn (in thousands of cubic feet or thousands of cubic feet solid) of timber and fuel

Division.	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)

WESTERN

III. Reserved

IV. Unreserved

Mangalore, North ..	..	127	..	..	127	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Malabar, North ..	..	19	..	..	19	..	..	..	..	..	..	..	..	..	..
The Nilgiris ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kollegal ..	..	39	..	..	39	..	..	..	..	..	..	..	..	..	..
Coimbatore, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. Central ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	185	..	..	185	..	..	..	..	..	..	..	..	..	..
Grand total ..	381	345	..	6	732	87	..	..	..	87	202	..	..	..	202
Presidency total—	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Reserved Forests ..	197	401	1	6	605	44	167	7	43	261	128	14	2	..	144
Leased Forests ..	234	..	..	..	234	60	..	..	..	60	87	..	..	..	87
Unreserved Lands, ..	92	534	13	..	639	..	85	15	..	100	2	20	1	..	23
Grand total, Presidency ..	523	935	14	6	1,478	194	252	22	43	421	217	34	3	..	254

REMARKS.—The figures are actuals except in the following cases:—

Factor of conversion.

Mangalore, North—Outturn under "purchasers" unreserved lands.

Timber.—The sale amount is converted into yield, the factor of conversion being 16 cubic feet per ruppee.
 Fuel.—The sale amount is converted into yield, the factor of conversion being 3 pies per cubic foot.

Mangalore, South—Outturn under all agencies except "Government"

One tree = 25 cubic feet.
 Timber.—Estimate based on money value collected at four annas per cubic foot.

Malabar, North—Outturn under purchasers unreserved lands ..

Fuel.—Estimate based on money value collected at five annas per 20 cubic feet.

Malabar, South—Reserved forests (column 2), 6,200 cubic feet ..

On log = 20 cubic feet.
 One log of above 4 candies = 52 cubic feet.
 Do. from 2 to 4 candies = 26 cubic feet.
 Do. under 2 candies = 20 cubic feet.

Leased forests (column 2), 10,816 do. ..

One short log = 4 cubic feet.

Reserved forests (column 7), 19,820 do. ..

Measurables = 6 cubic feet.

Leased forests (column 7), 37,940 do. ..

Smaller classes of saplings are calculated approximately as per standard measurements

Reserved and leased forests ..

Approximately calculated at $\frac{1}{4}$ cubic foot for kariyas and

Fuel column 27 ..

 $\frac{1}{4}$ cubic foot for junglewood posts.

The Nilgiris—Unreserved lands (column 3) ..

Calculated with reference to money value at one anna per cubic foot.

Kollegal—Reserved forests (column 7) ..

230 poles; 1 pole = 6.52 cubic feet.

Central Coimbatore—Unreserved lands (columns 18, 19 and 28) ..

The amount is converted into yield, the factor of conversion being one anna per cubic foot.

South Coimbatore.—Miscellaneous timber and fuel ..

The figures are reported to be very rough estimates.

during the year 1918-19 and agency of exploitation—cont.

Miscellaneous.					Total timber.					Fuel.					Total outturn.
Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)

CIRCLE—cont.

Lands—Nil.

Lands.

..	453	..	13	466	..	453	..	13	466	..	483	..	..	483	949
..	..	..	..	..	..	127	..	..	127	..	149	..	..	149	276
..	7	..	..	7	..	7	..	..	7	..	60	..	..	60	67
..	..	..	..	..	..	19	..	..	19	..	..	..	..	..	19
..	2	..	..	2	..	2	..	..	2	..	2	..	..	2	4
..	..	..	..	..	..	39	..	..	39	5	13	..	..	18	57
..	49	8	..	57	..	49	8	..	57	..	96	..	..	96	153
..	..	1	..	1	..	..	1	..	1	..	..	..	..	..	1
..	511	9	13	533	..	696	9	13	718	5	803	..	..	808	1,526
5	644	9	13	671	675	889	9	19	1,592	816	4,611	..	..	5,427	7,019
32	212	3	..	217	401	794	13	49	1,257	1,247	13,588	..	154	14,989	16,246
..	..	..	..	..	381	..	..	..	381	1	..	..	..	1	382
12	1,344	83	15	1,554	106	2,083	112	15	2,316	40	3,516	4	..	3,560	5,876
44	1,656	86	15	1,801	888	2,877	125	64	3,954	1,288	17,104	4	154	18,550	22,504

ANNUAL FORM No. 77.

Forest Department, Madras Presidency.

Outturn of minor forest produce during the year 1918-19.

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
Northern Circle	<i>Reserved Forests.</i>	NO.	RS.	RS.	RS.	RS.	RS.
	Bamboos	1,018,964	22,506	68,581	280	61	91,478
	Grazing and fodder grass	..	..	98,872	13,547	1,138	1,13,557
	<i>Other produce.</i>	QNS.	..	..	..	..	..
	Grass (hay, thatch, korai, etc.) ..	10,343	95	5,076	111	..	5,283
	Tamarind, soapnuts, galnuts, nux-vomica, shekol, etc. ..	10,713	18,425	3,044	..	23,070	44,549
	Horns, honey, wax, resin, gum, skins, etc. ..	..	..	1,731	..	..	1,731
	Tangedu, etc., barks and fibres. ..	37,268	19,184	80,427	..	1	92,612
	Stone, gravel, earth, etc. ..	8,404	152	352	37	..	691
	Leaves for platters ..	..	..	2	..	..	2
	Date and palmyra leaves, stalks, etc. ..	..	..	280	..	..	280
	Manure leaves and thorns ..	..	..	400	..	..	400
	Miscellaneous including tree-tapping and tree owner's fees. ..	16,127	7,426	972	..	500	8,900
	Total minor produce ..	81,245	45,325	92,314	148	23,571	1,61,358
	Total, Reserved forests ..	..	67,931	2,59,517	18,075	24,770	3,60,193
	<i>Reserved Lands.</i>	NO.	..	..	..	..	..
	Bamboos	400	4	54	..	..	58
	Grazing and fodder grass	..	..	4,020	..	..	4,020
	<i>Other produce.</i>	QNS.	..	..	..	..	..
	Grass (charhi, korai, etc.) ..	344	2	761	..	..	763
	Tamarind, soapnuts, galnuts, nux-vomica, shekol, etc. ..	68	47	15,467	..	..	15,514
	Honey, horns, wax, resin, gum, skins, etc. ..	..	..	363	..	..	363
	Tangedu, etc., barks and fibres. ..	54	5	13,590	..	..	13,595
	Date and palmyra leaves, stalks, etc. ..	..	..	149	..	..	149
	Miscellaneous including tree-tapping and tree owner's fees. ..	45	45	2,025	..	..	2,070
	Total minor produce ..	1,103	99	30,358	..	..	30,457
	Total, Reserved lands ..	..	103	34,432	..	..	34,535
	<i>Unreserved Lands.</i>	NO.	..	..	..	..	..
	Bamboos	15,680	162	18,361	54	3	18,590
	Grazing and fodder grass	..	..	13,830	..	..	13,830
	<i>Other produce.</i>	QNS.	..	..	..	..	..
	Grass (charhi, korai, etc.) ..	1,208	9	457	173	..	639
	Tamarind, soapnuts, galnuts, nux-vomica, shekol, etc. ..	311	298	58,834	..	..	59,442
	Horns, honey, wax, resin, gum, skins, etc. ..	5	30	696	..	..	726
	Tangedu, etc., barks and fibres. ..	316	846	62,994	12	..	63,851
	Stone, gravel, earth, etc. ..	2,476	4	1,862	..	..	1,893
	Leaves for platters ..	..	..	241	..	..	241
	Date and palmyra leaves, stalks, etc. ..	316	6	259	226	..	491
	Manure leaves and thorns ..	..	..	173	..	..	173
	Miscellaneous including tree-tapping and tree owner's fees. ..	35	178	45,680	..	..	45,893
	Total minor produce ..	4,698	730	1,51,223	411	..	1,52,364
	Total, Unreserved lands ..	..	912	1,83,404	465	3	1,84,784

Outturn of minor forest produce during the year 1918-19—cont.

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
Northern Circle	<i>Abstract for the circle.</i>	NO.	RS.	RS.	RS.	RS.	RS.
	Bamboos in number	1,036,044	22,792	86,936	334	64	1,10,126
	Grazing and fodder grass	..	..	1,16,522	13,547	1,138	1,31,207
	Other produce in quarters	87,052	46,154	2,73,895	559	23,571	3,44,179
	Grand total, Northern Circle ..	..	(a) 88,946	(b) 4,77,353	14,440	24,773	5,85,512
Central Circle	Bamboos	NO. 20,096	515	21,537	78	..	25,160
	Grazing and fodder grass	..	..	3,61,393	185	130	3,61,708
	Manure leaves, thorns, etc. ..	1,007	..	9,485	..	..	9,485
	Thatching grass, korai, etc. ..	4,238	253	5,351	40	..	5,644
	Hay	..	41,629	..	..	..	41,629
	Tamarind, soapnut, gallnut, nuxvomica, etc., minor produce. ..	5,788	5,484	40,676	..	..	46,059
	Horns, honey wax, gum, etc. ..	44	574	4,910	..	..	5,484
	Tangedu, reia, etc., barks ..	1,439	1,089	2,56,204	..	..	2,56,293
	Mica, stone gravel, etc. ..	120	..	6,531	43	..	6,577
	Date, palmyra leaves	..	..	2,042	360	..	2,403
Southern Circle	Miscellaneous, including tree-owners' fees. ..	1,356	4,821	1,12,246	12	..	1,17,079
	Total ..	13,991	53,850	4,36,348	455	..	4,90,353
	Grand total ..	..	54,395	3,22,278	718	130	8,77,521
	Bamboos	NO. 7,325	711	1,31,625	246	..	1,32,582
	Grazing and fodder grass	QNS. 22,592	12,274	2,10,888	3,402	..	2,26,564
Northern Circle	Grass (thatch, korai, etc.) ..	836	3	5,638	13	..	5,652
	Damru, cardamoms, etc. ..	1	12	5,444	..	..	5,456
	Tamarind, soapnuts, gallnuts, etc. ..	522	2,665	26,663	..	..	29,528
	Avaram, vembadam, etc., barks. ..	7,968	3,247	1,22,067	..	..	1,25,314
	Stones, gravel and earth ..	3,526	6	12,624	140	..	12,770
	Manure leaves, thorns, etc. ..	..	..	3,921	..	..	3,921
	Horns, honey, wax, gum, etc. ..	157	1,004	6,824	..	..	7,828
	Date, palmyra leaves, etc. ..	..	..	567	33	..	600
	Miscellaneous, including tree-tapping fees. ..	4,052	1,876	83,003	34	926	85,838
	Total ..	56,608	9,012	2,64,749	220	926	2,76,907
Western Circle	<i>Reserved forests.</i>	..	..	..	..	..	..
	Bamboos in number	98,251	3,929	38,197	35	..	37,161
	Grazing and fodder grass	..	..	1,46,896	1,025	..	1,47,921

NOTE.—This return shows the outturn or demand accrued during the year as per leading but Form No. 80 shows actual collections. Form No. 77 will not therefore agree with Form No. 80.

(a) Excludes Rs. 5,230 belonging to the Parlakimedi Malahs.

(b) Excludes Rs. 13,398 belonging to the Parlakimedi Malahs.

Outturn of minor forest produce during the year 1918-19—cont.

Circle.	Description of produce.	Produce removed or utilized					Total.
		By Government agency.		By purchasers.	By free grants.	By right-holders.	
		Quantity.	Value.	Value.	Value.	Value.	
Western Circle—cont.	<i>Other produce.</i>	qrs.	rs.	rs.	rs.	rs.	rs.
	Grass (thatch, koral, etc.)	..	..	492	1,739	..	2,231
	Damers, turmeric, pepper, cardamoms, etc.	..	..	5,224	..	..	5,224
	Tamarind, soapnuts, gallnuts, nux-vomica, sheakoi, etc.	..	..	11,915	..	..	11,915
	Horns, honey, wax, gums, resin, skin, etc.	424	2,290	203	..	..	3,493
	Avaram, vembadam, etc., barks and fibres.	1,550	3,004	11,140	..	..	14,144
	Stones, earth, gravel, etc.	..	15	482	80	..	513
	Manure leaves, thorns, etc.	..	..	2,052	2	..	2,054
	Date and palmyra leaves	..	..	1,864	..	..	1,864
	Miscellaneous	186	1,539	16,201	..	..	17,770
	Total	2,170	7,879	49,673	1,821	..	59,273
	<i>Leased forests.</i>						
	Bamboos in number	297,858	10,891	105	..	..	10,996
	Grazing and fodder grass	..	..	106	85	..	251
	<i>Other produce.</i>	qrs.					
	Grass (thatch, koral, etc.)	..	..	23	..	..	23
	Horns, honey, wax, gums, resin, skins, etc.	52	300	..	..	..	300
	Stones, earth, gravel, etc.	..	..	..	65	..	65
	Miscellaneous	..	..	78	..	..	78
	Total	52	300	106	66	..	472
	<i>Unreserved forests.</i>						
	Bamboos in number	590	13	255	3	..	271
	Grazing and fodder grass	86,908	32,591	..	..	..	32,591
	<i>Other produce.</i>	qrs.					
	Catechu	767	7,191	..	..	..	7,191
	Grass (thatch, koral, etc.)	..	..	..	..	..	..
	Damers, turmeric, pepper, cardamoms, etc.	..	..	50	..	..	50
	Tamarind, soapnuts, gallnuts, nux-vomica, sheakoi, etc.	..	..	4,893	..	..	4,893
	Avaram, vembadam, etc., barks and fibres.	1	6	18	..	..	19
	Stones, gravel, earth, etc.	..	..	611	..	..	611
	Manure leaves, thorns, etc.	..	..	12	..	..	12
	Date and palmyra leaves	..	..	7,627	10	..	7,637
	Miscellaneous	..	..	..	..	..	..
	Total	768	7,197	13,206	10	..	20,413
	<i>Abstract for the Circle.</i>	Nos.					
	Bamboos in number	396,969	14,833	33,557	38	..	48,428
	Grazing and fodder grass	86,908	32,591	1,47,092	1,110	..	1,80,793
	Other produce	2,980	16,376	62,885	1,597	..	80,158
	Grand total, Western Circle	..	62,800	2,43,134	3,046	..	3,09,379
	<i>Total, Presidency, Bamboos</i>	Nos.					
		1,454,454	32,881	2,76,655	696	64	3,18,296
	<i>Grazing and fodder-grass</i>	..	41,865	8,35,895	18,244	1,238	9,00,272
	<i>Other produce</i>	..	1,24,392	10,39,877	3,131	24,497	11,61,897
	<i>Grand total, Presidency</i>	..	2,08,138	21,52,427	22,071	25,829	24,08,465

ANNUAL FORM No. 78.

Forest Department, Madras Presidency.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1918-19.

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
TIMBER (IN THOUSANDS OF CUBIC FEET).					
<i>Northern Circle.</i>					
Ganjam	10	88	98	23	70
Vizagapatam	..	3	3	2	1
Godavari, Upper	2	42	44	38	1
Do. Lower	2	5	7	6	1
Kurnool, East	1	10	11	10	1
Do. South	7	6	13	11	2
Do. West	23	15	38	34	4
Total ..	(a) 45	(b) 169	(c) 214	(d) 134	(e) 80
<i>Central Circle.</i>					
Bellary	..	..	..	..	..
Anantapur	..	..	..	..	..
Guntur	1	6	7	2	5
Cuddapah, North	..	1	1	1	..
Do. South	..	2	2	2	..
Do. West	1	1	2	2	..
Nellore	..	..	..	..	..
Chingleput	..	1	1	1	..
Chittoor	..	1	1	1	..
Total ..	2	12	14	9	5
<i>Southern Circle.</i>					
Vellore, North	..	3	3	..	3
Do. South	1	4	5	3	2
Do. West	4	8	12	8	4
South Arcot, Salem, North	..	4	4	4	..
Do. South	1	6	7	6	1
Trichinopoly	1	2	3	3	..
Madura	..	2	2	1	1
Tinnevely	1	1	2	2	..
Total ..	9	32	41	29	12
<i>Western Circle.</i>					
Mangalore, North	3	21	24	15	8
Do. South	18	88	106	27	75
Malabar, North	42	119	161	142	17
Do. South	395	322	717	245	470
The Nilgiris	2	81	83	77	6
Kollegal	1	2	3	1	2
Coimbatore, North	12	4	16	13	3
Do. Central	2	8	10	5	3
Do. South	193	80	273	74	129
Total ..	(e) 6	..	..	(a) 23	..
Grand total, Presidency ..	730	888	1,618	808	810

(a) Excludes 814 cubic feet belonging to Parlakimedi Malians.

(b) Do. 1,592 do. do. do.

(c) Do. 2,406 do. do. do.

(d) Do. 1,768 do. do. do.

(e) Do. 603 do. do. do.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1918-19—cont.

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
FUEL (IN THOUSANDS OF CUBIC FEET).					
<i>Northern Circle.</i>					
Ganjam	6	32	38	15	23
Vizagapatam	3	6	9	8	1
Godavari, Upper	6	7	13	11	2
Do. Lower	..	18	18	18	..
Kistna	1	1	2	2	..
Kurnool, East	11	19	30	30	..
Do. South	16	16	32	13	19
Do. West	55	248	303	260	43
Total	(a) 98	(b) 347	(c) 445	(d) 367	(e) 88
<i>Central Circle.</i>					
Bellary	2	4	6	6	..
Anantapur	..	..	..	..	..
Guntur	..	3	3	3	..
Cuddapah, North	2	..	2	2	..
Do. South	..	1	1	1	..
Do. West	..	21	21	21	..
Nellore	..	40	40	3	37
Chingleput	2	7	9	8	1
Chittoor	..	6	6	6	..
Total	6	82	88	50	38
<i>Southern Circle.</i>					
Vellore, North	..	2	2	2	..
Do. South	..	9	10	10	..
Do. West	1	1	1	1	..
South Arcot,	..	3	3	2	1
Salem, North	..	1	1	1	..
Do. South	..	3	3	3	..
Trichinopoly	2	2	4	4	..
Madura	..	1	1	1	..
Tinnevely	10	21	31	29	2
Total	13	43	56	53	3
<i>Western Circle.</i>					
Mangalore, North	94	130	224	(a) 114	102
Do. South	117	123	243	(b) 74	163
Malabar, South	7	2	9	(a) 6	..
The Nilgiris	158	520	678	(b) 1	448
Coimbatore, North	..	5	5	(a) 12	215
Do. Central	4	33	37	(b) 3	..
Total	380	816	1,196	(c) 5	480
Grand total, Presidency	497	1,288	1,785	(d) 36	664

(a) Excludes 14,100 cubic feet belonging to the Parlakimedi Malihah.
 (b) Do. 19,300 do. do. do.
 (c) Do. 33,300 do. do. do.
 (d) Do. 30,400 do. do. do.
 (e) Do. 3,500 do. do. do.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1918-19—cont.

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
BAMBOOS (NUMBER).					
<i>Northern Circle.</i>					
Ganjam	40	29,840	29,880	29,880	..
Vizagapatam	..	1,941	1,941	(a) 1,639	140
Godavari, Upper	..	9,885	9,885	(a) 9,885	..
Do. Lower	1,812	21,970	24,782	(a) 18,232	6,550
Kurnool, East	46,476	72,922	119,398	104,239	15,159
Do. South	..	1,130	1,130	(a) 810	320
Do. West	68,557	891,356	959,913	(a) 906,865	52,148
Total	116,885	(a) 1,030,044	(b) 1,146,929	(c) 1,072,612	(d) 74,317
<i>Central Circle.</i>					
Bellary	..	..	..	..	..
Anantapur	..	..	..	..	..
Guntur	..	..	..	..	..
Cuddapah, North	2,000	1,577	3,577	3,361	216
Do. South	52	12,050	12,102	9,135	2,965
Do. West	800	3,800	4,600	4,150	450
Nellore	..	..	..	..	..
Chingleput	..	69	69	69	..
Chittoor	880	2,600	3,480	3,480	..
Total	3,732	20,036	23,828	20,196	3,632
<i>Southern Circle.</i>					
Vellore, North	186	362	548	548	..
Do. South	..	..	..	..	..
Do. West	..	1,240	1,240	1,240	..
South Arcot,	..	2,293	2,293	2,293	..
Salem, North	2	1,824	1,826	1,592	234
Do. South	..	50	50	..	50
Trichinopoly	25	..	25	..	25
Madura	..	7	7	7	..
Tinnevely	..	1,549	1,549	1,186	363
Total	213	7,925	7,538	6,866	672
<i>Western Circle.</i>					
Mangalore, North	224	5,848	6,072	(b) 311	4,821
Do. South	495	8,352	8,847	(b) 1,331	4,855
Malabar, North	700	1,857	2,557	(b) 2,557	..
Do. South	51,443	379,603	431,046	(a) 21,954	248,122
Kollegal	..	584	584	(b) 384	..
Coimbatore, North	245	745	990	(b) 356	..
Do. Central	125	..	125	(a) 125	..
Total	58,232	396,989	450,221	192,423	257,798
Grand total, Presidency	174,062	1,454,454	1,626,516	1,292,097	336,419

(a) Excludes 12,562 bamboos belonging to the Parlakimedi Malihah.
 (b) Do. do. do. do. do.
 (c) Do. 1,538 do. do. do.
 (d) Do. 11,024 do. do. do.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1918-19—cont.

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
MINOR PRODUCE (QUARTERS OF 28 LB.).					
<i>Northern Circle.</i>					
Ganjam	1,311	8,508	9,819	9,815	4
Vizagapatam	92	375	467	463	4
Godavari, Upper	39,135	8,845	47,980	(a) 5,842 (b) 35,580	2,470
Do. Lower	..	8,571	3,571	(a) 2,887 (b) 90	584
Kistna	50	501	551	473	78
Kurnool, East	8,956	46,492	55,448	53,808	1,640
Do. South	..	8,093	8,093	8,001	92
Do. West	14,625	10,567	25,292	(a) 15,283 (b) 780	8,768
Total	64,129	87,952	151,221	137,571	13,650
<i>Central Circle.</i>					
Bellary	82	167	189	92	97
Anantapur	101,181	725	101,906	101,566	240
Guntur	3,437	353	4,390	4,058	327
Cuddapah, North	16,483	266	16,749	16,632	123
Do. South	16,083	4,130	20,213	19,000	1,213
Do. West	23,340	478	23,818	23,445	373
Nellore	1,945	6,846	8,791	3,465	5,326
Chingleput	67	120	187	128	59
Chittoor	5,468	306	5,774	5,677	97
Total	169,031	13,991	183,022	174,168	7,914
<i>Southern Circle.</i>					
Vellore, North	1,401	37,984	39,385	39,217	168
Do. South	(a) — 1,877	218	498	238	260
Do. West	1,493	3,617	10,110	8,893	1,217
South Arcot	176	3,053	3,229	2,582	1,041
Salem, North	176	441	617	488	129
Do. South	15,006	2,040	17,046	17,046	..
Trichinopoly	39	149	188	42	146
Madurai	37	125	162	61	101
Tinnevely	67	3,981	4,048	4,003	45
Total	20,445	56,808	77,253	72,676	3,102
(a) — 1,377	(b) + 107	(b) + 107	(b) + 107	(b) + 107	(b) + 107
<i>Western Circle.</i>					
Mangalore, North	(a) 14,587	32,280	53,877	52,235	1,641
Do. South	41,267	48,768	90,035	(a) 77,483 (b) 641	2,248
Malabar, North	143	3	146	146	..
Do. South	(d)	(d)	(d)	..	(d)
The Nilgiris	28	149	177	(a) 149 (b) 4	23
Kollegal	855	85	460	(a) 261 (b) 3	133
Coimbatore, North	96	1,492	1,588	(a) 1,190 (b) 8	381
Do. Central	249	113	367	(b) 365	1
Do. South	(d)	3	3	3	(d)
Total	56,745	82,808	145,443	135,215	11,427
Grand total, Presidency	308,074	217,656	555,730	519,630	26,260

(a) Written off the accounts.

(b) Used departmentally.

(c) Excess found at the inspection of depots.

(d) Less than one quarter.

(e) Revised figure furnished by the District Forest Officer.

* Excludes 3 quarters of Sarsaparella, balance at the commencement of the year and disposed of during the year; 3 quarters of Sundargundi received during the year; and 26,560 quarters of Myrabolams received and disposed of during the year.

ANNUAL FORM No. 79.

Forest Department, Madras Presidency.

Statement showing the value of timber and other produce at sale depots for the year 1918-19.

District.	Description of timber or produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
		Number.	Cubic feet.	Value.	Number.	Cubic feet.	Value.	In favour of the year.	Against the year.
Northern Circle.									
Ganjam (d)	Timber	..	(a) 4,503	(f) 4,934	..	(g) 13,794	(d) 24,059	Rs. 19,125	Rs. ..
	Fuel	..	(c) 57	(f) 12	..	(g) ..	(h) ..	..	12
	Minor produce ..	1,178	..	582	..	..	..	..	1,178
Vizagapatam.	Timber	..	25	2	..	794	80	78	..
	Fuel	..	2,921	150	..	1,325	63	..	54
	Minor produce ..	92	..	21	4	..	36	15	..
Kurnool, South.	Timber	..	7,114	4,829	..	1,950	236	..	3,783
	Fuel	..	15,400	644	..	19,193	711	67	..
Kurnool, West.	Fuel	..	179	39	..	170	39	..	..
Central Circle.									
Nellore	Timber	..	..	..	17	47	47	47	..
	Fuel	..	..	..	..	36,725	4,591	4,591	..
	Minor forest produce.	1,493	..	403	5,326	..	6,081	5,678	..
Southern Circle.									
Vellore, North.	Timber	..	257	250	..	2,514	314	54	..
	Fuel	..	..	..	..	140	9	9	..
	Bamboos	196	..	1	..	..	..	..	1
Vellore, South.	Timber	..	..	..	..	..	..	..	..
	Fuel	..	..	..	..	..	..	..	..
	Minor produce ..	1,401	..	2,993	168	..	89	..	2,804
Vellore, West.	Timber	..	40	1,850	..	64	2,149	294	..
	Fuel	..	..	..	..	..	..	..	..
	Minor produce ..	160	..	135	1	..	1	..	134
South Arcot.	Timber	..	3,268	1,45,860	..	2,910	1,03,812	..	12,048
	Fuel	..	..	..	..	..	..	..	..
	Minor produce ..	..	..	..	120	..	2,395	2,395	..
Salem, North.	Timber	..	..	..	..	..	..	..	..
	Fuel	..	..	..	..	..	..	..	..
	Bamboos	2	..	1	234	..	..	116	..
Salem, South.	Timber	..	..	..	..	..	..	..	..
	Fuel	..	..	..	..	..	..	..	..
	Bamboos	173	..	382	129	..	241	..	141
Trichinopoly.	Timber	..	582	8,015	..	313	263	..	2,747
	Fuel	..	..	..	..	..	..	..	..
	Bamboos	..	..	..	..	..	..	..	..
Madurai.	Timber	..	..	..	..	..	..	..	..
	Fuel	..	..	..	..	..	..	..	..
	Bamboos	..	..	..	..	..	..	..	..
Tinnevely.	Timber	..	..	..	..	..	..	..	..
	Fuel	..	..	..	..	..	..	..	..
	Bamboos	..	..	..	..	..	..	..	..

(a) Excludes 814 cubic feet belonging to Parlakimedi Malahs.

(b) Do. Rs. 610 being value of (a) belonging to Parlakimedi Malahs.

(c) Do. 688 cubic feet belonging to Parlakimedi Malahs.

(d) Do. Rs. 625 being value of (c) belonging to Parlakimedi Malahs.

(e) Do. 14,100 cubic feet belonging to Parlakimedi Malahs.

(f) Do. Rs. 342 being value of (e) belonging to Parlakimedi Malahs.

(g) Do. 3,500 cubic feet belonging to Parlakimedi Malahs.

(h) Do. Rs. 87 being value of (g) belonging to Parlakimedi Malahs.

(i) Do. 11,024 bamboos (value Rs. 661) belonging to the Parlakimedi Malahs.

Statement showing the value of timber and other produce at sale depots
for the year 1918-19--cont.

District.	Description of timber or produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
		Number.	Cubic feet.	Value.	Number.	Cubic feet.	Value.	In favour of the year.	Against the year.
Southern Circle.	<i>Southern Circle-- cont.</i>			RS.			RS.	RS.	RS.
	Timber	..	6,431	1,58,966	..	7,433	1,09,062	..	49,894
	Fuel	..	9,954	230	..	220	14	..	216
	Bamboos	213	..	8	672	..	158	150	..
	Minor produce ..	16,876	..	9,638	559	..	3,503	..	6,185
Mangalore, North.	Total	..	..	1,68,982	..	..	1,12,737	..	56,245
	<i>Western Circle.</i>								
	Timber	..	227	123	..	2,044	2,548	2,429	..
	Bamboos	174	..	17	4,621	..	540	523	..
	Malabar, South.	..	25,422	36,350	..	..	..	..	36,350
The Nilgiris.	Fuel	..	282	65	..	8	2	..	54
	Bamboos	568	..	2	450	..	2	..	..
	Timber	..	2,384	8,043	..	5,569	12,345	4,303	..
	Fuel	..	10,320	1,178	..	4,553	511	..	667
	Minor produce ..	24	..	220	23	..	884	164	..
Kollegal ..	Timber	..	768	192	..	1,928	934	742	..
	Minor produce ..	283	..	576	..	183	366	..	210
	Coimbatore, North.	..	12,061	5,29,638	..	3,543	1,05,954	..	4,23,684
	Minor produce ..	96	..	15	331	..	49	34	..
	Coimbatore, South.	..	5,932	7,066	..	9,447	15,254	8,189	..
Northern Circle.	Minor produce ..	15	..	8	..*	..	3	..	5
	Timber	..	11,642	9,635	..	22,538	25,105	15,470	..
	Fuel	..	18,617	845	..	20,697	818	..	29
	Minor produce ..	1,270	..	603	4	..	36	..	567
	Total value	..	..	11,083	..	..	25,967	14,874	..
Central Circle.	Timber	..	..	..	..	..	..	..	..
	Fuel	..	..	..	..	..	..	..	..
	Bamboos	..	..	..	..	..	..	..	..
	Minor produce ..	2,218	..	1,049	3,846	..	3,745	2,696	..
	Timber	..	7,707	1,69,327	..	6,831	1,68,968	..	10,371
Southern Circle.	Fuel	..	345	26	..	9,954	330	204	..
	Bamboos	50	..	3	213	..	3	5	..
	Minor produce ..	135	..	105	16,876	..	9,638	9,533	..
	Total value	..	..	1,69,451	..	..	1,68,983	..	479
	Timber	..	46,793	5,81,316	..	92,531	1,37,030	..	4,44,780
Western Circle.	Fuel	..	10,692	1,234	..	4,551	513	..	721
	Bamboos	742	..	19	4,971	..	542	523	..
	Minor produce ..	427	..	619	364	..	602	..	17
	Total value	..	..	5,83,888	..	..	1,38,893	..	4,44,995
	Grand total, Presidency.	..	..	7,64,961	..	..	3,37,577	..	4,27,404

* Less than one quarter.

ANNUAL FORM No. 80.

Forest Department, Madras Presidency.

Summary of revenue of the different district, for the year 1918-19.

Summary of expenditure of the different districts for the Forest year 1918-19—cont.

Summary of expenditure of the different districts for the Forest year 1918-19.

Head of account.	Direction.	Ganjam.	Vizagapatnam.	Godavari, Upper.	Godavari, Lower.	Kistna.	Kurnool, East.	Kurnool, South.	Kurnool, West.	Total.
Northern Circle.										
I. Refunds and Drawbacks—Forest Refunds	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
A. Conservancy and Works.	322	410	277	331	1,305	199	359	4,471	7,707	
I. Timber, etc., removed by Government Agency—										
(a) Timber	30,354	139	3,619	..	..	757	264	1,252	36,465	
(b) Firewood and charcoal	2	385	192	178	..	483	13	1,905	3,163	
(c) Bamboos	5	..	..	..	..	1,246	..	7,459	9,710	
(d) Sandalwood	..	..	..	..	..	..	..	..	..	
(e) Grass and other minor produce	5,924	4	226	23	..	..	..	6,573	9,992	
II. Timber, etc., removed by consumers, etc.	143	5,110	1,135	16,637	2,490	2,123	..	13,580	60,211	
III. Confiscated forest produce, drift and waif-wood.	20	..	161	760	15	1	5	102	1,064	
IV. Forests not managed by Government	..	..	..	..	..	..	..	..	..	
V. Rent of leased forests, etc.	..	..	..	..	..	..	..	..	..	
VI. Live-stock, stores, tools and plant	..	..	..	..	..	..	..	..	..	
(a) Purchase of cattle	..	..	..	..	..	..	..	..	..	
(b) Feed and keep of cattle	2,075	215	1,940	..	..	..	..	3,900	8,160	
(c) Stores, tools and plant	1,191	210	1,175	5,753	845	126	54	83	10,082	
VII. Communications and buildings—										
(a) Roads and bridges	3,855	592	671	1,657	381	5,868	1,423	1,614	16,073	
(b) Buildings	45	6,894	1,215	3,116	4,917	383	4,066	1,949	24,207	
(c) Other works	192	1	..	..	223	1,235	338	140	2,191	
VIII. Organization, improvement and extension of forests—										
(a) Demarcation	..	697	131	1,294	984	230	130	..	467	5,923
(b) Cost of forest settlements, compensation for land and rights.	..	..	..	..	..	..	..	..	..	
(c) Surveys—										
(1) Local surveys	..	417	60	879	1,892	813	953	144	641	5,804
(2) Survey of India	..	..	..	..	..	..	..	..	..	79
(d) Working plans	..	252	311	..	..	..	..	..	..	563
(e) Sowing and planting	461	113	14	59	199	770	290	276	1,204	3,318
(f) Protection from fire	..	5,603	1,226	7,243	5,496	1,175	8,523	10,229	7,323	46,885
(g) Other works	..	9	76	..	330	612	287	128	..	6,946
IX. Miscellaneous—										
(a) Law charges	..	..	3	..	..	..	..	3	..	9
(b) Other charges	..	20	34	23	320	..	..	..	..	359
(c) Grain compensation allowance	36	892	35	..	15	..	..	..	..	3,537
Total, A. Conservancy and Works	567	58,569	9,774	22,368	39,141	12,958	35,105	22,841	49,438	2,50,831
B. Establishment.										
I. Salaries—										
(a) Conservators	18,099	..	..	..	..	..	..	..	..	18,099
(b) Superior officers	2,472	13,038	4,389	3,405	9,700	4,952	3,845	8,500	15,410	65,709
(c) Subordinate establishment, etc.	947	26,677	8,280	12,013	14,667	7,997	13,531	15,596	20,723	1,19,821
(d) Office establishment	8,884	8,584	3,909	5,201	6,718	3,701	5,435	6,117	8,249	56,798
(e) Deputation, etc., allowances	745	6,954	2,547	11,515	3,410	1,943	4,719	5,951	6,024	43,839
(f) Grain compensation allowance	90	1,384	421	757	948	680	745	929	1,106	6,970
II. Travelling allowances—										
(a) Conservators	2,441	..	..	..	..	..	..	..	..	2,441
(b) Superior officers	470	3,454	1,614	1,239	1,242	1,546	1,603	1,287	2,416	14,811
(c) Subordinate forest and depot establishments	329	8,816	2,158	4,335	5,140	2,606	5,414	5,238	6,703	40,767
(d) Office establishments	1,688	2,377	731	1,826	2,168	992	2,080	1,678	2,232	15,177
III. Contingencies—										
(a) Contract items—										
(1) Service postage and telegram charges	701	1,500	886	873	940	1,122	1,057	811	1,063	8,579
(2) Other contract contingencies	1,096	1,855	1,043	1,018	2,069	1,266	2,205	1,428	1,857	13,840
(b) Non-Contract items—										
(1) Rents, rates and taxes	183	77	33	117	52	120	349	58	97	1,035
(2) Sundries	7,050	155	155	504	239	26	408	778	43	9,447
Total, B. Establishment	44,508	74,941	26,167	42,889	49,714	25,845	41,392	48,532	66,126	4,18,105
Grand Total of Expenditure A and B	45,075	1,33,510	35,941	65,257	88,855	38,803	76,497	71,373	1,15,564	6,68,936

(a) Excludes Rs. 9,984 belonging to the Parlakimedi Malihah.
 (b) Do. 18,829 do.
 (c) Do. 28,813 do.

Budget heads.	Belghari.	Anantapur.	Guntur.	Cuddapah, North.	Cuddapah, South.	Cuddapah, West.	Nellore.	Chingelput.	Chittoor.	Direction.	Total.
Central Circle.											
A. Conservancy and Works.											
I. Timber and other produce removed from the forests by Government Agency—											
(a) Timber	..	..	..	..	57	8	..	..	2	..	67
(b) Firewood and charcoal	22	..	..	..	..	..	445	310	..	..	778
(c) Bamboos	..	..	..	..	..	..	..	..	287	..	288
(d) Sandalwood	..	..	..	..	1	..	..	..	419	325	8,160
(e) Grass and other minor produce	..	1,877	127	599	4,544	5,325	4,607	25	..	..	..
Total	23	1,877	127	599	4,486	5,333	4,452	335	708	325	9,293
II. Timber and other produce removed from the forests by consumers or purchasers.	2,378	2,199	2,761	6,336	6,355	5,224	2,175	2,353	3,073	..	32,914
III. Confiscated drift and waif-wood	..	1	7	40	2	20	..	..	8	..	73
V. Rent of leased forests and payments to shareholders in forests managed by Government.	2,000	..	..	..	..	..	..	..	..	..	2,000
VI. Live-stock, stores, tools and plant—											
(a) Purchase of cattle	..	..	..	..	..	..	16	..	..	..	16
(b) Feed and keep of cattle	..	..	..	..	..	..	..	..	..	..	..
(c) Stores, tools and plant	1,205	258	355	302	205	920	1,838	201	1,402	102	6,683
VII. Communications and buildings—											
(a) Roads and bridges	..	196	365	371	4,682	2,029	57	976	3,894	..	12,570
(b) Buildings	1,163	2,360	3,253	2,851	7,738	4,102	2,826	3,652	5,488	..	33,443
(c) Other works	1	..	4	101	41	298	268	162	531	..	1,406
Total	1,164	2,556	3,632	3,323	12,461	6,429	3,151	4,790	9,913	..	47,419
VIII. Demarcation, improvement and extension of forests—											
(a) Demarcation	1,060	487	243	210	20	800	809	380	787	..	4,796
(b) Cost of forest settlement; compensation for land and rights.	..	..	..	276	78	600	480	396	..	..	1,886
(c) Surveys—											
(1) Local	..	..	..	..	..	..	377	367	..	462	1,214
(2) India	..	..	..	..	..	..	..	..	..	1,000	1,042
(d) Working plans	42	..	..	..	..	..	..	..	..	..	5,898
(e) Sowing and planting	383	544	1,305	387	425	785	1,597	223	1,349	..	24,653
(f) Protection from fire	1,334	3,731	..	6,853	3,143	5,204	1,428	1,627	1,323	..	57,864
(g) Other works	4,907	8,002	8,642	2,377	4,356	5,899	4,518	3,655	15,578	..	..
Total	7,731	12,764	10,090	10,103	8,022	13,288	9,239	6,558	19,097	1,462	98,294
IX. Miscellaneous—											
(a) Law charges	..	..	..	24	4	..	..	..	24	..	52
(b) Other charges	..	50	..	54	16	431	10	48	65	250	924
Total	..	50	..	78	20	431	10	48	89	250	976
Grain compensation allowance	21	..	21	..	21	21	48	37	4	..	173
Total, A. Conservancy and Works	14,522	19,705	16,893	20,311	22,630	31,665	20,929	14,322	24,249	2,189	1,97,816
Refunds	4,506	1,242	426	111	31	82	230	706	1,912	..	9,246
B. Establishments.											
I. Salaries—											
(a) Conservators	..	..	..	..	..	..	..	..	..	24,703	24,703
(b) Superior officers	4,276	7,775	7,904	4,668	8,118	5,447	9,310	3,962	9,844	5,104	66,307
(c) Subordinate Forest and Depot establishments	14,853	14,064	16,318	12,018	15,540	16,205	19,825	15,893	16,425	340	1,42,481
(d) Office establishments, a permanent	5,847	5,021	5,273	4,462	5,327	5,623	6,347	3,641	5,731	8,729	56,001
(e) Deputation and other allowance	4,057	3,802	3,417	3,351	2,664	3,737	4,916	4,745	4,545	625	35,879
(f) Grain compensation allowance	1,183	917	1,185	931	2,378	1,116	1,293	1,037	1,034	183	11,287
II. Travelling allowances—											
(a) Conservators	1,400	1,758	1,507	1,222	1,701	2,742	1,869	1,505	2,190	1,997	13,897
(b) Superior officers	1,923	1,747	1,681	1,623	2,339	2,072	2,875	1,815	2,186	772	19,013
(c) Subordinate forest and depot establishments	4,868	5,326	74,33	3,323	5,124	6,612	6,856	5,095	6,467	90	48,014
(d) Office establishments	988	1,179	55	681	1,673	1,045	1,274	1,038	1,523	1,133	11,289
III. Contingencies—											
(a) Contract items—											
(1) Service postage and telegram charges	707	657	835	542	438	484	1,086	539	1,012	1,087	7,417
(2) Other contract contingencies	1,572	1,417	624	1,278	1,290	1,162	1,854	3,390	1,619	962	15,168
(b) Non-Contract items—											
(1) Rents, rates and taxes	..	140	95	32	95	115	131	591	102	..	1,731
(2) Sundries	..	134	119	163	440	66	173	234	260	5,324	7,973
Grain compensation allowance	..	..	..	..	..	..	..	..	..	..	..
Total, B. Establishments	39,521	40,470	41,412	31,780	48,725	39,962	53,674	40,475	50,559	50,399	4,32,457

Head of account.	Northern Circle									
	Direction.	Ganjam.	Vizagapatam.	Godavari, Upper.	Godavari, Lower.	Kistna.	Karnool, East.	Karnool, South.	Karnool, West.	Total.
Receipts.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government Agency—										
(a) Timber	52	39,504	1,072	24,452	105	104	3,206	3,564	10,520	82,726
(b) Firewood and charcoal ..		862	63	512	1,187	72	1,617	25	4,840	8,730
(c) Bamboos		8					1,672		16,728	20,409
(d) Sandalwood		906	49	1,286	177	68	5,222		18,379	26,086
(e) Grass and other minor produce.										
II. Timber and other produce removed from the forests by consumers or purchasers—										
(a) Timber	18	9,253	1,167	1,676	15,987	3,771	897	2,535	1,095	36,447
(b) Firewood and charcoal ..	3		7,888	365	50,069	10,255	621	8,594	4,005	1,06,308
(c) Bamboos		5,047	12,695	9,890	42,787	3,785	1,787	10,931	344	69,915
(d) Grazing and fodder grass ..		9,597	4,219	8,013	13,022	14,750	29,384	11,854	27,456	1,16,522
(e) Other produce	22,291	1,377	16,498	2,314	42,959	7,062	2,017	9,805	13,085	1,19,118
(f) Rents for trees tapped ..		1,242	2,164		3,803	12,637	848	2,877	10,534	33,655
(g) Other items										
(A) Commutation fees										
III. Confiscated drift and waif-wood ..		255	116	1,869	5,654	245	79	502	1,472	10,892
IV. Revenue from forest not managed by Government—										
(a) Revenue from shared and private forests.										
V. Miscellaneous—										
(a) Fines and forfeitures ..		2,163	1,828	465	4,474	3,094	2,587	3,107	5,519	28,277
(b) Other sources	462	1,541	672	652	7,821	2,411	2,382	2,055	2,429	20,630
Total, Receipts ..	22,821	(*) 94,953	42,751	51,493	1,87,695	58,254	52,409	60,815	1,18,026	3,95,155

Budget heads.	Southern Circle									
	Direction.	Forest Engineer.	Vellore, North.	Vellore, South.	Vellore, West.	Arcoot, South.	Salem, North.	Salem, South.	Trichinopoly.	Madura.
Receipts.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government Agency—										
(a) Timber	28	2	61			2,427	80	9	42	
(b) Firewood and charcoal ..		38	184	27	128	80	2	156	70	
(c) Bamboos		24			78	235				
(d) Sandalwood	2,61,397		17,282	54,967						
(e) Grass and other minor produce.	381	14,655	4	649				43	221	
II. Timber and other produce removed from the forests by consumers or purchasers—										
(a) Timber		5,907	2,448	1,223	3,320	6,311	4,391	9,416	19,613	
(b) Firewood and charcoal ..	166	20,222	16,896	1,768	99,434	21,175	4,324	42,269	16,753	
(c) Bamboos		13,749	46,971	12,911	283	21,510	31,282	9,511	5,016	
(d) Grazing and fodder grass ..		21,333	21,286	22,552	22,292	40,410	32,502	14,752	23,571	
(e) Other produce	66,808	16,885	8,335	6,163	15,983	22,763	11,650	16,649	15,436	
(f) Rents for trees tapped ..		7,616	1,159	616	3,022	1,842	204	10		
(g) Other items					29	1,419				
(A) Commutation fees							2,988			
III. Confiscated drift and waif-wood ..		129	50	70	103	158	167	191	1,235	
IV. Revenue from forest not managed by Government—										
(a) Revenue from shared and private forests.										
V. Miscellaneous—										
(a) Fines and forfeitures ..		7,351	5,579	4,889	8,955	6,071	6,699	7,847	6,921	
(b) Other sources	100	1,232	646	377	763	2,422	5,538	652	7,694	
Total, Receipts ..	3,18,849	989	1,13,366	1,11,686	1,05,931	1,55,123	1,25,499	1,02,504	1,01,605	1,31,731

Note.—Revenue under Direction should be allotted as follows:—

I. (a) South Vellore (Rs. 74,612), West Vellore (Rs. 59,612), North Salem (Rs. 55,735), South Salem (Rs. 34,928), Trichinopoly (Rs. 37,469).

II. (a) South Arcot (Rs. 381).

III. (a) South Arcot (Rs. 165).

IV. (a) North Vellore (Rs. 3,709), South Vellore (Rs. 5,550), West Vellore (Rs. 3,602), South Arcot (Rs. 1,827), North Salem (Rs. 12,828), South Salem (Rs. 5,484), Trichinopoly (Rs. 3,595), Madura (Rs. 20,000), Tinnevely (Rs. 439).

V. (b) Direction (Rs. 10), Forest Engineer (Rs. 65), South Vellore (Rs. 20), West Vellore (Rs. 1), Madura (Rs. 4).

Note.—The revenue under Direction is distributed as follows:—

II. (a) Vizagapatam, Rs. 406.

Godavari Upper, Rs. 110.

Lower, Rs. 1,943.

Kistna, Rs. 2,622.

Karnool East, Rs. 4,249.

South, Rs. 5,838.

West, Rs. 7,218.

* Rectification as per details furnished by the District Forest Officer.

(*) Excludes Rs. 30,840 belonging to Parlakimedi Mullaha.

Direction.	Central Circle									
	Bellary.	Alampur.	Guntur.	Cuddapah, North.	Cuddapah, South.	Cuddapah, West.	Nellore.	Chingelput.	Chittoor.	Total.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
..	17		165		712	96	5	2	46	983
..	184	29		12	22	334	44	475	281	1,372
..					14				4	18
..					40				42	82
..	210	12,182	1,112	4,877	11,192	22,408	6,004		118	65,398
..	411	12,202	1,217	4,889	11,980	20,033	5,052	427	491	67,763
..	7,755	18,303	6,681	2,811	10,534	12,940	6,775	2,631	12,181	80,614
..	16,438	5,413	37,214	7,820	6,887	4,349	38,855	17,223	9,402	1,43,664
..	623	1,055		5,195	2,970	1,790	225	515	12,540	24,918
..	31,114	50,094	79,397	16,345	6,676	22,045	82,472	23,298	22,298	3,47,929
..	60,174	1,01,893	17,299	11,352	14,093	28,643	44,625	9,748	37,491	2,36,188
..	37,279	17,703	5,755	1,345	2,635	3,007	5,469	4,355	5,272	83,820
..					100					100
..	1,56,443	1,91,457	1,46,816	44,868	43,895	72,774	1,00,271	58,460	99,184	2,17,208
..	102	251	272	718	37	303	479	165	146	2,537
..										
..	7,263	8,242	20,800	3,618	3,686	5,169	10,934	4,968	7,920	72,635
..	2,104	716	3,390	518	512	1,710	11,493	342	910	21,736
..	9,372	8,958	24,190	4,166	4,198	6,879	22,427	5,310	8,830	94,371
..	1,66,328	2,15,581	1,72,625	54,641	60,160	1,02,989	1,29,221	64,432	1,08,651	10,81,869

Tinnevely.	Western Circle													
	Total.	Direction.	North Mangalore.	South Mangalore.	North Malabar.	South Malabar.	The Nilgiris.	Kollegal.	North Coimbatore.	Central Coimbatore.	South Coimbatore.	Working Plan Office.	Forest Engineer.	Total.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
..	183	2,822	978	5,436	15,334	89,932	3,62,100	48,264	172	281	2,288	74,747		5,62,532
..	1,042	1,766		3,422	9,819		271	57,029			879			71,420
..	131	463		88	62		12,226		31	68				12,475
..	10	3,33,601	2,67,905	6,888	1,333		42			7,244				2,83,912
..	37	18,359	340	18,413	27,584	2	21	415	72	345	1,734			48,926
..	3,131	55,759		28,337	11,780	1,718	4,505	1,699	217	5,903	5,980	13,610		74,749
..	1,04,897	3,61,575		16,515	3,188	930	3	2,084	247	23,600	83,205	18,345		1,47,918
..	1,189	1,33,915		1,650	1,824	233	325	1,333	960	16,975	7,374	2,645		33,389
..	6,434	2,10,887		3,970	5,902	4,508		11,037	38,083	64,107	12,837	6,720		1,47,060
..	25,352	1,95,442	6,175	5,688	18,879	4,410	3,044	1,347	4,736	14,633	11,394	1,334		71,020
..		14,541		1,465	604				71		1			2,141
..	2,340	4,415												
..		2,988												
..	195	2,298		2,496	1,652		167	42	37	123	130	172		4,729
..														
..	5,219	60,652		4,907	3,076	530	1,288	828	1,568	9,701	8,692	4,145		34,730
..	2,949	22,313	89,059	1,140	9,905	11,762	35,044	7,998	1,900	3,481	4,008	20,497	9	1,85,346
..	1,54,809	14,22,216	3,64,487	29,545	1,11,423	1,14,025	4,18,989	1,32,196	48,100	1,47,461	1,58,321	1,42,215	9	17,17,267

The Revenue under Direction is distributed as follows:—

I. (a) North Malabar, Rs. 701 and South Coimbatore, Rs. 277; I (d) Kollegal, Rs. 69,925 and North Coimbatore, Rs. 1,97,980;

II. (a) The Nilgiris, Rs. 340.

III. (a) Kollegal, Rs. 3,143; North Coimbatore, Rs. 1,569 and Central Coimbatore, Rs. 1,463.

V. (d) Direction, Rs. 228 and South Coimbatore, Rs. 88,851.

* Includes Rs. 5,814 appertaining to South Coimbatore.

† Rs. 92 pertaining to II (d) has been wrongly credited to II (a).

‡ Includes Rs. 19,050 appertaining to South Coimbatore and Rs. 7,925 to The Nilgiris.

ANNUAL REPORT OF THE

FOREST DEPARTMENT

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Summary of expenditure of the different districts for the Forest year 1918-19—cont.

Budget heads.	Direction.	Forest Engineer.	Vellore, North.	Vellore, South.	Vellore, West.	Arcoot, South.	Salem, North.	Salem, South.	Tiruchinopoly.	Madurai.	Tinnevely.	Working plans.	Total.
Southern Circle.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
I. Refunds and Drawbacks.	100	2,373	5,650	3,545	771	129	376	1,643	611	101	..	..	15,299
A. Conservancy and Works.													
I. Timber and other produce removed from the forests by Government Agency—													
(a) Timber	..	..	11	96	..	495	..	621	..	61	..	..	1,284
(b) Firewood and charcoal	..	..	5	17	..	22	56	..	..	140	..	..	240
(c) Bamboos	..	..	5	..	..	16	170	..	..	56	..	..	247
(d) Sandalwood	..	..	14	3,072	8,859	275	4,499	3,545	2,500	339	..	..	23,116
(e) Grass and other minor produce	..	..	11,109	435	245	43	6	61	27	309	104	..	11,245
II. Timber and other produce removed from the forests by consumers or purchasers.	..	..	2,010	1,160	1,029	1,095	1,775	3,570	647	2,925	4,240	..	18,463
III. Confiscated drift and waif-wood.	..	..	6	1	2	..	5	20	4	1	..	..	39
V. Rent of leased forests and payments to share holders in forests managed by Government.	..	..	..	..	..	..	28	..	..	..	..	..	28
VI. Livestock, stores, tools and plant—													
(a) Purchase of cattle	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) Feed and keep of cattle	166	168	1,115	155	217	72	1,205	1,502	404	1,913	232	67	7,204
(c) Stores, tools and plant	..	..	..	..	..	..	..	..	..	..	..	..	..
VII. Communications and buildings—													
(a) Roads and bridges	..	47,749	2,714	190	1,927	98	1,348	702	682	14,085	3,829	..	73,311
(b) Buildings	..	..	2,936	6,894	8,876	3,543	2,087	5,323	1,925	14,769	3,255	..	48,641
(c) Other works	..	..	5	560	1,337	29	53	193	128	729	6	..	3,046
VIII. Demarcation, improvement and extension of forests—													
(a) Demarcation	..	..	301	—	359	8	275	369	..	2,218	159	..	3,370
(b) Cost of forest settlement; compensation for land and rights.	..	..	94	71	..	..	441	..	270	618	..	..	1,464
(c) Surveys	..	..	572	..	476	374	100	846	557	..	..	..	2,942
(d) Working plans	..	..	..	..	150	..	..	..	..	..	..	614	764
(e) Sowing and planting	..	..	3,658	554	57	97	225	3,020	34	1,558	945	..	10,084
(f) Protection from fire	..	..	850	661	765	207	2,694	5,405	563	5,245	4,527	..	18,323
(g) Other works	..	..	7,603	5,418	6,006	4,882	12,151	9,975	4,116	13,515	6,696	..	56,272
IX. Miscellaneous—													
(a) Law charges	..	..	..	..	..	..	5	4	6	..	..	..	15
(b) Grain compensation allowance	..	..	83	16	18	29	15	18	18	67	..	..	264
(c) Other charges	36	..	268	—	108	115	289	2,327	3	12	164	..	3,308
Total, A. Conservancy and Works ..	237	47,917	33,349	18,538	30,414	10,911	28,118	33,770	12,470	57,600	24,385	671	2,98,680
B. Establishments.													
I. Salaries—													
(a) Conservators	22,005	..	..	..	..	..	..	..	..	..	..	..	22,005
(b) Superior officers	1,465	4,764	9,622	10,718	5,319	9,095	11,053	9,060	4,700	15,149	9,537	2,034	92,525
(c) Subordinate Forest and Depot establishments	930	2,982	10,852	2,739	9,797	8,289	18,740	16,555	11,185	20,033	15,412	1,692	1,25,606
(d) Office establishments	2,370	2,851	4,388	5,143	4,301	3,962	6,547	6,720	5,361	6,225	5,924	694	61,869
(e) Deputation and special allowances	720	1,517	2,671	2,455	2,286	2,649	4,324	3,833	3,724	4,429	4,247	229	33,214
(f) Grain compensation allowance	122	121	652	681	580	605	1,119	946	805	1,345	1,007	30	8,018
II. Travelling allowances—													
(a) Conservators	2,244	..	..	..	464	..	125	..	..	..	112	..	2,945
(b) Superior officers	57	669	1,581	2,285	1,075	1,386	1,760	818	1,267	1,316	1,266	477	14,453
(c) Subordinate forest and depot establishments	187	1,067	2,907	2,760	2,534	2,815	4,749	4,230	3,140	5,149	4,514	410	34,462
(d) Office establishments	1,208	297	806	650	390	576	798	466	1,309	1,057	87	..	8,317
III. Contingencies—													
(a) Contract items—													
1. Service postage and telegram charges	934	..	863	876	620	846	1,279	755	1,043	1,010	877	52	9,155
2. Other contract contingencies	1,581	..	757	611	1,184	1,059	1,322	1,762	814	1,135	1,705	107	12,849
(b) Non-contract items—													
1. Rents, rates and taxes	..	450	108	206	118	15	27	39	29	220	201	..	1,437
2. Sundries	4,850	581	174	111	..	47	88	132	..	79	50	74	6,292
Total, B. Establishments ..	15,778	16,099	35,331	36,565	28,728	31,344	51,957	45,573	32,543	57,911	46,023	5,286	4,32,134
Grand Total of Expenditure, A and B.	16,015	63,016	68,680	55,103	59,142	42,255	80,075	79,343	45,014	1,15,511	70,413	5,957	7,30,814

Summary of expenditure of the different districts for the Forest year 1918-19—cont.

Budget heads.	Direction.	North Mangalore.	South Mangalore.	North Malabar.	South Malabar.	The Nilgiris.	Kollegal.	North Coimbatore.	Central Coimbatore.	South Coimbatore.	Working- plans office.	Forest Engineer.	Total.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Western Circle.													
I. Refunds and Drawbacks ..	..	26	720	149	884	215	291	372	455	582	..	..	3,694
A. Conservancy and Works.													
I. Timber and other produce re- moved from the forests by Government Agency—													
(a) Timber	— 17	3,140	9,630	9,617	53,821	8,757	165	115	2,637	14,645	..	..	1,02,560
(b) Firewood and charcoal	..	2,142	6,929	..	..	41,753	232	..	329	..	11	..	51,384
(c) Bamboos	..	245	..	..	24,912	..	63	104	..	..	..	..	25,324
(d) Sandalwood	..	436	146	..	..	96	1,109	3,582	..	..	..	..	5,369
(e) Grass and other minor produce.	— 340	33,130	20,440	28	1,553	430	47	560	— 330	1	..	..	55,519
II. Timber and other produce re- moved from the forests by consumers or purchasers.	..	4,519	3,215	463	1,944	190	2,098	5,248	4,393	2,696	..	..	25,771
III. Confiscated, drift and waif wood.	..	44	38	5	15	..	5	11	1	..	..	..	119
V. Rent of leased forests and pay- ment to shareholders in forests managed by Govern- ment.	..	..	..	33	2,064	..	..	..	..	2,500	..	..	4,597
VI. Live-stock, stores, tools and plant—													
(a) Purchase of cattle	..	..	4,185	3,304	4,184	1,132	..	..	1,157	8,842	..	..	22,804
(b) Feed and keep of cattle.	4	..	7,155	11,925	33,528	23,269	..	..	2,417	35,543	..	..	1,13,841
(c) Stores, tools and plant.	598	158	44	627	3,481	1,243	40	293	632	18,032	58	168	25,474
VII. Communications and build- ings—													
(a) Roads and bridges	6	1,571	1,953	2,579	3,391	7,213	2,902	8,392	6,055	7,332	..	3,869	44,780
(b) Buildings	254	3,030	4,327	2,556	1,132	539	2,333	4,280	4,833	2,238	..	1,024	26,546
(c) Other works	..	511	297	3	1,186	387	244	506	141	548	..	..	3,823
VIII. Demarcation, improvement and extension of forests—													
(a) Demarcation	..	197	681	1,320	759	906	597	1,274	750	37	..	..	6,521
(b) Cost of Forest Settle- ment; compensation for land and rights.	..	764	..	..	..	10,395	..	..	..	..	..	..	11,159
(c) Surveys	..	..	123	..	742	1,198	703	548	663	32	..	..	4,009
(d) Working plans	..	..	..	..	255	..	..	..	..	..	..	..	255
(e) Sowing and planting	..	..	20	..	270	..	3	..	..	..	1,706	..	1,999
(f) Protection from fire	760	123	32	974	18,240	758	152	765	4,131	860	..	..	26,795
(g) Other works	..	1,749	2,875	5,899	4,637	4,152	2,892	1,342	6,239	2,595	..	..	32,380
IX. Miscellaneous—													
(a) Law charges	..	9	5	305	2	11	150	..	..	..	..	..	482
(b) Grain compensation allowances.	..	..	..	18	79	57	31	168	..	83	..	..	457
(c) Other charges	261	260	702	59	345	4,931	2	812	433	1,234	..	..	9,039
Total ..	1,514	52,146	63,908	42,146	1,59,076	1,09,350	18,320	39,355	53,276	1,01,923	1,764	4,560	6,47,341
B. Establishments.													
I. Salaries—													
(a) Conservators	21,636	..	..	..	12,851	12,841	290	15,416	7,365	10,104	2,870	..	21,636
(b) Superior officers	2,454	5,060	10,214	4,652	9,050	11,976	8,097	13,166	13,330	10,911	2,142	4,784	94,881
(c) Subordinate Forest and Depot establishments.	1,492	10,228	8,635	7,200	9,050	11,976	8,097	13,166	13,330	10,911	2,142	4,784	99,572
(d) Office establishments	8,307	4,161	4,395	3,972	5,063	4,547	3,524	5,387	4,353	6,479	1,377	2,188	53,756
(e) Deputation and other allowances.	819	3,582	3,391	10,500	1,804	12,294	3,300	8,076	4,779	3,500	3,243	1,638	55,585
(f) Grain compensation allow- ance.	..	..	..	..	..	..	..	..	..	..	..	..	..
II. Travelling allowances—													
(a) Conservators	2,067	..	100	..	163	..	100	..	..	..	..	..	2,430
(b) Superior officers	169	1,482	1,840	1,725	2,732	2,886	50	2,034	1,838	3,557	907	695	19,320
(c) Subordinate forest and depot establishments.	709	2,950	3,323	2,401	3,498	3,124	2,123	3,480	4,403	2,731	1,030	1,068	31,140
(d) Office establishments	717	563	1,120	466	1,171	538	1,085	902	1,046	854	384	296	9,124
III. Contingencies—													
(a) Contract items—													
(1) Service postage and telegram charges.	685	1,170	1,290	605	808	1,075	711	930	613	1,210	85	..	9,182
(2) Other contract con- tingencies.	1,724	1,098	1,439	869	1,282	1,045	1,845	1,335	964	801	65	..	12,470
(b) Non-contract items—													
(1) Rents, rates and taxes.	79	..	4	21	38	50	621	2	106	750	..	450	2,440
(2) Sundries	4,767	46	203	73	400	138	74	296	101	351	27	434	6,910
Total ..	45,557	30,313	36,264	32,544	38,860	50,514	22,103	49,051	38,900	47,548	12,130	14,951	4,18,555

Summary of receipts and expenditure during 1918-19 for each circle and for the Presidency compiled in the Chief Conservator's office from the Conservators' statements.

Budget heads.	Northern Circle.	Central Circle.	Southern Circle.	Western Circle.	Grand total, Presidency.	
					1918-19.	1917-18.
RECEIPTS.	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government agency—						
(a) Timber	82,726	983	2,832	5,99,532	6,83,073	6,44,109
(b) Firewood and charcoal ..	8,730	1,372	1,766	71,420	83,288	77,588
(c) Bamboos	20,408	18	463	12,475	33,359	17,115
(d) Sandalwood	..	..	3,33,661	2,83,912	6,17,555	5,23,763
(e) Grass and other minor produce.	28,086	65,298	18,389	48,926	1,58,699	32,726
Total, I ..	1,37,950	67,753	3,67,116	10,16,235	15,79,054	13,65,241
II. Timber and other produce removed from the forests by consumers, etc.—						
(a) Timber	38,447	80,614	55,769	74,749	2,47,579	3,11,635
(b) Firewood and charcoal ..	1,04,775	1,43,664	3,61,578	1,47,918	7,57,935	9,58,916
(c) Bamboos	86,915	24,913	1,33,916	33,369	2,79,114	3,07,135
(d) Grazing and fodder grass ..	1,18,295	3,47,929	2,10,887	1,47,000	8,24,111	7,39,674
(e) Other produce	1,17,908	2,36,168	1,95,442	71,020	6,20,538	10,58,572
(f) Tree-owners' fees	33,665	83,820	14,541	2,141	1,34,167	1,43,244
(g) Other items	..	100	4,418	..	4,518	1,374
(h) Commutation fees	10,392	..	2,938	..	13,380	1,594
Total, II ..	5,08,398	9,17,208	9,79,539	4,76,197	28,81,342	35,48,604
III. Confiscated drift and waifwood ..	..	2,537	2,298	4,729	9,564	16,157
IV. Revenue from forests not managed by Government.	..	..	..	..	..	..
V. Miscellaneous—						
(a) Fines and forfeitures ..	28,277	72,635	50,552	34,736	1,26,294	2,07,355
(b) Other sources	20,530	21,736	22,518	1,85,346	2,50,225	2,89,099
Total, V ..	48,807	94,371	83,265	2,20,076	4,46,519	4,96,494
Grand Total, Receipts ..	6,95,155	10,81,869	14,22,218	17,17,267	49,16,509	64,18,490
EXPENDITURE.						
I. Refunds and Drawbacks ..	7,707	9,346	15,299	3,694	35,946	26,795
A. Conservancy and Works.						
I. Timber and other produce removed from the forests by Government agency—						
(a) Timber	38,465	67	1,284	1,02,580	1,40,376	70,845
(b) Firewood and charcoal ..	3,163	778	240	51,384	55,555	50,879
(c) Bamboos	8,710	..	247	25,324	34,281	15,761
(d) Sandalwood	..	288	23,116	5,369	28,773	39,213
(e) Grass and other minor produce.	9,032	8,160	11,245	55,519	84,016	1,82,803
Total, A-I ..	57,430	9,293	36,132	2,40,166	3,43,011	3,69,301
II. Timber and other produce removed from the forests by consumers or purchasers.	60,211	32,914	18,463	25,771	1,37,359	1,08,630
III. Confiscated drift and waifwood ..	1,054	73	39	119	1,295	1,990
V. Rent of leased forests and payments to shareholders in forests managed by Government.	..	2,000	28	4,597	6,625	18,225
VI. Live-stock, stores, tools and plant—						
(a) Purchase of cattle	..	16	..	22,804	22,820	12,424
(b) Feed and keep of cattle ..	8,160	..	..	1,13,841	1,22,001	80,635
(c) Stores, tools and plant ..	10,062	6,688	7,204	25,474	49,423	32,490
Total, A-VI ..	18,222	6,704	7,204	1,82,119	1,94,249	1,25,549
VII. Communications and buildings—						
(a) Roads and bridges	16,078	12,570	73,311	44,780	1,46,734	1,54,776
(b) Buildings	24,207	33,443	49,641	26,543	1,33,837	1,15,927
(c) Other works	2,191	1,405	3,046	3,823	10,466	8,514
Total, A-VII ..	42,471	47,419	1,25,998	75,149	2,91,037	2,79,217

Summary of receipts and expenditure during 1918-19 for each circle and for the Presidency compiled in the Chief Conservator's office from the Conservators' statements—cont.

Budget heads.	Northern Circle.	Central Circle.	Southern Circle.	Western Circle.	Grand total, Presidency.	
					1918-19.	1917-18.
EXPENDITURE—cont.	RS.	RS.	RS.	RS.	RS.	RS.
A. Conservancy and Works—cont.						
VIII. Demarcation, etc.—						
(a) Demarcation	3,933	4,796	8,370	6,521	18,520	24,587
(b) Cost of forest settlement; compensation for land and rights.	..	1,830	1,494	11,159	14,483	20,107
(c) Surveys. (1) Local ..	5,804	1,211	2,942	4,009	13,966	14,904
(c) Surveys. (2) Imperial ..	79	..	..	255	334	7,995
(d) Working-plans	563	1,042	764	1,939	4,368	9,323
(e) Sowing and planting ..	3,318	6,898	10,064	26,795	47,075	34,910
(f) Protection from fire ..	46,885	24,653	18,323	32,380	1,22,241	1,21,155
(g) Other works	5,946	57,814	70,272	46,334	1,81,366	1,54,180
Total, A-VIII ..	67,525	98,244	1,07,229	1,29,452	4,02,453	3,97,122
IX. Miscellaneous—						
(a) Law charges	9	52	15	482	558	1,334
(b) Grain compensation allowance.	3,537	173	264	457	4,431	1,719
(c) Other charges	359	924	3,308	9,039	13,630	24,387
Total, A-IX ..	3,905	1,149	3,587	9,978	18,619	27,440
Total, A. Conservancy and Works, including Refunds and Drawbacks.	2,58,538	2,07,042	3,13,979	6,51,035	14,30,594	15,34,309
B. Establishments.						
I. Salaries—						
(a) Conservators	18,092	24,703	22,005	21,633	86,433	84,583
(b) Superior officers	65,709	65,307	92,526	94,831	3,19,423	3,45,942
(c) Subordinate establishments, etc.	1,19,921	1,42,481	1,25,606	99,872	4,87,880	4,92,655
(d) Office establishments ..	56,798	56,001	61,369	53,756	2,27,924	2,39,799
(e) Deputation and other allowance.	43,839	35,870	33,214	55,380	1,68,303	..
(f) Grain compensation allowance.	6,970	11,237	8,013	..	26,220	41,677
Total, B-I ..	3,11,336	3,35,599	3,42,733	3,25,325	13,15,993	12,04,663
II. Travelling allowances ..	73,587	64,419	60,177	62,614	2,60,877	2,72,127
III. Contingencies—						
(a) Contract items—						
(1) Service postage and telegram charges.	8,979	7,417	9,155	9,182	34,733	30,554
(2) Other contract items.	13,840	15,168	12,340	12,470	53,818	45,283
(b) Non-contract items—						
(1) Rents, rates and taxes.	1,036	1,781	1,487	2,148	6,402	6,282
(2) Sundries	9,447	7,073	6,222	6,310	29,722	26,078
Total, B-III ..	33,392	31,439	29,234	30,710	1,24,675	1,08,197
Total, B. Establishments ..	4,18,205	4,32,467	4,32,134	4,18,549	17,01,345	15,85,287
Grand Total, Expenditure including Refunds and Drawbacks.	6,76,743	6,39,499	7,46,113	10,69,584	31,31,939	29,19,596
Surplus	18,412	4,42,370	6,76,105	6,47,583	17,84,570	24,96,900
Total ..	6,95,155	10,81,869	14,22,218	17,17,267	49,16,509	64,16,496

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FOREST DEPARTMENT

ANNUAL FORM No. 82.

Forest Department, Madras Presidency.

Revenue received and outstandings on account of revenue during 1918-19.

District.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the department at end of year.
Northern Circle.						
Direction	Timber and other forest produce.	Rs. A. P. 22,821 0 0	Rs. A. P. 22,821 0 0	Rs. A. P. 22,821 0 0	Rs. A. P. 22,821 0 0	Rs. A. P. ..
Ganjam	Do.	25,961 13 5	(d) 74,652 11 8	(d) 1,00,614 9 1	(a) 94,862 0 0	(c) 5,751 9 1
Vizagapatam	Do.	12,315 3 8	68,661 14 5	80,977 2 1	48,751 0 0	32,226 2 1
Godavari, Upper	Do.	81 9 0	62,886 5 1	62,967 14 1	51,493 0 0	11,474 14 1
Do. Lower	Do.	57,612 3 4	1,96,139 11 4	2,53,751 14 8	1,87,695 0 0	66,056 14 8
Kistna	Do.	2,703 12 4	55,894 7 2	58,597 3 6	58,254 0 0	343 3 6
Kurnool, East	Do.	(a) 169 0 0	45,741 4 8	52,855 10 2	52,409 0 0	446 10 2
Do. South	Do.	(a) 20,314 5 2	35,951 1 10	62,625 12 6	60,849 0 0	1,776 12 6
Do. West	Do.	(a) 30,674 10 8	1,16,040 8 0	1,46,714 8 8	1,42,203 7 9	4,511 1 0
Total		1,52,178 1 7	6,78,789 0 2	8,30,967 2 1	6,95,155 0 0	1,35,812 2 1
Central Circle.						
Direction	Timber and other forest produce.	Rs. A. P. 41 0 0	Rs. A. P. 41 0 0	Rs. A. P. 41 0 0	Rs. A. P. 41 0 0	Rs. A. P. ..
Bellary	Do.	44,686 2 8	2,49,775 15 0	2,94,461 1 8	2,94,461 1 8	0 0 0
Anantapur	Do.	53,804 12 9	4,57,527 10 4	5,11,331 7 1	5,11,331 7 1	0 0 0
Guntur	Do.	18,337 4 0	1,72,796 9 4	1,91,133 13 4	1,72,525 0 0	18,608 13 4
Cuddapah, North	Do.	8,153 1 6	49,762 14 6	57,915 0 0	54,641 0 0	3,274 0 0
Do. South	Do.	25,352 15 4	56,522 8 6	81,874 7 10	60,160 0 0	21,714 7 10
Do. West	Do.	32,530 4 3	1,09,678 3 6	1,42,208 7 9	1,09,989 0 0	32,219 7 9
Nellore	Do.	1,20,317 6 0	1,00,535 15 7	2,20,852 5 7	2,20,221 0 0	631 5 7
Chingleput	Do.	19,760 2 0	62,655 10 0	82,415 12 0	82,415 12 0	0 0 0
Chittoor	Do.	17,932 13 0	1,10,674 8 5	1,28,606 5 5	1,08,651 0 0	19,955 5 5
Total		3,40,673 13 6	13,69,965 15 2	17,10,638 12 8	10,81,859 0 0	6,28,779 12 8
Southern Circle.						
Direction	Timber and other forest produce.	Rs. A. P. 3,18,849 0 0	Rs. A. P. 3,18,849 0 0	Rs. A. P. 3,18,849 0 0	Rs. A. P. 3,18,849 0 0	Rs. A. P. ..
Vellore, North	Do.	16,480 12 9	1,32,260 14 8	1,48,741 11 5	1,13,366 0 0	35,375 11 5
Do. South	Do.	32,596 5 9	1,97,788 8 7	2,30,384 14 4	2,30,384 14 4	0 0 0
Do. West	Do.	8,231 5 7	1,17,341 3 10	1,25,572 9 5	1,05,631 0 0	19,941 9 5
Arcoot, South	Do.	15,913 4 5	1,57,484 13 1	1,73,397 1 6	1,55,125 0 0	18,272 1 6
Salem, North	Do.	26,712 4 8	1,57,072 15 3	1,83,784 3 11	1,26,492 0 0	57,292 3 11
Do. South	Do.	35,576 10 2	94,144 12 2	1,29,720 6 4	1,02,504 0 0	27,216 6 4
Trichinopoly	Do.	9,035 0 0	1,31,619 13 9	1,40,654 13 9	1,01,505 0 0	39,149 13 9
Madura	Do.	25,563 1 2	1,83,340 9 1	2,08,903 10 3	1,81,761 0 0	27,142 10 3
Tinnevely	Do.	21,437 13 11	1,52,099 1 1	1,73,536 15 0	1,54,309 0 0	19,227 15 0
Forest Engineer	Do.	989 0 0	989 0 0	989 0 0	989 0 0	0 0 0
Total		2,02,536 10 5	16,42,990 11 6	18,45,527 5 11	14,22,218 0 0	4,23,309 5 11
Western Circle.						
Direction	Timber and other forest produce.	Rs. A. P. 228 0 0	Rs. A. P. 228 0 0	Rs. A. P. 228 0 0	Rs. A. P. 228 0 0	Rs. A. P. ..
Mangalore, North	Do.	10,157 9 3	1,03,681 15 3	1,13,838 8 6	99,525 0 0	14,313 8 6
Do. South	Do.	6,801 5 8	1,14,242 3 9	1,21,043 9 5	1,11,423 0 0	9,620 9 5
Malabar, North	Do.	12,557 15 0	1,27,998 3 7	1,40,556 2 7	1,14,726 0 0	25,830 2 7
Do. South	Do.	4,023 14 4	5,31,497 1 8	5,35,520 6 2	3,92,014 0 0	1,43,506 6 2
The Nilgiris	Do.	9,192 10 3	1,49,101 7 9	1,58,293 2 0	1,34,647 0 0	23,646 2 0
Kollegal	Do.	1,000 0 0	1,35,222 10 0	1,37,222 10 0	1,21,168 0 0	16,054 10 0
Coimbatore, North	Do.	26,076 5 6	3,51,362 3 5	3,77,438 8 11	3,47,010 0 0	30,428 8 11
Do. Central	Do.	50,005 14 10	1,42,523 0 11	1,92,528 15 9	1,32,784 0 0	59,744 15 9
Do. South	Do.	14,409 8 3	2,61,411 11 3	2,75,820 3 6	2,55,217 0 0	20,603 3 6
Working Plans office	Do.	..	516 0 0	516 0 0	516 0 0	0 0 0
Forest Engineer	Do.	..	..	..	..	..
Total		1,34,225 3 1	19,16,833 9 7	20,51,058 12 8	17,17,267 0 0	3,33,791 12 8
Grand total, Presidency		9,12,142 12 11	56,10,580 4 5	65,22,723 1 4	49,22,351 11 0	15,00,372 11 4

ANNUAL REPORT OF THE

ANNUAL FORM No. 81.

Forest Department, Madras Presidency.

Outstandings and liabilities on account of contractors and disbursers for the Forest year 1918-19.

District.	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To department (outstandings).	By department (liabilities).
Northern Circle.								
Direction, Northern Circle	Rs. A. P. 496 11 6	Rs. A. P. 496 11 6	Rs. A. P. 24 7 6	Rs. A. P. 579 5 11	Rs. A. P. 603 13 5	Rs. A. P. 107 1 11	..	..
Ganjam	1,29,580 9 3	1,29,580 9 3	4,896 5 6	1,30,799 13 1	1,35,696 2 7	6,115 9 4	..	..
Vizagapatam	27,501 4 4	27,501 4 4	363 8 7	27,624 3 1	27,988 0 8	486 12 4	..	..
Godavari, Upper	48,518 8 11	48,518 8 11	874 12 11	43,431 4 0	44,306 0 11	787 8 0	..	..
Do. Lower	70,835 9 11	70,835 9 11	1,153 6 9	71,085 14 8	72,239 5 5	1,403 11 6	..	..
Kistna	31,552 7 4	31,552 7 4	1,290 3 6	30,603 8 4	31,893 11 10	341 4 6	..	..
Kurnool, East	90,247 2 9	90,247 2 9	2,689 4 4	90,838 4 1	93,537 8 5	3,299 5 8	..	..
Do. South	67,222 1 4	67,222 1 4	2,418 1 0	68,557 13 5	68,575 14 5	1,753 13 1	..	..
Do. West	97,153 11 10	97,153 11 10	3,029 5 1	96,741 4 8	99,770 9 9	2,616 13 11	..	..
Golconda Agency and Hill Madgole	4,193 8 1	4,193 8 1	8 10 0	4,241 0 0	4,249 10 0	56 1 11	..	..
Total	5,62,301 11 3	5,62,301 11 3	16,758 1 2	5,62,502 12 3	5,78,260 13 5	16,959 2 2	..	..
Central Circle.								
Direction, Central Circle	Rs. A. P. 926 5 2	Rs. A. P. 926 5 2	Rs. A. P. 29 7 2	Rs. A. P. 963 1 11	Rs. A. P. 992 9 1	Rs. A. P. 66 3 11	..	..
Guntur	43,280 13 7	43,280 13 7	637 12 7	43,180 15 5	43,828 12 0	547 14 5	..	..
Nellore	60,058 6 9	60,058 6 9	1,829 1 1	59,992 9 11	61,621 11 0	1,663 6 3	..	..
Cuddapah, North	49,108 13 5	49,108 13 5	687 6 0	49,316 3 11	50,003 9 11	896 12 6	..	..
Do. South	66,653 0 7	66,653 0 7	1,059 3 2	66,474 7 9	67,533 10 11	880 10 4	..	..
Do. West	65,204 11 11	65,204 11 11	1,870 3 6	64,573 5 6	66,543 9 0	1,338 13 1	..	..
Bellary	40,156 9 7	40,156 9 7	1,609 15 5	39,057 13 11	40,667 13 4	511 3 9	..	..
Anantapur	62,751 13 2	62,751 13 2	920 4 6	62,752 14 10	63,673 3 3	921 6 1	..	..
Chittoor	74,920 0 7	74,920 0 7	563 11 0	75,118 15 7	76,682 10 7	762 10 0	..	..
Chingleput	38,444 13 0	38,444 13 0	586 14 9	38,733 5 7	39,320 4 4	875 7 4	..	..
Total	5,01,503 6 9	5,01,503 6 9	9,593 15 1	5,00,273 14 4	5,09,867 13 5	8,364 6 8	..	..
Southern Circle.								
Direction, Southern Circle	Rs. A. P. 1,670 6 10	Rs. A. P. 1,670 6 10	Rs. A. P. 36 10 1	Rs. A. P. 1,705 15 7	Rs. A. P. 1,742 9 8	Rs. A. P. 72 2 10	..	..
Vellore, North	68,365 3 1	68,365 3 1	1,282 12 11	68,379 4 7	69,862 1 6	1,296 14 5	..	..
Do. South	44,758 11 8	44,758 11 8	1,270 14 6	43,949 14 6	45,229 13 0	482 1 4	..	..
Do. West	60,794 11 2	60,794 11 2	1,728 6 9	60,209 14 10	61,938 5 7	1,143 10 5	..	..
Arcoot, South	28,131 1 8	28,131 1 8	610 2 10	27,787 5 4	28,397 8 2	265 6 0	..	..
Salem, North	77,144 0 3	77,144 0 3	1,801 10 5	78,293 4 1	80,094 14 6	2,950 14 3	..	..
Do. South	73,101 6 2	73,101 6 2	1,754 14 5	73,256 8 3	75,011 6 8	1,910 0 6	..	..
Trichinopoly	40,031 15 0	40,031 15 0	923 4 3	39,982 8 3	40,910 12 6	878 13 6	..	..
Madura	112,591 15 1	112,591 15 1	2,646 12 5	112,747 5 3	115,394 1 8	2,802 2 7	..	..
Tinnevely	61,740 5 10	61,740 5 10	3,232 2 1	60,862 5 1	64,094 7 2	2,354 1 4	..	..
Forest Engineer	8,111 8 3	8,111 8 3	650 2 3	8,172 12 1	8,822 14 4	711 6 1	..	..
Total	5,76,441 5 0	5,76,441 5 0	15,942 12 11	5,75,347 1 10	5,97,289 14 9	14,848 9 9	..	..
Western Circle.								
Direction, Western Circle	Rs. A. P. 1,697 10 6	Rs. A. P. 1,697 10 6	Rs. A. P. 37 14 11	Rs. A. P. 1,733 12 2	Rs. A. P. 1,771 11 1	Rs. A. P. 74 0 7	..	..
The Nilgiris	1,13,501 2 1	1,13,501 2 1	4,542 2 0	1,14,409 9 2	1,18,951 11 2	5,450 9 1	..	..
North Coimbatore	80,169 0 3	80,169 0 3	2,473 0 10	81,816 4 16	84,259 5 8	4,090 5 5	..	..
Central do.	95,967 14 5	95,967 14 5	3,950 2 6	94,476 6 7	98,426 9 1	2,458 10 8	..	..
South do.	1,16,375 8 9	1,16,375 8 9	3,189 2 8	1,18,282 15 16	1,21,472 2 6	5,096 9 9	..	..
Kollegal	40,339 6 0	40,339 6 0	1,511 2 2	39,876 2 4	41,387 4 6	1,047 14 6	..	..
North Malabar	61,088 4 0	61,088 4 0	3,238 0 0	59,417 3 9	62,645 3 2	1,556 15 2	..	..
South do.	1,70,563 6 6	1,70,563 6 6	2,958 11 6	1,75,182 10 9	1,78,156 6 3	7,591 15 9	..	..
North Malabar	58,952 14 2	58,952 14 2	1,064 15 0	59,112 12 2	60,177 11 2	1,224 13 0	..	..
South do.	94,574 10 4	94,574 10 4	2,327 10 5	95,581 12 1	97,909 6 6	3,334 12 2	..	..
Working Plans office	9,294 11 5	9,294 11 5	229 1 10	9,900 1 1	10,129 2 11	834 7 6	..	..
Total	8,42,524 8 5	8,42,524 8 5	25,451 15 16	8,49,333 10 2	8,75,285 10 0	32,761 1 7	..	..
Grand total, Presidency	24,82,770 15 5	24,82,770 15 5	67,746 13 0	24,87,967 6 7	25,55,704 3 7	72,933 4 2	..	..

(a) Excludes Rs. 20,187 belonging to Parlakimedi Malihah.
(b) Do. 20,187 do. do.
(c) Do. 483 do. do.
(d) Do. 20,037 do. do.
(e) Do. 20,520 do. do.
(f) Do. 334 do. do.

ACCOUNTANT-GENERAL'S OFFICE,
MADRAS, 1st September 1919.

C. C. SWETENHAM,
Deputy Accountant-General.

Note for Northern Circle: (a) Elimination on account of erroneous demand. (b) Written off the accounts.
(c) Out of the total outstandings of Rs. 1,18,243-8-7, the amount actually due on or before 30th June 1919 was Rs. 12,592-8-7.
(d) Excludes Rs. 31,116 belonging to Parlakimedi Malihah. (e) Excludes Rs. 30,839 belong to Parlakimedi Malihah.
(f) Do. 277 do. do.
Note for Central Circle: (a) Elimination due to panchayats having been cancelled. (b) Elimination Sandur leased forests having been handed back to State.
(c) Elimination being excess and wrong demand. (d) Wrong credit to other heads.
(e) Written off.
* Written off the accounts.
Note.—Out of the total outstandings

ANNUAL REPORT OF THE

ANNUAL FORM No. 88.

Forest Department, Madras Presidency.

Financial results of the year 1918-19.

District.	Timber and other produce removed from the forests by Government Agency.		Other revenue.		Formation, protection and improvement of forests.	Total.	
	Receipts.	Charges.	Receipts.	Charges.		Receipts.	Charges.
<i>Northern Circle.</i>	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Ganjam	41,296	58,161	53,588	51,776	32,592	94,384	1,42,529
Vizagapatam ..	1,185	916	47,973	34,473	5,685	49,163	39,074
Godavari, Upper ..	26,259	9,826	25,355	32,629	23,199	61,615	70,454
Do. Lower ..	1,470	612	1,88,192	71,150	19,440	1,89,662	91,502
Kistna	244	89	60,538	29,344	13,614	60,782	43,047
Kurnool, East ..	11,611	8,617	44,555	30,960	35,927	68,636	81,534
Do. South ..	3,690	512	65,104	51,671	25,040	63,894	77,223
Do. West ..	52,095	31,673	73,594	69,252	22,648	1,26,889	1,23,573
Golconda and Hill Madgole Agency.	..	..	3,249	5,150	..	3,249	5,382
Total ..	(a) 1,37,950	(b) 1,10,236	(c) 5,67,205	(d) 3,75,555	(e) 1,83,145	(f) 6,95,155	(g) 6,68,938 (a) 7,707
<i>Central Circle.</i>							
Bellary	411	60	1,65,922	40,328	19,694	1,66,333	60,082
Anantapur	12,202	1,921	2,03,681	32,510	25,960	2,15,886	67,421
Guntur	1,217	157	1,71,312	39,620	23,459	1,72,529	63,136
Nellore	6,053	4,496	1,23,173	51,246	26,007	1,24,223	61,749
Cuddapah, North ..	4,889	629	49,756	35,876	20,897	54,645	57,402
Do. South ..	11,980	4,466	48,134	49,233	26,403	60,164	71,183
Do. West ..	30,633	6,377	79,961	45,233	23,294	1,03,994	78,374
Chingleput	477	367	68,958	33,090	19,972	64,435	58,419
Chittoor	491	752	1,08,166	52,848	38,434	1,08,657	92,034
Total ..	67,753	9,293	10,14,116	3,91,864	2,29,126	10,81,869	6,30,803 (a) 9,246
<i>Southern Circle.</i>							
Vellore, North ..	14,734	15,254	1,02,833	32,880	24,761	1,17,067	72,895
Do. South ..	92,097	3,689	1,00,095	34,742	69,532	1,92,192	97,943
Do. West ..	1,14,090	13,113	64,684	22,393	52,736	1,68,774	88,567
Arcoot, South ..	1,236	541	1,56,283	34,204	11,227	1,67,499	48,972
Palem, North ..	58,491	7,848	1,36,572	51,245	27,145	1,66,063	86,262
Do. South ..	37,081	7,163	1,05,116	45,439	32,212	1,42,597	84,604
Trichinopoly ..	37,547	4,329	1,04,864	33,538	11,002	1,42,511	48,869
Madura	337	1,186	1,51,429	61,273	70,294	1,51,768	1,22,753
Tinnevely	1,403	1,188	1,53,346	54,928	23,383	1,64,749	82,459
Total ..	3,57,116	54,311	10,65,102	3,61,301	3,15,202	14,22,218	7,30,814 (a) + 16,299
<i>Western Circle.</i>							
Mangalore, North ..	54,247	51,852	65,368	25,195	10,736	99,550	87,784
Do. South ..	54,632	66,567	56,817	23,991	15,592	1,11,449	1,06,150
Malabar, North ..	90,855	46,605	24,126	18,585	23,713	1,14,761	94,003
Do. South ..	3,74,618	1,53,230	17,422	9,129	41,781	3,82,640	2,32,366
The Nilgiris ..	1,00,276	1,10,223	31,366	16,345	38,436	1,34,672	1,65,309
Kollegal	70,206	2,697	60,993	24,265	19,022	1,21,193	45,984
Coimbatore, North ..	2,05,918	7,160	1,41,117	49,606	37,282	3,47,035	24,048
Do. Central ..	4,901	9,151	1,34,908	37,144	51,805	1,39,809	97,900
Do. South ..	80,833	97,210	1,75,920	48,979	28,433	2,56,758	1,74,622
Total ..	10,16,265	5,43,700	7,01,002	2,53,340	2,72,650	17,17,267	(i) 10,89,590
Grand total, Presidency.	15,79,084	7,17,640	33,37,425	13,82,030	10,00,023	49,15,509	31,31,895

(a) Refunds and drawbacks.

(b) Includes Rs. 6,787, belonging to Parakkimedi Maliaha.

(c) Do. 404 do. do.

(d) Do. 24,653 do. do.

(e) Do. 2,258 do. do.

(f) Do. 25,052 do. do.

(g) Do. 30,840 do. do.

(h) Do. 28,814 do. do.

(i) Includes refunds and drawbacks.

FOREST DEPARTMENT

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ANNUAL FORM No. 84.

PART I.

Forest Department, Madras Presidency.

Statement of elephants and other live-stock during 1918-19.

District.	On hand at the commencement of the year.		Number received during the year.	Number disposed of during the year.	On hand at the end of the year.		Total expenditure on maintenance during the year.
	Number.	Value.			Number.	Value.	
(1) ELEPHANTS.							
Northern Circle.							
Ganjam	2	RS. 2,700	..	..	2	RS. 2,700	RS. A. P. 2,087 0 0
Vizagapatam	1	3,000	..	1	..	..	245 0 0
Godavari, Upper	2	3,700	..	..	2	3,700	1,940 0 0
Kurnool, West	2	5,500	..	..	2	5,500	2,088 0 0
Total ..	7	14,900	..	1	6	11,900	6,340 0 0
Central Circle—Nil.							
Southern Circle—Nil.							
Western Circle.							
Mangalore, South	4	* 15,800	5	3	6	20,000	7,131 3 5
Malabar, North	14	48,750	24	9	29	61,600	11,924 13 7
Do. South	39	1,29,050	22	23	38	1,32,700	28,198 10 2
The Nilgiris	24	64,800	25	22	27	71,700	23,268 12 7
Coimbatore, Central	4	11,600	..	4	..	..	2,315 4 8
Do. South	21	52,400	21	18	24	77,300	18,188 4 4
Total ..	106	3,22,300	97	79	124	3,53,300	91,057 1 4
Grand total (Elephants), Presidency.	113	3,37,200	97	80	139	3,75,200	97,397 1 4
(2) OTHER LIVE-STOCK.							
Northern Circle.							
Ganjam	6	208	12	12	6	230	425 0 0
Kurnool, East	5	74	..	(a) 3	2	24	..
Do. West	17	850	..	(b) 1	16	800	1,812 0 0
Total ..	28	1,132	12	16	24	1,054	2,238 0 0
Central Circle.							
Chittoor	3	87	..	1	2	77	..
Southern Circle—Nil.							
Western Circle.							
Malabar, South	25	1,238	24	3	46	2,129	5,331 10 10
The Nilgiris	6	462	..	1	5	372	..
Coimbatore, South	73	5,202	58	27	104	7,061	13,491 9 7
Total ..	104	6,897	82	31	155	9,562	18,823 4 5
Grand total (Other Live- stock), Presidency.	135	8,116	94	48	181	10,693	20,655 4 5

* Revised figure reported by the District Forest Officers.

† Includes the value of 5 bullocks.

‡ Debited to A-1 (a).

(a) Two asses were written off and one was sold.

(b) Revised figure.

(c) Died.

District.	Buildings.				Stores.				Totals.				Difference in value	
	On hand at the commencement of the year.		On hand at the end of the year.		On hand at the commencement of the year.		On hand at the end of the year.		On hand at the commencement of the year.		On hand at the end of the year.		In favour of the year.	Against the year.
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.		
Northern Circle.														
Direction ..	1	Rs. 1,590	1	Rs. 1,430	414	Rs. 2,195	386	Rs. 2,303	415	Rs. 3,785	387	Rs. 3,732	..	53
Ganjām ..	118	50,399	108	47,850	3,754	8,092	3,853	7,572	3,872	58,191	3,941	55,222	..	3,269
Vizagapatam ..	89	7,816	73	9,647	1,538	4,144	1,629	4,347	1,627	11,980	1,602	13,094	2,034	..
Godāvari ..	125	27,755	128	26,709	3,201	13,873	3,558	15,471	3,326	44,638	3,684	42,180	..	2,458
Upper Godāvari ..	156	41,204	154	43,181	2,244	4,098	2,275	4,779	2,400	45,302	2,429	47,963	2,661	..
Lower Godāvari ..	38	5,313	35	4,767	1,358	10,112	1,483	10,201	1,596	15,420	1,519	14,968	..	457
Kistna ..	54	45,798	60	46,620	2,900	6,039	2,935	6,542	2,963	51,837	2,995	52,161	1,324	..
Kurnool, East ..	63	45,668	67	47,722	2,761	5,235	2,937	6,718	2,824	51,003	3,004	54,430	2,577	..
Do. South ..	113	84,423	113	84,743	8,504	11,298	8,435	11,155	8,617	95,721	8,551	95,898	177	..
Do. West ..														
Total ..	757	3,09,976	738	3,12,512	26,683	63,086	27,374	69,087	27,440	3,79,062	28,112	3,81,592	2,637	..
Central Circle.														
Direction ..	51	61,758	48	51,213	370	2,871	845	2,256	370	2,871	845	2,256	..	615
Bellary ..	35	51,953	34	51,953	2,784	17,600	2,932	5,476	2,819	68,563	2,596	57,423	..	9,957
Anantapur ..	23	10,116	33	11,247	2,652	5,728	2,900	5,713	2,678	15,344	2,928	16,960	1,116	12,124
Guntūr ..	55	26,264	49	21,255	1,412	3,677	1,624	3,973	1,547	30,792	1,673	25,227	..	5,565
Cuddapah, North ..	43	16,705	48	22,380	865	4,431	872	5,722	911	21,157	920	28,102	6,945	..
Cuddapah, South ..	24	5,546	36	5,670	1,729	5,067	2,018	6,895	1,753	10,613	2,054	12,565	1,952	..
Cuddapah, West ..	53	32,168	57	34,448	45,815	21,861	53,326	35,345	45,972	65,029	56,333	62,788	4,764	..
Nellore ..	23	9,077	24	9,525	1,616	2,360	2,760	3,463	1,533	12,637	2,784	12,987	952	..
Chingleput ..	44	22,472	43	23,084	2,705	5,204	3,491	8,658	2,752	27,676	3,634	31,742	4,066	..
Chittoor ..	..	..	..	..	631	933	626	1,253	634	923	695	1,253	340	..
Vernacular Training School ..	357	2,37,930	367	2,30,782	63,743	92,633	73,937	91,619	64,173	3,30,547	77,334	3,22,401	..	8,146
Southern Circle.														
Direction ..	42	22,482	37	21,833	1,650	4,490	1,472	4,230	1,702	26,972	1,509	26,163	..	809
Vellore, North ..	36	25,397	41	32,352	2,077	5,355	2,046	5,206	2,113	31,362	2,087	37,568	6,296	..
Do. South ..	19	16,627	19	15,752	1,170	6,420	2,233	6,448	1,192	23,017	2,302	22,200	..	817
Do. West ..	32	19,512	31	22,440	1,634	3,287	1,533	3,283	1,666	22,800	1,664	25,724	2,929	..
South Arcot ..	130	99,583	116	61,024	2,911	8,834	3,022	9,746	3,041	1,08,422	3,138	70,840	..	37,582
Salem, North ..	57	38,032	56	34,162	3,019	6,545	3,038	7,221	3,076	44,977	3,094	41,383	..	3,594
Do. South ..	35	19,337	29	22,456	2,936	9,270	3,187	8,550	3,002	28,207	3,206	31,316	3,109	..
Trichinopoly ..	109	82,279	113	95,517	3,219	5,134	3,225	6,217	3,328	68,118	3,338	1,01,733	13,621	..
Madura ..	109	53,507	110	52,726	1,851	4,069	1,787	3,728	1,860	57,516	1,897	56,454	..	1,062
Tinnevely ..	..	..	..	..	260	1,733	257	1,593	260	1,733	257	1,593	..	140
Working Plans ..	..	..	..	..	827	2,314	907	2,146	827	2,314	907	2,146	..	168
Vernacular Training School ..	570	3,76,962	562	3,58,348	21,782	60,670	23,042	60,407	22,352	4,37,652	23,604	4,18,755	..	18,877
Western Circle.														
Direction ..	1	Rs. 41	1	Rs. 60	386	4,787	401	4,701	387	4,830	402	4,761	..	69
Mangalore, North ..	41	24,583	42	25,930	926	4,204	944	4,249	967	23,787	986	30,179	1,392	..
Do. South ..	28	14,433	26	14,433	1,182	4,282	1,171	3,957	1,208	18,715	1,197	18,390	..	325
Malabar, North ..	80	47,731	85	47,987	3,005	4,733	2,935	4,457	3,055	52,464	3,018	54,444	..	20
Do. South ..	56	42,289	55	40,597	1,685	5,558	1,804	6,090	1,741	47,445	1,838	46,487	..	1,358
The Nilgiris ..	72	47,796	73	42,653	2,375	11,449	2,309	10,457	2,450	59,246	2,373	53,115	..	6,130
Kollegal ..	33	17,907	33	16,130	1,135	5,177	21,175	5,579	21,169	24,084	21,208	21,709	..	2,375
Coimbatore, North ..	76	62,099	75	88,129	3,043	10,683	3,186	9,563	3,113	72,782	3,261	97,692	24,910	..
Do. Central ..	55	19,963	68	23,457	1,795	6,977	1,702	7,477	1,851	26,830	1,770	30,934	4,054	..
Do. South ..	71	41,223	72	40,467	6,006	8,574	24,119	21,034	6,077	49,907	24,191	61,531	11,564	..
Veterinary Training School ..	..	..	..	..	387	1,855	459	2,124	387	1,855	459	2,124	..	..
Working Plans Office ..	..	..	..	..	90	1,158	79	1,461	90	1,158	79	1,461	363	..
Forest Engineer ..	..	..	..	..	415	(a)	436	(a)	415	(a)	436	(a)	..	..
Total ..	512	3,18,097	528	3,39,648	42,434	70,525	60,710	81,179	42,946	3,88,622	61,238	4,20,827	32,205	..
Grand total, Presidency.	2196	12,42,095	2195	12,41,290	169,642	292,917	188,113	302,292	156,911	15,35,863	190,308	15,43,532	7,719	..

* Difference between the closing balance of 1917-18 and the present opening balance is due to the adoption of correct figures furnished by the District Forest Officer.
† Decrease due to transfer of certain buildings to West Cuddapah in 1917-18 which were not deducted previously.
‡ Revised figures furnished by the District Forest Officer. The stores relating to Forest Engineer are not included in this Circle return as the same are shown in the Western Circle return.
§ Revised figures furnished by District Forest Officers.
|| Last years figures was a mistake.
|| Includes 19,200 bricks.
(a) Value is not given.

Government of Madras

REVENUE (SPECIAL) DEPARTMENT.

G.O. No. 2293, 11th December 1919

Forest Administration Report

Reviewing the — for the year 1918-19 and for the quinquennium ending with that year.

Read—the following paper :—

Letter—from the Hon'ble Mr. S. Cox, Chief Conservator of Forests.
To—the Secretary to Government, Revenue (Special) Department.
Dated—Madras, the 17th November 1919.
No.—52 Forests.

I have the honour to submit the progress report of forest administration of the Madras Presidency for the year ending 30th June 1919. A summary of the progress made in forest administration in the Presidency during the quinquennium ending with the year 1918-19 is appended.

2. *Alteration in area.*—Some 7 square miles mostly in *Nellore, Trichinopoly, North Malabar, South Malabar* and *South Coimbatore* were constituted reserved forests during the year, and in pursuance of the policy recommended by the Forest Committee of abandoning small and isolated reserves, about 91 square miles were disafforested in *Kurnool, South Arcot, Chittoor* and other districts. There was a decrease of 39 square miles due to the adoption of Survey of India figures in *Trichinopoly* division and of about 2 square miles by rectification of boundaries in several isolated forest areas. A net result of these changes was a decrease of 125 square miles in the total area of reserved forests, which stood at 18,712 square miles at the close of the year.

Certain forest lands in *Guntūr* and *Anantapur* suitable for colonization were disafforested and assigned for Indian soldiers who had distinguished themselves in the war.

The area of reserved lands rose from 668 to 682 square miles. About 83 square miles chiefly in the Agency tracts of *Godāvari* and in *Nellore* were notified under section 4 of the Forest Act. Over 7 square miles were notified under section 16 and nearly 62 square miles of Sandur leased forests in *Bellary* were handed over to the Darbar during the year.

3. *Forest Settlement.*—As in the previous year, Forest settlement work was carried out by Revenue Divisional officers. Out of a total area of 496 square miles which awaited settlement at the close of the year, the Northern Circle alone accounts for an area of 418 square miles consisting of three large blocks in the two *Godāvari* divisions. The final notification in respect of *Peddamedisilernu* block (96.48 square miles), one of the two blocks which were expected to be ready for publication during 1918-19, was received after the close of the year, and submitted to Government for approval. The question of further forest reservation and the general management of the forests in the Rampa Agency of the *Godāvari* district was under the consideration of Government during the year; and steps are being taken to reserve some of the still valuable unreserved sal areas in *Ganjām*. A special Deputy Collector has been appointed for six months for the reservation of about 30 square miles of unreserved forests in the Attur taluk of the *North Salem* division; and about 24 square miles of unreserved forests are awaiting settlement in *South Salem* division.

4. *Demarcation.*—About 118 miles of forest boundaries were newly demarcated during the year chiefly in the divisions of *Kurnool East, Bellary, Salem North* and

PART II.

Statement of elephants gone off the list during the year 1918-19.

District.	Names.	When purchased or otherwise obtained by Government.	Age.	How disposed of.
<i>Northern Circle.</i>				
Vizagapatam.	Ethel ..	Captured on 13th April 1895 in North Malabar and transferred from the Western Circle on 3rd December 1897.	54	Transferred to the Agency Department, G.O. No. 1660, Home (Judicial), dated 17th July 1918.
<i>Central Circle—Nil.</i>				
<i>Southern Circle—Nil.</i>				
<i>Western Circle.</i>				
Mangalore, South.	1. Halima ..	Captured on 3rd July 1918 ..	51	Sold.
	2. Arabi ..	Do. 30th July 1918 ..	3	
	3. Gowri ..	Born on 12th September 1916 ..	2½	
Malabar, North.	1. Nethravathi ..	Captured on 21st February 1905 ..	21	Temporarily transferred to Malabar, South.
	2. Ranger ..	Do. 17th March 1903 ..	24	
	3. Destejehan ..	Born on 3rd February 1902 ..	17	
	4. Countess ..	Captured on 5th June 1910 ..	23	Transferred to The Nilgiris in September 1918.
	5. Parvathi ..	Born on 2nd November 1916 ..	2	
	6. Desaraj ..	Do. 8th May 1917 ..	2	
	7. Savitri ..	Captured on 3rd April 1918 ..	5	Shot having broken her thigh bone.
	8. Champagani ..	Do. 4th April 1918 ..	14	
	9. Kabini ..	Do. 10th January 1919 ..	30	
Malabar, South.	1. Ranger ..	Captured on 17th March 1906 ..	24	Retransferred to Malabar, North, in August 1918.
	2. Destejehan ..	Born on 3rd February 1902 ..	17	
	3. Basia ..	Do. 3rd July 1899 ..	20	
	4. Desaraj ..	Do. 8th May 1917 ..	2	Retransferred to The Nilgiris in January 1919.
	5. Padmini ..	Captured on 10th February 1896 ..	49	
	6. Caesar ..	Do. 12th February 1910 ..	15	
	7. Valmiki ..	Do. 12th May 1914 ..	12	Retransferred to The Nilgiris in August 1918.
	8. Drona ..	Do. 2nd	12	
	9. Kamala ..	Do. 3rd February 1912 ..	26	
	10. Kamalshi ..	Do. 11th April 1914 ..	22	Transferred to The Nilgiris in August 1918.
	11. Noreh ..	Do. 12th March 1906 ..	21	
	12. Hector ..	Do. 13th April 1906 ..	19	
	13. Baker Ali ..	Do. 10th May 1911 ..	18	Sold.
	14. Mari ..	Do. 20th March 1903 ..	22	
	15. Togo ..	Do. 19th June 1905 ..	16	
	16. Shanker ..	Do. 21st May 1907 ..	16	Died.
	17. Perseus ..	Do. 18th December 1917 ..	7	
	18. Cambrai ..	Do. 7th April 1918 ..	7	
	19. Satyabhama ..	Do. 13th May 1914 ..	34	Died.
	20. Pankajam ..	Do. 18th September 1918 ..	6	
	21. Nurmahal II ..	Do. 28th September 1917 ..	28	
	22. Port Arthur ..	Do. 30th January 1905 ..	17	Temporarily transferred to Malabar, South.
	23. Gordon ..	Captured in February 1889 ..	39	
	1. Padmini ..	Captured on 10th February 1896 ..	49	Temporarily transferred to Malabar, South.
	2. Krishna ..	Do. 30th March 1916 ..	18	
	3. Rolly ..	Do. 17th April 1916 ..	17	
	4. Mathava ..	Do. 12th March 1906 ..	16	Permanently transferred to Malabar, South.
	5. Hector ..	Do. 13th April 1906 ..	19	
	6. Shanker ..	Do. 21st May 1907 ..	16	
	7. Caesar ..	Do. 12th February 1910 ..	15	Sold.
	8. Kamalshi ..	Do. 11th April 1914 ..	22	
	9. Jhelum ..	Do. 27th June 1902 ..	29	
	10. Droupadi ..	Do. 11th April 1914 ..	37	Died.
	11. Godavari ..	Do. 12th March 1905 ..	33	
	12. Baghirathi ..	Born on 24th December 1916 ..	2	
	13. Nawab ..	Do. 22nd November 1916 ..	2	Died.
	14. Savitri ..	Captured on 3rd April 1918 ..	5	
	15. Parvathi ..	Born on 2nd November 1916 ..	2	
	16. Desaraj ..	Do. 8th May 1917 ..	2	Shot dead.
	17. Laesie ..	Captured on 18th April 1907 ..	18	
	18. Indravathi ..	Do. 31st July 1917 ..	13	
	19. Cambrai ..	Do. 7th April 1918 ..	7	Died.
	20. Devaki ..	Do. 26th August 1918 ..	33	
	21. Gowri ..	Do. 23rd December 1919 ..	2	
	22. Fakir ..	Do. 22nd May 1917 ..	14	Died.

Statement of elephants gone off the list during the year 1918-19—cont.

District.	Names.	When purchased or otherwise obtained by Government.	Age.	How disposed of.
<i>Western Circle—cont.</i>				
Coimbatore, Central.	1. Srinivasan ..	Captured on 4th February 1918 ..	9	Transferred to Coimbatore, South.
	2. Kalyani ..	Do. 26th February 1918 ..	7	
	3. Abdul Rahiman ..	Do. 7th April 1900 ..	38	
	4. Kunju ..	Do. 16th March 1897 ..	27	
	1. Nurjehan ..	Captured on 22nd November 1917 ..	21	Sold.
	2. Rani ..	Do. 19th January 1918 ..	36	
	3. Sarada ..	Do. 12th .. 1918 ..	4	
	4. Janaki ..	Do. 20th August 1918 ..	1	
	5. Menaka ..	Do. 18th September 1918 ..	2	Transferred to The Nilgiris.
	6. Gopalan ..	Do. 18th	1	
	7. Leela ..	Do. 18th	1	
	8. Amir ..	Do. 24th October 1918 ..	2	
Coimbatore, South.	9. Ramachandran ..	Do. 14th November 1918 ..	1	Transferred to Malabar, South.
	10. Devaki ..	Do. 20th August 1918 ..	33	
	11. Poonachi ..	Do. 8th April 1918 ..	31	
	12. Srinivasan ..	Do. 4th February 1918 ..	9	
	13. Kalyani ..	Do. 26th	7	Died.
	14. Nurmahal II ..	Do. 28th September 1917 ..	28	
	15. Pankajam ..	Do. 18th September 1918 ..	6	
	16. Lakshmi ..	Do. 8th April 1918 ..	26	
	17. Tusher (unnamed) ..	Do. 3rd April 1919 ..	5	Killed by a tiger.
	18. Sekaran ..	Born on 18th August 1918 ..	2	

Madura, against 60 miles in the previous year. Four hundred and eighty-six miles remained to be demarcated at the close of the year principally in the districts of *Trichinopoly*, *South Mangalore*, *Kollegal* and *North Coimbatore*. The length of old boundaries repaired during the year was 17,368 against 17,996 miles in the previous year. The revision of boundary between the *Nilgiri* and *Coimbatore* districts, referred to in the last year's report, was completed and the draft notification describing the boundary was received from the Collector of the *Nilgiris*. The work of verifying and demarcating forest boundaries in the *Nilgiris*, postponed by Government in their Order Mis. No. 2491, Revenue, dated 2nd July 1918, was resumed during the year.

5. *Survey*.—The Survey of India continued its operations on a small scale in the *Nellore* division and about 12 square miles were surveyed on the two-inches to a mile scale.

6. *Working-plan*.—Working-plans covering an area of 191 square miles were sanctioned during the year, against 273 square miles in the previous year. The total area under working-plan sanctioned by the Board of Revenue up to the end of the year under report is reported to be 8,312 square miles. Revised working-plans covering an area of 1,718 square miles were under preparation by District Forest Officers. There are still over 6,000 square miles of forests for which no working-plans have been prepared and an almost equal area of forests for which existing working-plans are out of date, defective or merely provisional. No real progress in the preparation of scientific working-plans is possible at present for want of experienced officers; but whenever officers are available for the purpose, some progress in revising existing plans is being made. For instance, Mr. Minchin has been engaged since 1916 in preparing a new working-plan for the Gumsur forests; Mr. Wood submitted during the year under report, a revised working-plan for the Mount Stuart forests; and Mr. Bourne completed the field work of his revised working-plan for the Nilambur Teak Plantations which will be submitted as soon as the Forest Map Officer at Debra Dun can undertake the preparation of the working-plan maps. Apart from these important plans a certain amount of revision of temporary working plans has been carried out by the Divisional Forest Officers.

7. *Communications and buildings*.—The present system of carrying out road and building works under a five-years' scheme was abandoned as unworkable. The outlay on roads and bridges decreased from Rs. 1.55 lakhs to 1.47 lakhs while that on buildings rose from Rs. 1.16 lakhs to Rs. 1.34 lakhs, but all expenditure was kept as in the previous year within the lowest limits. A road from the plains to the Komattiyeri on the Javadi Plateau (the Gillman road) constructed at a cost of Rs. 1,20,300, was opened during the year, and on the same hills some progress was made on the construction of the Amerdi-Nadanur Ghaut road at a cost of Rs. 17,323. Plans and estimates for the Tekkadi scheme tramway to open up the Mount Stuart forests were submitted to Government for sanction but were returned for revision. Revised plans and estimates amounting to over Rs. 10 lakhs have since been received from the Forest Engineer and are now under scrutiny. The financial aspects are so doubtful that there is some probability of the scheme in its present form being abandoned.

8. The outturn of work by the present bullock-power tramway in the Tekkadi forests was 8,941 ton miles against 9,584 ton miles in the previous year. The working resulted in a loss of Rs. 8,306 against a profit of Rs. 6,234 in the previous year; but, as the Conservator, Western Circle, states in his report, the figures mean little or nothing in the absence of a capital account, for no business firm would charge against annual current working expenses the cost of building a bridge or the purchase of plant.

9. *Miscellaneous works*.—The expenditure under this head increased from Rs. 8,514 to Rs. 10,466. The chief works consisted as usual in the construction and repair of tanks and wells. On the Javadis well-boring operations were carried out at five places and a protected draw well at Muthanur on the Yelagiris was under construction.

10. *Forest offences*.—The following table shows the forest offences of all kinds reported during the year. It will be seen that the total of new cases is 931 less

than in the preceding year and 2,528 less than the average of the three preceding years:—

	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total.		Average of the three years ending 1917-18.
	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	1917-18.	1918-19.	
Cases taken to court ..	44	37	4,565	4,866	1,631	2,010	306	375	6,546	7,038	6,760
Cases compounded ..	69	68	12,775	11,776	4,898	5,081	839	800	18,881	17,725	19,761
Cases undetected ..	1,474	924	408	328	60	78	22	17	1,964	1,347	2,167
Total ..	1,587	1,029	17,748	16,770	6,589	7,169	1,167	1,192	27,091	26,160	28,688

A large variety of reasons is given by local officers to account for increases and decreases, such as disafforestation, introduction of panchayat management of village forests, favourable season, unfavourable season, improved work of subordinate staffs, etc. The reason quoted in support of increase of offences in one division is sometimes quoted as a reason for decrease in another; and on the whole there is no evidence why a general decrease has occurred in the Presidency figures as a whole. A probable cause, not however, mentioned in any of the reports, is the fact that, as years go by, the villagers become used to forest restrictions and are less inclined to kick against the pricks.

11. Unauthorized felling as usual forms the largest head of forest crime in all the circles, Southern Circle contributing 41 per cent of the total. Grazing cases increased in all the circles and notably in the Central Circle, which contributed 50 per cent of the total number of offences under this head. They were most numerous in the districts of *Guntur*, *Nellore* and *Chittoor*.

12. The percentage of cases taken to court, compounded and undetected were 27.10, 67.75 and 5.15, respectively, against 24.16, 68.59 and 7.25 respectively in the previous year. The total number of cases disposed of by Magistrates slightly rose from 6,671 to 6,867. Of these 6,352 or nearly 92.50 per cent ended in conviction against 91.66 per cent in the previous year. The fact that conviction in all but a small number of cases was obtained is satisfactory. The punishments awarded by Magistrates were generally adequate in all divisions except *Gōdāvari Upper*, *Kurnool West*, *West Vellore*, *Salem*, *West Ouddapah*, *Mangalore North* and the *Nilgiris*.

13. The total number of cases compounded was 14,541 and the compensation fees realized amounted to Rs. 1,56,694 against Rs. 1,72,932 in the previous year. The average compensation fee per case was Rs. 10-12-5 against Rs. 10-0-9 in the previous year.

14. The rules sanctioned by Government in G.Os. No. 1990, Revenue, dated 13th June 1910 and No. 8958, Revenue, dated 14th December 1910, for the guidance of Forest Officers in compounding offences are reported to have been generally observed.

15. Rewards amounting to Rs. 592 were granted to informers and subordinates against Rs. 1,122 granted in the previous year. The Nilgiri Game Association paid Rs. 88-4-0 to subordinates for detecting cases of poaching.

16. *Fire protection*.—The system of fire protection continued to be the same as in previous years. The total area over which special protection was attempted was 7,207 square miles against 7,142 square miles in the previous year. Five hundred and thirty-two square miles of the area so protected is reported to have been burnt, the percentage of failure falling from 9.7 to 7.4 per cent. The figures are however of little value owing to the difficulty of estimating the area burnt in such districts as *Kurnool* or *Upper Gōdāvari*. Instances of deliberate incendiarism occurred in the districts of *Kurnool*, *Bellary*, *North Ouddapah* and *Tinnevely*. In some cases reserves were closed to grazing as a punishment for fires while in others, grazing fees were enhanced or the privileges of free removal of grass withdrawn. The whole question

decrease in the Central Circle on account of cessation of the departmental hay operations during the war. Expenditure was kept within the lowest limits throughout the year owing to the war.

The expenditure under 'B. Establishments' increased from Rs. 15.85 lakhs to Rs. 17.01 lakhs as the result of war allowance paid to Forest subordinates and to additional establishments sanctioned on the temporary scale in the Central Circle. The net surplus amounted to Rs. 17.85 lakhs.

24. *Research and experiments.*—The only research work undertaken was connected with the causes and incidence of the spike disease of sandalwood, on which Mr. Hearsey, Extra Assistant Conservator of Forests, was employed throughout the year.

The question of whether this officer should continue his investigations was considered by the Board of Revenue at the end of the year and in connexion with a report on the subject submitted by me after the close of year is now under the consideration of Government.

Under the orders of the Board of Revenue, the Director of Agriculture instructed the Government Entomologist to carry out experiments in lac cultivation on *Butea*, *Zizyphus* (*Jujuba*) and *Pterocarpus* trees in the Sadivayal valley of the Central Coimbatore division. The result of the experiments made has not yet been reported. Attempts to inoculate *Zizyphus* and *Butea frondosa* trees with lac were continued in the West Kurnool and Central Coimbatore divisions. The experiments were successful to the extent that a few trees were impregnated. The cultivation of lac is a cottage industry demanding the almost undivided attention of families trained in the proper methods. As a suitable employment for hill tribes such as the Chenchus or Sholagars the experiment has no prospect of success. If the experiments are to be continued it is desirable to introduce some families of lac cultivators from Central India.

25. *Administration.*—The following officers were in charge of the Forest Administration during the year:—

The Hon'ble Mr. M. E. Couchman from 1st July 1918 to 6th December 1918.

Mr. J. M. Turing from 23rd December 1918 to 22nd January 1919.

The Hon'ble Mr. N. E. Marjoribanks from 23rd January 1919 to 28th March 1919.

The Hon'ble Mr. L. T. Harris from 29th March 1919 to 31st May 1919, and

The Hon'ble Mr. S. Cox, who was appointed to the newly created post of the Chief Conservator from 1st June 1919 to the end of the year.

Mr. Couchman visited eight forest divisions and wrote notes of his inspection in the case of Cuddapah, Kollegal, North Coimbatore and Kistna divisions. Mr. Marjoribanks visited Kurnool and Chittoor.

Mr. G. S. Hart, C.I.E., Inspector-General of Forests, visited Ganjam, South Malabar and the Nilgiri divisions. In the course of his tour he dealt with the important questions of the future management of the Ganjam sal forests; with the extension of the teak plantations and treatment of the natural forests in the Nilambur valley; with the methods of restoration of the Mudumalai forests; and with the extension of Eucalyptus plantations and introduction of hard woods on the Nilgiri plateau. He also visited Madras and discussed with Government various questions connected with the Forest Services and the appointment of a Chief Conservator.

Mr. H. A. Latham was in charge of the Northern Circle for the first half of the year and Mr. S. Cox who succeeded him till the end of May 1919. Mr. C. M. Hodgson held charge during the last month of the year. Mr. H. B. Bryant was Conservator of Forests, Central Circle, from 1st July 1918 to 2nd January 1919, Mr. H. F. A. Wood from 3rd January 1919 to 17th June 1919 and Mr. A. B. Jackson for the rest of the year. The charge of the Southern Circle was held by five officers for the period noted against them, Mr. P. M. Lushington from 1st July 1918 to 9th October 1918, Mr. H. F. A. Wood from 10th October 1918 to 30th December 1918, Mr. H. A. Latham from 31st December 1918 to 16th May 1919, Mr. A. B. Jackson from 17th May 1919 to 16th June 1919 and Mr. H. A. Latham for the rest of the year. Mr. C. D. McCarthy held charge of the Western Circle till 11th May 1919, when

he was succeeded by Mr. H. Tireman who was in charge for the rest of the year. All the District Forest offices except those of the two divisions of Godavari, Kistna, Guntur, Bellary, Anantapur and North Malabar were inspected by the Conservators of Forests during the year. Of the three excepted divisions in the Central Circle, the lastnamed two were inspected after the close of the year. The Board of Revenue received the Conservators' inspection notes on the forests of Vizagapatam, South Kurnool, Chingleput, Vinukonda range of Guntur division, Cuddapah, Mamundur forests of Chittoor, Madura, Tinnevely, Mangalore North, fuel-working circles of Mettupalaiyam and Thadagam ranges and Dhone reserves in Central Coimbatore division. All the Conservators of Forests and all District Forest officers except those of Kurnool East and South, Anantapur, Guntur, Chingleput, South and West Vellore, North Salem, Tinnevely, South Malabar and the Nilgiris spent an adequate number of days in touring, and such short touring as occurred was almost entirely due to changes in personnel. All the range offices except one in Kurnool-East, one in Guntur, two in Vellore, one in Chingleput, one in Tinnevely, one in the Nilgiris, one in North Coimbatore and one in South Coimbatore were inspected by the District Forest officers. The accounts of all except eight of the District Forest offices were inspected by the auditors of the Accountant-General's office and the results were reported to be generally satisfactory.

26. *Forest panchayats.*—A review on this subject is being separately submitted to Government.

27. *The Chenchus.*—The somewhat optimistic view expressed in the Board's Administration report of 1917-18 with regard to the settlement of the Chenchu problem was unfortunately not borne out by the facts. Owing to a number of factors, such as rise of prices, food scarcity in the Nallamalais almost amounting to famine, failure to provide suitable permanent work, want of provision for the maintenance of the women and children at the Gudems, and general absence of sufficient control during a particularly difficult period, the Chenchus got out of hand and were responsible for a great deal of crime. The Special Chenchu officer never relaxed his devoted efforts on behalf of this unfortunate tribe and did all that could be done at the cost of his health and in most disheartening and difficult conditions. But circumstances were too strong for him and many of the best-behaved Chenchus were led away by the badmashes of the tribe to a life of theft and dacoity.

Since the close of the year the whole Chenchu question has been examined by Mr. G. F. Paddison, Protector of depressed classes, the Collector, the Conservator, the District Forest officer, Mr. Saunders and myself; and as the result of our tour of inspection of the most troublesome Gudems fresh proposals have been submitted to Government.

28. *Miscellaneous.*—The reorganization of the subordinate Forest staff was sanctioned by the Secretary of State during the year under report but was not brought into force until the current year.

The recommendations of the Public Services Commission with regard to the Imperial and Provincial Forest Services were communicated with the Government of India's views to the Madras Government during the year; and a Committee of Forest officers consisting of Mr. R. D. Richmond, Mr. Venkataramana Ayyar and the undersigned was appointed to report on the subject for the information of Government through the Board of Revenue. Their report together with that of the Board was submitted in January 1919.

29. *Forest charges.*—The headquarters of the Southern Circle was transferred from Trichinopoly to Salem in December 1918. As most of the small reserves of Trichinopoly and South Arcot divisions were earmarked for disafforestation, a rearrangement of divisions was rendered necessary and the formation out of the revenue districts of North Arcot, South Arcot and Salem of six forest divisions, viz., South Vellore, West Vellore, North Salem, Central Salem, East Salem and South Salem was proposed by the Board of Revenue, and sanctioned by Government after the close of the year.

30. Mr. P. M. Lushington, Conservator of Forests, retired from service during the year, and with him left the last of the Imperial officers serving in the Madras Presidency who had been educated at the Forest College at Nancy. Captain

of fire protection is complicated and difficult and the department has yet to find suitable measures by which the reasonable requirements of the graziers and of the jungle tribes can be met without permanent and progressive injury to the forests. Early burning of grass under departmental control appears, in some cases, a possible remedy but to be effective it involves very careful supervision and a considerable expenditure. The co-operation in fire protection of the hill tribes, wherever they are amenable to influence, continues to be a satisfactory feature of the administration, especially in *Ganjām*, *Vizagapatam* and on the Javadi hills. On the other hand, the Chenchus in *Kurnool* are responsible for burning immense areas of forest, and fire protection in the *Upper Gōdāvari* division was very unsuccessful. In addition to the specially protected areas, ordinary protection is reported to have been extended to 8,787 square miles of forest, all of which except about 200 square miles were successfully protected. As remarked by the Board of Revenue last year, the reliability of such figures is open to great doubt.

17. *Grazing*.—Of the total area of forests in the Presidency, about one-fourth was closed to grazing either wholly or for portions of the year. To the open area of nearly 14,000 square miles of forest, permits were issued for the grazing of 2,117,523 animals. The revenue derived amounted to Rs. 8.24 lakhs. The above figures suggest an average incidence of 4½ acres of grazing to each animal, in itself a very small allowance under Indian conditions; but owing to the fact that the open areas contain large tracts of forests to which cattle are not driven or driven only in small numbers, the actual grazing incidence in the majority of grazing grounds is far heavier. To deal satisfactorily with this demand is one of the chief problems of the department. Grazing requires to be better regulated and its incidence to be reduced gradually both for the sake of the better class of cattle and in the interests of fuel production, when the demand for the latter is insistent. Jungle grasses in the grazing grounds are eaten down by herds of village cattle before they have time to mature or spread and the trampling of cattle has a serious effect on fuel production. Attempts were made during the year to introduce into the neighbouring districts of *Guntūr* and *Chingleput* the *kancha* system of grazing which is applied to a very large area of grazing grounds in the *Nellore* district. The chief features of the system are the closing of the grazing grounds until the grass crop has matured, the reservation of grazing to the more valuable cattle and the elimination of the sheep until the horned cattle have had the full benefit of the grazing. Subject to variations to suit local conditions, the same methods should be tried in other districts whenever there is a prospect of success.

A second reform in process of introduction during the year under review was the raising of the grazing license fee with a view to reduce the incidence of grazing and permit the more valuable cattle required for agriculture to benefit by the always limited forest resources. Owners of plough cattle would pay considerably more than the present charge if there was any assurance of their bullocks obtaining good grazing, free from risk of infection, for a portion of the year. The enhancement of grazing fees was sanctioned in a considerable number of districts, but in the majority of cases owing to the prospect of a bad season the introduction of the enhanced fees was postponed.

18. *Sylviculture*.—There is nothing of particular importance to mention under this head. Clear felling and artificial regeneration were carried out on the usual scale at *Nilambur* and somewhat spasmodic attempts in many districts were made to spread the cultivation of sandal, red-sanders and *Cassia auriculata*.

In future years the clear felling of high forest and concentrated regeneration of the area felled is likely to engage the department's energies to a much greater extent than hitherto. In order to study the problems connected with this method the post of a research officer as Sylviculturist was sanctioned and Mr. Barry has since taken up the post.

19. *Exploitation*.—(1) *Timber*.—Twenty-two thousand two hundred tons and 72,175 tons of timber were removed by departmental agency and by contractors, respectively, against 15,800 tons and 84,775 tons in the previous year. The increase in departmental removals occurred chiefly in the Western and Northern Circles. In the Western Circle 23,000 cubic feet of timber were supplied from *Malabar* and *South Coimbatore* divisions to the Indian Munitions Board for ship building and

about 26,000 cubic feet of miscellaneous species were supplied from *North Malabar* and *South Coimbatore* forests for the construction of piles, bridges and landing piers in Mesopotamia. Some 8,524 cubic feet of teak was delivered to Messrs. George Brunton & Co., Cochin, for the construction of a steamer, and a quantity of *Grewia tiliaefolia* logs was utilized by the Buckingham and Carnatic Mills Company, Limited, for the manufacture of tent poles for military use. A large quantity of teak was sold for building native crafts, and sal sleepers and scantlings were supplied from *Ganjām* to the Munitions Board and to the Public Works.

(2) *Fuel*.—Thirty-two thousand two hundred tons and 422,775 tons of fuel were removed departmentally and by contractors, respectively, against 26,775 tons and 534,550 tons in the previous year. The quantities would have been larger had not the sale of coupes been affected by the shortage of railway wagons.

(3) *Bamboos*.—During the year the value of bamboos sold was Rs. 2,76,655 against Rs. 3,12,485 in the previous year, the decrease being probably due to the absence of wagons and the uncertainty of the season. The value of bamboos extracted departmentally increased by Rs. 18,354. The chief centres of departmental collection were *Kurnool West* with the object of providing employment for the Chenchus and *South Malabar* for departmental timber operations.

(4) *Sandalwood*.—In the auction sales held at *Satyamangalam* in the Western Circle in December last, 219 tons of sandalwood were sold for Rs. 2,81,237 and in the sales held at *Tiruppattūr* and *Vellore* 213 tons were sold for Rs. 3,03,845. The average rate per ton was Rs. 1,280 and Rs. 1,421 in the Western and Southern Circles respectively. The total income realized during the year was Rs. 6,17,573.

(5) *Hay*.—Four thousand six hundred and ninety-eight tons of hay were supplied departmentally to the Military Farms Department (9th Secunderabad) Division and a sum of Rs. 1,41,426 was credited to the department, while 6,156 tons of hay were removed by the Military Farms Department on payment of Rs. 12,321.

(6) *Tanning stuffs*.—The collection of tanning bark was continued under the agency of the Munitions Board. The total quantity collected was 56,917 candies. The current year's rentals were Rs. 4,77,643-3-8 and the department obtained credit for Rs. 2,62,488, thus sacrificing a revenue of over two lakhs, in accordance with the arrangement under which the department was credited with the average receipts derived from the sale of *Cassia auriculata* and other tanning barks during the five years preceding the year.

20. The value of minor produce extracted by departmental agency and by purchasers amounted to Rs. 1.69 lakhs and Rs. 18.76 lakhs, respectively, and decreased by Rs. .33 lakh and Rs. .65 lakh during the year under report. The value of removals under both the heads decreased by Rs. 2.21 lakhs in the Central Circle consequent upon the stoppage of departmental operations and other causes. This large decrease was, however, counterbalanced by slight increases in the other circles, chiefly on account of war activities, such as the supply of hay, tanning stuffs and bees wax for military purposes.

21. The estimated value of forest produce removed by right holders was Rs. 36,699 against Rs. 52,225 in the previous year and the value of produce granted free amounted to Rs. 37,237 against Rs. 39,591 in the previous year.

22. *Financial results*.—The total gross revenue during the year amounted to Rs. 49.17 lakhs, a decrease of Rs. 4.99 lakhs over that of last year. The decrease was spread over all the circles, except the Western where the gross revenue increased from Rs. 14.69 lakhs to Rs. 17.17 lakhs. The increase in the latter circle was due to increased receipts under sandalwood, to the realization of the sale-proceeds of hay supplied to the Farms department in the previous year and to increased receipts under 'grazing' in the four divisions of *Coimbatore*. The decrease in the other circles was principally due to the assumption of control of tanning bark by the Munitions Board and to the restrictions of railway transport.

23. The total expenditure under 'A. Conservancy and Works' increased from Rs. 13.34 lakhs to Rs. 14.31 lakhs owing in the Northern Circle to the exploitation of timber in *Ganjām* for supply of sleepers and building materials and in the Western Circle to the increased felling of timber and bamboos and hay operations for supply to the Military Farms department. The increase was counterbalanced by a

Welchman who had held charge of the Parlakimedi forests for 11 years and had introduced forest conservancy among the Savara hillmen with conspicuous success died in hospital in Calcutta in April last. He is a great loss to the department. Among Imperial officers, Messrs. Cox, Foulkes, Wilson, Clear, Rigold, Dyson, Whitehead and Bennett were absent for all or for a greater portion of the year on Military service or other duty connected with the war; and Messrs. Cornwell, Hart, Mitchell, Mahony, Walpole, Ashe, Brand, Gaudoin and Woodhouse Adolphus of the Provincial Service were similarly employed. The department was throughout the year extremely short-handed in the higher ranks and officers had to be employed in charge of divisions without the knowledge or experience necessary to manage them satisfactorily. From the Conservators' reports it would appear with one or two exceptions that all officers did their best.

31. *Forest College.*—The College continued to work satisfactorily. Out of the 28 students who sat for the final examination two Government students won the honours certificate. Twenty students obtained the higher standard certificates and six the lower standard. While no student showed exceptional ability, the men at the bottom of the list were above the average and there were no failures. The final examinations in all the subjects were conducted by examiners from outside the staff of the College and the results were satisfactory.

The 1918-20 class started with 33 students and closed the year with 30. By the close of the first term three men who were found unfit to continue the training were removed.

The Inspector-General of Forests visited the College and the students of both the divisions at Nilambūr in December 1918.

32. *General rules under the Forest Act.*—The working of the timber and sandal-wood transit rules was generally satisfactory. The timber transit rules were extended to the whole of the *West Cuddapah* and *Chittoor* divisions. The people generally availed themselves of the privileges allowed by the rules under section 26 of the Forest Act and there were no complaints of any importance except in *Trichinopoly* where it is reported that much damage was done by felling and firing of unreserves for 'ponakad kumeri' cultivation on the hills.

33. *Improvement of water-supply in Government grazing grounds (G.O. No. 1622, Revenue, dated 4th June 1914).*—Two tanks each in *Gōdāvari Lower* and *Kurnool East* and one in *Kurnool South* were repaired and one well was sunk in *Kurnool East*. Expenditure under this head was not incurred in *Kistna* and *Kurnool West* owing to financial stress. In the three divisions of *Cuddapah* and in *Chingleput* ponds, wells and water sources were repaired. In *South* and *West Cuddapah* and *Nellore*, public-spirited ryots were permitted to repair some wells. In *North Vellore* one well and 215 bunds were repaired. Three tanks in *South Arcot* and one well in *Madura* were repaired. In *South Salem* and *Trichinopoly* 152 and 22 bunds respectively were repaired. In *South Vellore* investigations into the question of supply of good drinking-water on the Javadis by a system of tube wells were continued. Tube wells were constructed and pipes laid at Komattiyeri and were nearing completion at Mandaparai. Boring operations at Veerappanur were completed and an estimate for the laying of pipes was awaited from the Agricultural Engineer. The amount spent during the year on investigation and construction was Rs. 1,900. In *West Vellore* division a sum of Rs. 900 was spent on tube wells. Three departmental wells and seven village wells on the hills were repaired. Out of a grant of Rs. 1,000 made by the district board for improving the water-supply and sanitation of the Malayali villages, a small amount was spent, and more work could not be done owing to the difficulty of obtaining skilled labour on the hills.

34. *Opening of small coupes in the vicinity of villages for rural supply (paragraph 20 of G.O. No. 3020, Revenue, dated 13th October 1913 on the Forest Committee's report).*—Generally speaking fuel-coupes are opened whenever a contractor can be obtained to work them even in forest which on sylvicultural grounds should be closed to felling. If no contractor will undertake the felling it may generally be assumed that the demand is too small to be worth consideration.

35. *Patrol system (paragraph 22 (1) of G.O. No. 3020, Revenue, dated 16th October 1913 on the Forest Committee's report).*—The system was in force in all the divisions in

the Northern Circle except *Ganjām* and *Gōdāvari*, and was not uniformly successful. The beat *cum* gang system which was adopted in *Kistna* is reported to have worked fairly well. In the Central Circle the system was in vogue in three divisions of *Cuddapah* and in one of the ranges of *Chittoor* and is reported to have worked satisfactorily. In the Southern Circle the system was continued in *North Vellore*, *South Salem* and in one range in *Trichinopoly* and its working is reported to be unsatisfactory. In the Western Circle two new patrol sections were formed chiefly for patrolling sandal areas in *North Mangalore* division and a few cases were detected. In *Central Coimbatore* the system was a failure for want of reliable men.

36. *Conference.*—A conference was held in Madras by the Forest Commissioner with the Conservators of Forests in February 1919. Another conference was held at Coimbatore by the Chief Conservator with the Conservators of Forests on 28th and 30th June 1919. Messrs. A. A. F. Minchin and R. D. Richmond attended the Sylvicultural Conference held at Dehra Dun in October 1918. Mr. Cox attended the meeting of the Board of Forestry and the Lac Conference at Dehra Dun in March.

APPENDIX.

The following is a summary of the progress made in Forest Administration in the Madras Presidency during the quinquennium ending with the year 1918-19.

2. *Administrative control.*—The Forest Department was under the control of the Board of Revenue until the last month of the quinquennium when it was transferred to the control of the Chief Conservator of Forests.

3. *Changes in the controlling staff.*—The headquarters of the Southern Circle was transferred from *Trichinopoly* to *Salem* in December 1918. In order to concentrate the attention of the department on the more valuable forests of *Salem* and *North Arcot* divisions, the present revenue districts of *North Arcot*, *South Arcot* and *Trichinopoly* were rearranged into six forest divisions, viz., *South Vellore*, *West Vellore*, *North Salem*, *Central Salem*, *East Salem* and *South Salem*. *Cuddapah* was divided into three forest charges, designated *North Cuddapah*, *South Cuddapah* and *West Cuddapah*. The division of *South Kanara* into two forest charges, viz., *North Mangalore* and *South Mangalore* was also sanctioned by Government during the period and their sanction to form a fourth division in *Kurnool* was received after its close.

4. *Forest Administration.*—The work of the department during the period, which synchronised with the great war, has been handicapped by the necessity for economy but more seriously by the depletion of the staff. Eight officers of the Imperial and ten officers of the Provincial and subordinate staff joined the army and the Indian Defence Force made further claims on the time of most of the European and Anglo-Indian officers of the department. The officers who remained on duty were taxed not merely in carrying out their regular duties but in meeting the heavy calls made on them for supplies to the army. The department is the poorer by the loss by death on 26th May 1917 of Mr. H. F. Arbuthnot, Deputy Conservator of Forests, to whose energy the extension of the kancha system of grazing in *Nellore* was so largely due. In Mr. G. H. Welchman, Special Forest Officer of the Parlakimedi Malicha, who was appointed to the Indian Army Reserve of officers as Labour Commandant of the Savaras and Orivas and died in hospital at Calcutta on 17th April 1919, the department also lost a valuable officer.

5. The classification of forests according to the Forest Committee's recommendation has been practically completed during the quinquennium. During 1918-19, 197 reserves and 15 blocks of unreserves covering an area of 534 square miles were under the management of 363 panchayats. Mr. E. A. Davis, I.C.S., was on special duty from February 1915 to August 1916 for the purpose of accelerating the introduction of forest panchayats. The question of appointing a Special officer to supervise and promote the panchayat system is now under the consideration of Government.

6. The difficulty of dealing with the Chenchus, who have long been responsible for a great deal of forest and other crime in parts of *Kurnool*, prompted Government in December 1916 to appoint a Special officer, Mr. Saunders, Assistant Superintendent of Police, to secure the confidence of the tribe and to investigate methods of ameliorating their condition and of controlling them. During 1917, Mr. Saunders obtained an intimate knowledge of and influence over the Chenchus and although during 1918 they were more troublesome than ever before, the apparent want of success was due to a combination of adverse conditions, such as great local scarcity and high price of food-grains and absence of suitable permanent employment.

Much is now known about the Chenchus which was in doubt before, and although the problem appears thereby all the more difficult, future measures of control and improvement are likely to give better results.

Mr. A. W. Lushington, C.I.E., Retired Conservator of Forests, was employed on special duty in December 1916 to investigate the possibility of the commercial exploitation of the forests. The appointment ceased in January 1918. His experiments in the seasoning of

timber were not carried on long enough to justify any conclusion being drawn from them, but he did some excellent work in the valuation and the identification of species in the Western Ghaut forests. He is one of the very few who can identify the bewilderingly similar evergreen-trees of these forests.

The appointment of a Special officer of the Golconda Agency and Hill Madgole in the Vizagapatam district was sanctioned during the period, in order to conserve the forests in the catchment area of a number of hill streams.

Mr. F. J. Marshall was appointed Forest Engineer in 1914 with Salem as his headquarters and has been in charge of the most important engineering works in the Southern and Western Circles.

An important change of forest administration was effected in G.O. No. 260, Revenue dated 7th February 1916, which modified the position of the Collector and the District Forest officer. While recognizing the power and authority of the Collector as head of the district for the welfare of the community in general, the District Forest officer was declared to be the head of the Forest Department in his own district and the Conservator was made responsible for and given control over all professional, departmental and financial matters in his circle.

7. The war has revealed not only the undeveloped forest resources of the State but the necessity for Government itself undertaking the exploitation of its forests. Private firms cannot be expected nor are they willing to invest large sums of money in tramways, saw mills, machinery and roads together with the responsibility for and cost of regenerating the areas of forest exploited. It is essentially a matter for the State in this country as in others. Unfortunately the Forest Department at the outbreak of the war was under-staffed in all departments and for want of previous experience and essentials for forest working on a larger scale was unable to meet the enormous demands for timber. Whatever was possible was done and especially in the matter of tanning bark and hay valuable contributions were made.

8. *Organization.*—The period under report was marked by a sanctioned increase in the administrative staff which was augmented by ten Imperial and ten Provincial officers. Provision was also made for four additional Imperial officers for working plans and research work and for nine additional Provincial officers as their assistants. This increase of staff, so badly needed for future development, can only be given effect to gradually as officers are recruited and trained. In the meantime owing to retirements and deaths, the cadres are depleted to an abnormal extent and development of the department's work is rendered most difficult. During the last half year of the period the Secretary of State also sanctioned the reorganization of the executive and protective staffs of the Forest Department at a cost of three lakhs.

9. *Legislation.*—In consequence of the appointment of Chief Conservator of Forests as head of the Forest Department, the Madras Forest (Amendment) Act, 1919, was passed and received the assent of His Excellency the Viceroy.

10. *Changes in area.*—The area under control remained practically unaltered as shown below:—

	At the commencement of the period.	At the end of the period.
	SQ. MILES.	SQ. MILES.
Reserved forests	18,863	18,712
Reserved lands	802	682
Total	19,665	19,394

The slight difference in area noted above is due to disafforestation of reserves in pursuance of the recommendations of the Forest Committee.

11. *Forest settlement.*—Forest settlement work except in the Agency tracts is practically complete in the Presidency. There are about 500 square miles of forests awaiting settlement, mostly in the divisions of *Godavari* and *Salem*. A scheme for the further reservation of areas in the Rampa Agency has been formulated and is being carried out.

12. *Demarcation.*—The total length of artificially marked boundaries at the end of the quinquennium was 34,454 miles and is now 32,575 miles. The decrease is due to disafforestation of certain reserves and plantations, to rectification of errors at settlement and to the adoption of Survey of India figures.

13. *Surveys.*—About 336 square miles were surveyed by the Survey of India on the 2 inches scale chiefly in *Nellore* and *West Vellore* divisions. About 169 square miles were surveyed by the party on the 4 inches scale.

14. *Working-plans.*—During the quinquennium working-plans were in force for 8,312 square miles against 8,091 square miles in the previous quinquennium. The areas for which working-plans were newly sanctioned by the Board of Revenue during the period were considerably greater than 221 square miles, but owing to disafforestation of areas, cancellation of working-plans on account of the impossibility of carrying out their provisions, and in some cases the termination of the period covered by the working-plans, the net increase in the areas under working-plans does not show an appreciable increase.

15. *Communications and buildings.*—The average annual expenditure on communications, buildings and other works amounted to Rs. 2,77,595 during the period under review against Rs. 3,19,000 in the previous period. The fall in expenditure is due to the postponement of works on account of the war. Nearly a lakh of rupees was spent under these heads in the Southern Circle for the construction of roads on the Javalis. The period ended with a large accumulation of building and communication works approved of in principle but not carried out for want of funds and staff.

16. *Forest offences.*—The average annual number of forest offences rose to 28,933 from 28,500 in the previous period. Cases of injury to forests by fire and offences of unauthorized felling increased from 1,104 and 17,574 to 1,318 and 18,716 respectively. There was a very small increase in the number of other offences. Offences of unauthorized grazing fell from 8,634 to 7,722 during the period under review.

17. *Fire protection.*—The average area under systematic fire protection amounted to 16,060 square miles against 13,000 square miles in the previous quinquennium. The results of protection appear to remain fairly constant and the department has yet to find a satisfactory method of preventing fires in the large and inflammable hill forests of the drier zones.

18. *Protection from cattle.*—At the beginning of the quinquennium one-sixth of the total area of forests in the Presidency was closed to grazing. During the closing year of the period the area open to grazing was reduced to one-fourth of the total area of forests, and the incidence of grazing from 3,783,000 to 2,117,420 animals. The grazing revenue, however, increased somewhat owing to higher fees. The decrease in the number of animals grazed is mainly due to the final elimination of the goat. The average incidence during the last year of the quinquennium worked out to 4½ acres of grazing to each animal; but since areas open to grazing contain large tracts which are inaccessible to cattle or to which cattle are not driven in large numbers, the actual grazing incidence is often far heavier. Endeavours were made during the period to distribute the grazing more evenly, to provide facilities for watering cattle in the forests, and to reduce the incidence when the forests were being seriously injured by overgrazing. It is hoped by the gradual introduction of new methods such as the forest village system, the panchayat system and the kancha system to gradually interest the villager in the conservancy and improvement of the grazing grounds adjacent to his village.

19. *Field and outturn.*—The following statement shows the annual average outturn of the forests for the two periods:—

	Timber and fuel.	Bamboos in number or in value.	Minor produce in value.
1909-10 to 1913-14	C. FT. 26,551,000	NO. 40,306,000	RS. 15,30,000
1914-15 to 1918-19	25,151,000	RS. 3,11,727	15,42,632

The value of minor produce increased by about 12 per cent and is due mainly to high prices realized for tanning barks. In the absence of information as to the quantity of bamboos extracted by all agencies during the quinquennium under review, no comparison is possible during the present period and the one preceding it.

20. *Financial results.*—The average annual financial results of the last two periods were as follows:—

	Revenue.	Expenditure.	Surplus.
	RS.	RS.	RS.
Average for 1909-10 to 1913-14.	40,72,000	31,86,000	8,86,000
Average for 1914-15 ..	40,17,852	29,36,651	10,81,201
Do. 1915-16 ..	39,38,475	26,07,949	13,30,526
Do. 1916-17 ..	47,79,016	27,84,374	19,94,642
Do. 1917-18 ..	54,16,498	29,19,596	24,96,902
Do. 1918-19 ..	49,16,609	31,31,939	17,84,670
Total for the period 1914-15 to 1918-19.	2,30,68,348	1,43,80,509	86,87,839
Average for the period ..	46,13,000	28,76,000	17,37,000

Admitting the necessities of the war, the very degraded condition of a large percentage of the Madras forests and the absence of facilities for working the more remote and therefore better-stocked forests should otherwise forbid the accrual of these very large surpluses. If the forest property as a whole is ever to approach its full bearing capacity capital must be sunk in communications, buildings, machinery and plant and current revenue must be ear-marked for

increase in establishments and improved conservancy. The present annual depreciation of forest capital by fire alone must run into many lakhs of rupees and the failure of forest conservancy on very large areas of forest in the Cedod districts and elsewhere gives much cause for anxiety.

21. *Forest education.*—During the period under review, the Madras Forest College was transferred to its new site at Lawley Road, Coimbatore, where buildings and equipment have been provided at a cost of over 10 lakhs. The new buildings were opened on 14th October 1915 by His Excellency Lord Pentland who had himself laid the foundation stone in 1913. Students deputed by the Native States of Central India, Hyderabad, Travancore and Cochin and by the Governments of Bombay, the Central Provinces and Ceylon are admitted for training in the college. In all 135 students passed out of the college during the period under review; of whom ten obtained honours certificates, 100 the higher standard and 25 the lower standard certificates. Of these 84 were subordinates of the Madras Forest Department.

The four vernacular training schools (one for each circle) with a six months' course for the training of foresters and forest guards were held annually and were very successful in their object.

22. *Hill tribes.*—The co-operation of the hill tribes with the Forest Department was particularly successful on the Javadi Hills where the whole revenue administration was entrusted to the Forest Department and in the Agency tracts of the Northern Circars. During the quinquennium forest conservancy was started in Hill Madgole and in Rampa without friction. In the latter country no Forest officer had set foot for 25 years.

Order—No. 2293, Revenue (Special), dated 11th December 1919.

With his letter read above the Chief Conservator of Forests submits his report on the administration of the Forest Department for the year ending 30th June 1919 and a summary of the progress made in forest administration in the Presidency during the quinquennium ending with that year.

Forest No. 49.

The quinquennium synchronised with the great war and consequently war conditions hampered the activities of the department during the period. Strict economy was necessitated and all but the most urgent items of work were postponed. Apart from this the work of the department was handicapped more seriously by the depletion of the staff due to the absence of officers on military duty, to the demands of the Indian Defence Force and to the temporary cessation of recruitment for the Imperial Service. The officers who remained on duty were taxed not merely in carrying out their regular duties, but in meeting the heavy calls made on them for supplies to the Army of timber, tanstuffs and hay. The sanction obtained for augmenting the staff of the department in all its branches including Imperial, Provincial and subordinate services, at a total cost of over Rs. 5 lakhs per annum, could not be given effect to during the quinquennium owing to war conditions.

From the point of view of the ryot population the chief feature of interest in the quinquennium was the completion of the classification of the forests in accordance with the recommendation of the Forest Committee of 1912. In pursuance of this classification reserves which must be preserved for climatic purposes or for the protection of water sources, or which were valuable as producers of timber or fuel, have alone been retained in the management of the department. Forests which were unimportant from these points of view and which were mainly useful for grazing have been disafforested and wherever possible handed over to the management of forest panchayats. Endeavours have been and are still being made to distribute grazing more evenly, to provide facilities for watering cattle in the forests and to reduce the incidence of grazing by the gradual introduction of new methods such as the forest village system, the panchayat system and the kancha system, the underlying object of all of which is to interest the villager in the conservancy and improvement of the grazing grounds adjacent to his village.

During the quinquennium the war revealed the magnitude of undeveloped forest resources of the State and the necessity for their exploitation by Government. The question of the measures to be taken to profit by the lessons of the war will form an important feature of the programme during the current quinquennium.

2. The most noteworthy feature of the year was the appointment of a Chief Conservator of Forests and the transfer of the control of the department from the Board of Revenue to the Chief Conservator. The question of appointing a Chief

Conservator had engaged the attention of Government for a long time and sanction for the creation of the post was accorded by the Secretary of State at the end of 1917, but owing to the war effect could not then be given to it. On 1st June 1919 the Hon'ble Mr. Cox assumed charge of the office and the connexion of the Board of Revenue with the Forest Department which had subsisted ever since the creation of the department in its present form, came to an end.

Another matter of importance and one which is expected to produce substantial results was the appointment of a Forest Utilization Officer for the Presidency. It was becoming more and more apparent that forest officers in charge of divisions had neither the time nor the training necessary to enable them to undertake the exploitation of the forests in their charge on a commercial scale. The necessity for the appointment of an officer to attend solely to duties connected with the commercial side of forest development was brought to the notice of Government during the year and the sanction of the Secretary of State was obtained for the entertainment of a Forest Utilization Officer. Mr. Irwin who has been appointed to this post entered upon his duties after the close of the year and has already submitted several profitable schemes for the working of certain forests.

An officer to conduct forest researches with reference to local conditions was also appointed during the year but he entered upon his duties only after the close of the year.

The appointment of Forest Engineer which had been temporary since 1914 was made permanent.

3. Towards the close of the year the sanction of the Secretary of State was received for the reorganization of the executive and protective staffs of the department and partial effect was given to this sanction with effect from 1st October 1919. The number of subordinates, which had long been recognized as inadequate, was largely increased and their pay and prospects considerably improved. The minimum pay of rangers was raised from Rs. 50 to Rs. 60 and the maximum from Rs. 150 to Rs. 200. The class of deputy rangers, which was found unsatisfactory in many respects, was abolished and merged into that of foresters. The minimum pay of foresters was raised from Rs. 15 to Rs. 20 and that of forest guards from Rs. 8 to Rs. 10.

Consequent on the abolition of the grade of deputy rangers a new system of recruitment has been introduced. Hitherto the practice had been to appoint as deputy rangers men of suitable educational qualifications and of good physique. After two years those of them who showed signs of promise were deputed to undergo a course of training at the Forest College, Coimbatore, with a stipend of Rs. 50 per mensem. Those who completed the training satisfactorily and obtained honours or higher standard certificates were appointed as rangers. Under the new system of recruitment, suitable men will be entertained as probationary rangers on Rs. 50 per mensem and will be posted to work in a district. After two years' probation those who give promise of becoming successful rangers will be sent to the Forest College, Coimbatore, and on completing the prescribed course of training there satisfactorily will be appointed as permanent rangers. The Government hope that under the new system of recruitment and with the improvement in pay and prospects consequent on the reorganization of the subordinate staff it will be possible to attract to the department recruits of the right stamp in increasing numbers.

4. *Paragraph 10 of the Chief Conservator's letter.*—It is a matter for congratulation that the number of forest offences has decreased year by year during the last four years. A number of reasons for this marked decrease have been given by local officers but a probable reason is, as pointed out by the Chief Conservator, that the villagers are becoming used to forest restrictions and are less inclined to contravene the rules.

5. *Paragraph 16 of the Chief Conservator's review.*—Fire protection is one of the important problems in regard to which the department has yet to find a successful solution. So far as the figures for the year under review go, they show a decrease

Year.	Number of forest offences.
1914-15	32,541
1915-16	30,885
1916-17	28,087
1917-18	27,091
1918-19	26,160

n the number of fires and of areas affected as compared with the figures of the previous year. But the Chief Conservator admits that the figures are unreliable. The Government are glad to observe that the co-operation of hill tribes continues to be a satisfactory feature of the administration in Ganjam and Vizagapatam and on the Javadi Hills. But the Chenchus of the Kurnool district are reported to be responsible for burning extensive areas of forest. A special officer, Mr. Saunders of the Police Department, was appointed in 1917 to devise measures to improve their condition, to supervise their conduct and to try and induce them to abandon their practice of destroying the jungle. During the year under review, however, the Chenchus, owing to a variety of causes chiefly economic and in spite of the devoted endeavours of Mr. Saunders, got out of control and perpetrated a considerable amount of damage to the forests on the Nallamalais. The question of the measures to be taken to wean this unfortunate hill tribe from their criminal and destructive habits is separately engaging the attention of Government.

6. Paragraphs 22 and 23 of the Chief Conservator's review—Financial results.—The net surplus of revenue over expenditure amounted to Rs. 17.85 lakhs. The large accumulation of surpluses in the last few years was due to abnormal conditions, created by the war. The department is already embarking on schemes of exploitation and a considerable expenditure on communication, buildings, machinery, etc., will be necessitated but it is hoped that this expenditure may result in considerable profit accruing to the department in future years.

7. Paragraph 26 of the Chief Conservator's review.—A separate review will be published, dealing with the work of forest panchayats. Forest panchayats were first started in 1914, as a result of the recommendations of the Forest Committee, but they have not been as successful as was hoped. To investigate the causes of this lack of success and to devise measures for extending the system on a sound basis, the Government have resolved to place an officer of the Indian Civil Service on special duty at an early date.

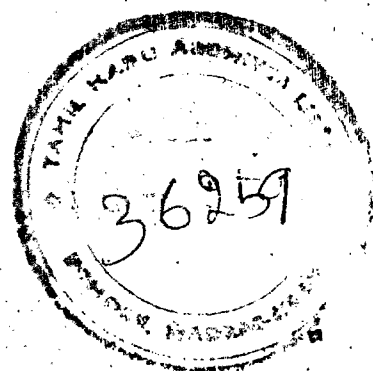
8. Appendix B of the reports.—The large increase in the number of cattle impounded during the year over the figures of the previous years requires explanation.

9. The Inspector-General of Forests paid a visit to the Presidency during the year and favoured the Government with an interesting and valuable note on his inspection of the forests in Ganjam, South Malabar and the Nilgiri districts.

(True extract)

L. D. SWAMIKANNU,
Tempy. Addl. Secretary to Government.

To the Chief Conservator of Forests.
„ Board of Revenue, (Land Revenue).
„ Accountant-General, Madras.
„ Government of India, Department of Revenue and Agriculture (with C.L.).
„ Inspector-General of Forests (with C.L.).
„ Publicity Officer.
Editors' Table.



செப்பநீருபவர் பெயர் K.யு.பி.
செப்பநீருவதற்காக எடுத்த தொகை ரூ. 2
கொள்ளப்பட்ட நாள் 1934
செப்பநீரு முடிந்த நாள் 25/11/34
உதவியளித்தவர் க.யு.பி.
உதவியளித்த தொகை ரூ. 2
கொள்ளப்பட்ட நாள் 1934